

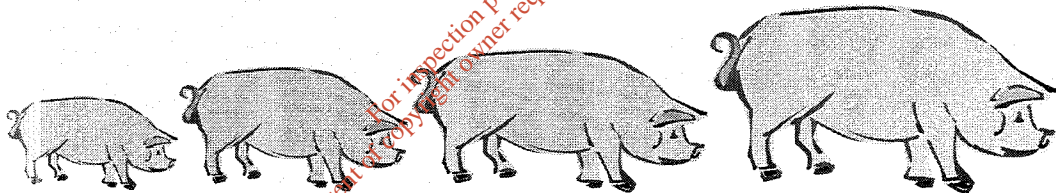
# **ENVIRONMENTAL IMPACT STATEMENT**

**Relating to**

## **AN EXISTING PIG FARM**

**AT**

**BALLYKNOCKANE, BALLYMACKEY,  
NENAGH,  
CO. TIPPERARY**



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**September 2007**

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## **TABLE OF CONTENTS**

### **1. NON-TECHNICAL SUMMARY**

### **2 INTRODUCTION**

**2.1 Relevant Regulations for Environmental Impact Statements (EIS)**

**2.2 National and E.C. Policy**

**2.3 Organisations and bodies consulted**

### **3 DESCRIPTION OF PROPECT**

**3.1 Overall Description**

**3.2 Size and Scale of the proposed Development**

**3.3 Siting, Design, Construction and Structural Details**

**3.3.1 Construction Details**

**3.3.2 Design**

**3.4 Co Product & Waste Production**

**3.4.1 Types and Quantities of Co Product & Waste**

**3.4.2 Animal Carcasses**

**3.4.3 Air Emissions**

**3.5 Pig Manure/Digestate Use Proposals**

**3.6 Pig Manure tankers owned and available**

**3.7 Requests to use pig manure/digestate as a fertiliser**

**3.8 Details of services required**

**3.9 Details of feedstuffs**

**3.10 Maximum soil contaminants concentration**

### **4. DESCRIPTION OF ALTERNATIVES CONSIDERED**

**4.1. Alternatives sites considered**

**4.2. Alternatives Site Layout & Designs**

#### **4.3. Alternative Processes Considered**

### **5. DESCRIPTION OF EXISTING ENVIRONMENT**

#### **5.1 Location of Structures**

#### **5.2 Deliveries to Customer Farms of pig manure which is currently used as a fertiliser & where it is proposed to apply digestate**

#### **5.3 General Description of the Existing Environment**

##### **5.3.1 Land Use and Cropping History**

##### **5.3.2 Water Quality Analysis**

##### **5.3.3 Existing Air Quality**

##### **5.3.4 Noise Levels**

##### **5.3.5 Traffic Levels**

### **6. DESCRIPTION OF IMPACTS & MITIGATION MEASURES**

#### **6.0. Employment & Human Well Being**

##### **6.1. Structures**

##### **6.1.1. Landscape and Visual Aspects**

##### **6.1.2. Pig Manure/Digestate Storage, Surface and Groundwater**

##### **6.1.3. Noise Levels**

##### **6.1.4. Odours and Emissions**

##### **6.1.5. Estimated Increase in Traffic**

##### **6.1.6. Mortality, Transport and Disposal of Carcasses**

##### **6.1.7. Accidental Spill**

##### **6.1.8. Control of Rodents**

#### **6.2 APPLICATION OF PIG MANURE**

##### **6.2.1. Pig manure/Digestate application Rates and Nutrient Balance**

**6.2.2. Pig Manure/Digestate use & Quality of Surface and Ground Waters**

**6.2.2.1.Relevant Guidelines**

**6.2.2.2.Description of Likely significant Impacts**

**6.2.3. Air Quality and Pig Manure/Digestate use**

**6.2.4. Management of Co Product use**

**6.2.5. Mitigation Measures**

**6.2.5.1.Reduction of Odour Emissions**

**6.2.5.2.Periods and Rates of Use of Pig Manure/Digestate**

**6.2.5.3.Reduction of Risk of Disease Spread**

**6.2.5.4.De-commission/life span of development**

**6.2.5.5.Depopulation**

**6.2.5.6.Reduction of risk of pollution to surface and groundwater**

**6.3 General**

**6.3.1. Flora & Fauna of the Lands whereupon it is Proposed to use Pig Manure/Digestate, and the site**

**6.3.2. Archaeology and Cultural Heritage**

**6.3.3. Traffic**

**6.3.4. Climatology**

**6.3.5. Interactions**

**6.3.6. Material Assets**

**7. MONITORING**

**7.1. Drainage from the Site**

**7.2. Groundwater & Surface Water**

**7.3. Pig Manure/Digestate Use**

**7.4. Pig Manure/Digestate Storage**

**7.5. Other wastes**

**8. Measures envisaged in order to avoid, reduce and if possible, Remedy significant adverse effects.**

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## APPENDICES

1. **Location Maps**
- 2 **Drawings of the proposed pig farm & Farm Structures Table**
- 3 **Composite map of customer farms**
- 4 **Dixon Brosnan Report**
- 5 **Carcass Disposal Agreements**
- 6 **Stormwater Visual Inspection Register**
- 7 **Proposals to dispose of carcasses in the event of a category A disease outbreak**
- 8 **Archaeological Report**
- 9 **Well Report**
- 10 **Pig Manure Digestate Register**
- 11 **Code of Good Practice for pig manure spreading & Buffer Zones**
- 12 **Landscaping Report**
- 13 **Emergency Response Procedure**
- 14 **Refuse waste register**
- 15 **Fluorescent Tubes Register**
- 16 **Water Quality Analysis**
- 17 **Contract for Disposal of Veterinary Waste**
- 18 **Carcass register**
- 19 **Veterinary waste register**
- 20 **S.I. 378 of 2006**
- 21 **Register for Vermin Control**
- 22 **Climatology Report**
- 23 **Development of The National Pig Industry**

## 1. NON-TECHNICAL SUMMARY

- 1.1 This proposal for permission to demolish 11 No. old pig fattening houses, construction of 3 No. new modern pig fattening houses and associated site works on an existing pig farm at Ballyknockane, Ballymackey, Nenagh, Co. Tipperary (Grid Ref E1981550, N822050), is being put forward by NRGE (Nutrient Recovery to Generate Electricity) Ltd, whose registered office is at Mooresfort, Lattin, Co. Tipperary. This application has been prepared and submitted by NRGE on behalf of Woodville Pig Farms Ltd, (Site Owners), whose registered office is at Woodville, Ballymackey, Co. Tipperary to improve the environmental performance of the existing facility. The facility will conform to the highest standards. This development comprises of an activity in relation to which a licence under Part IV of the new first schedule to Environmental Protection Agency 1992 as amended by Protection of the Environment Act 2003 is required at Ballyknockane, Ballymackey, Nenagh.
- 1.2 The development will occupy a landscaped site of approximately 2.74 hectares, (6.77 acres). The proposed works will not increase the stock numbers on site, which is currently 8,000 pigs reared to bacon weight, but rather provide compliance with the forthcoming E.C. Regulations on Animal Welfare, Nitrate Directives, and incorporates emission reduction measures, as required by their IPPC Licence, along with the replacement of existing old structures on site.
- 1.3. The buildings and their layout will be state of the art for the industry. All clean water from the site, is collected via the stormwater collection system (See Site Layout Plan, in Appendix 2), and directed into the monitoring point identified as SW1, which is marked on said drawing. These monitoring points are visually inspected weekly, and sampled quarterly. All soiled water is diverted into the adjacent pig manure storage tanks. Each of the proposed structures will have an independent leak detection system, with individual inspection chambers, which will be connected to a site inspection chamber at the south western end of the site identified as LD1, on the site layout plan.
- 1.4. An application for an IPPC Licence will be submitted to the Agency shortly as the stock numbers on site are greater than the capacity for which an IPPC Licence is required. It is planned to submit this application within the next month. The main components of this proposal are;
- (i) Provision of new animal houses providing area compliance with Animal Welfare Regulations.
  - (ii) Provision of covered pig manure storage to replace existing open Pig Manure Storage tanks.
  - (iii) Provision of independent leak detection systems under all proposed structures on site
  - (iv) Covering of all passageways used for pig movement.
  - (v) Removal of pig manure from under pig houses to proposed anaerobic digester for treatment within 2-4 weeks of production.
  - (vi) Bunding of all feed tanks and fuel tanks on site.
  - (vii) Treatment of pig manure in proposed anaerobic digester which is the subject of a separate planning application.



- 1.5 The estimated annual production of pig manure from this pig farm is 15,276 m3.
- 1.6 The pig farm and anaerobic digester (which is currently subject of a separate application) will give direct employment to 6 staff members, and a trained manager. It will also give rise indirectly to another 40 jobs in the pig meat processing, milling and service sectors.
- 1.7 The application of animal manure to farmland is now regulated under S.I. No. 378 of 2006 and distribution of manure from this site will comply with those regulations. This facility is entitled to supply manure to any local farmer who wants it, and is obliged to record all dispatches from the holding and the farmers acquiring manure are obliged to record all consignments acquired and to use it in compliance with the regulations. Manure will not be supplied to customer farms between 15<sup>th</sup> October and 31<sup>st</sup> January in any year except with the consent of the local authority, or any other relevant authority. Outside that period, manure will be supplied from the site to a customer farmer, only in response to an order. Managed and used in this way, manure produced at this facility will not have any adverse impact on environmental parameters either inside or outside the site.
- 1.8 Steps have been taken in the selection of the customer farms whereupon it is proposed to use digestate and in designing the management of its use to ensure that no contamination of surface and groundwater takes place. The proposed development of an anaerobic digester on an adjacent site will significantly reduce the risk to surface and groundwater.
- 1.9 An Environmental Impact Assessment was carried out in support of this application. This entailed site surveys of water quality analyses, geohydrological surveys, Flora & Fauna, archaeological monuments and traffic levels were also noted. The following statements may be made.
- (a) The customers lands selected whereupon pig manure will be used are well drained. No contamination of surface waters with run-off waters containing high phosphorus content can be foreseen with the applied management. Neither will contamination of groundwater with nitrate-nitrogen take place
  - (b) The quality of the surface and groundwater leaving the area of customer farms is good.
  - (c) The impacts from traffic, noise and odours at the pig unit are insignificant after all practical steps have been taken to mitigate them.
  - (c) Pig manure will be applied using tankers equipped with low trajectory splash plate or the band spreading method.
- 1.10 Proposals for monitoring surface and ground waters at the site are set down in the Environmental Impact Statement. A register of digestate quantities, date of delivery and name and farm code of landowner will be maintained for inspection by North Tipperary County Council, and the EPA at all reasonable times.

- 1.13 The flora, fauna and habitats of the site were studied. See report by Carl Dixon of Dixon Brosnan Environmental Consultants (Appendix No. 4). Flora and fauna should not be affected by this development. There will be no loss of habitat.
- 1.14 There will be no damage to any site of archaeological or historic interest as a result of the development or digestate applications. An archaeological report is included in appendix No 8.
- 1.15 Disturbance of the landscape will be minimal during the construction period. The site will be suitably landscaped, with the planting of trees etc., in a manner sensitive to the environment. This site is not in or near any NHA, SAC or SPA and does not threaten any such site in any way.
- 1.16 There will be no negative effects on tourism in the area.
- 1.17 The development will have a positive impact on human beings from the increased employment it will create, and the resultant reduction of existing impacts from emissions. The development is located in an agricultural area and the buildings will blend into the surrounding area. Also, the development will be landscaped with a screening of trees, shrubs and flowers. Thus, there will be no nuisance or loss of amenity. A landscaping report is included in appendix No 13.

Effects of the development on air are insignificant outside the buildings and adjoining yards. The ventilation system will ensure that foul air is dispelled high into the atmosphere where it will mix with fresher air and thus minimise odour. Mitigation measures taken will minimise the effects of odour from this pig farm by the replacement of 4 No existing open pig manure storage tanks with an engineered geomembrane covered storage basin. If the proposed development on an anaerobic digester at Ballyaghveny, Ballymackey, Nenagh, Co. Tipperary, should proceed), the current practice of pig manure application to agricultural land, will be replaced by application of digestate, resulting in an 80% reduction of odours generated, due to gas extraction. Pig manure will also be moved fresh from the farm to the Anaerobic Digester, every 2-4 weeks, thereby further reducing emissions from the pig farm. Low protein diets are being utilised on site, which can achieve a reduction of 30%, of emissions from the site. Inserting the slurry tankers armoured suction hose in a fixed pipe in the walls of the pig manure tanks will minimise the effects of odour as will the use of a low trajectory splashplate and/or bandspreader, and adhering to the Code of Good Practice for Spreading of Slurry.

Noise levels from the development are unlikely to be a nuisance. The main sources of noise on the development will be at feeding time (10-15 minutes) and from feed delivery vehicles. However, at a distance of 100 metres from the development noise levels are not greatly above background noise levels.

The development will have an insignificant effect on the climate of the area.

Thus the measures that have been put in place will ensure that impact/effects of the Development on human beings, noise, air, climate and the interaction of human beings, Fauna, soils, air, water, climate, landscape and material assets will be minimised.

- 1.18 In a discussion paper published by the Environmental Protection Agency (January 2005), it concluded that “*Anaerobic Digestion has the potential to deliver multiple environmental benefits, including reduced water pollution potential, lower green house gas emissions, and reduced odours from agricultural slurries.*”
- 1.19 This proposed development has the potential to benefit all stakeholders adjacent to the proposed site and the customer farms. The nett result of this proposed development will be a reduction of existing impacts to the order of at least 50%, from the site and 80% from the application of digestate in place of pig manure to customer farms, should the proposed anaerobic digester be constructed.

## 2 INTRODUCTION

### 2.1 **Relevant Regulations for Environmental Impact Statements (EIS)**

The proposed development will result in the development of an installation that belongs in a class listed in Schedule 5 Part 2 of the Planning and Development Regulations 2001, and so the submission of an Environmental Impact Assessment is a mandatory requirement. This report follows the structure and protocols detailed in *Advice notes on current practice in the preparation of Environmental Impact Statements (EPA 2003)* and *Guidelines on the information to be contained in Environmental Impact Statements (EPA 2002)*.

The scale of the proposed development is above the threshold for Class 1(e) (ii) activity, “*Installations for intensive rearing of pigs not included in Part 1 of this Schedule which would have more than 2000 places for production pigs (over 30 Kilograms), in a finishing unit, more than 400 places for sows in a breeding unit or more than 200 places for sows in an integrated unit*”

The existing facility operates as an 8000 fattening pigs to factory weight and the proposed facility will operate at the same level. This statement is drafted with particular regard to Article 94 and schedule 6 in the 2001 regulations, and is submitted to provide information which may be helpful to the planning authority in making its decision on the application for permission to construct this new facility.

## 2.2. NATIONAL AND E.C. POLICY

The proposed development is in line with national policy, (i) as expressed by the Minister for Agriculture on 10/7/1987 in a development plan for the Irish Pig Industry (ii) as expressed in the Pig Production Group Report of 1988 and (iii) is in line with projected slaughtering of pigs at meat plants by the IDA, aimed at increasing the competitiveness of Irish pig meat in overseas markets. The Irish Government and the EC have updated Irish meat plants in accordance with national and E.C. policy, entailing the expenditure of large sums of money by the promoters and substantial capital grant-aid.

As recently as mid 1997 Teagasc launched a plan (Development of the National Pig Industry) to increase pig production in Ireland from 3.29 million pigs in 1996 to 4 million by the year 2000 (See Appendix No. 23).

Currently the Department of agriculture and food is providing grant aid for the construction of new animal houses, to help ensure compliance with new Animal welfare Regulations, as well as grant aid to improve facilities, structures, and equipment to ensure compliance with the Nitrate Directive Regulations.

## 2.3. ORGANISATIONS AND BODIES CONSULTED

The scoping exercise of the EIS was carried out in line with previous submissions to North Tipperary County Council. Other organisations and bodies consulted include: -

Geological Survey of Ireland  
Met Eireann  
Central Fisheries Board  
Office of Public Works  
Department of Agriculture  
Department of the Environment  
National Parks and Wildlife Service  
Teagasc, Johnstown Castle  
Environmental Protection Agency

## 3. DESCRIPTION

### 3.1. Overall Description

This proposal envisages the re-development of the existing facility which has the capacity to accommodate 8000 fattening pigs comprising the facilities necessary for this pig farm, and associated meal and manure storage and distribution facilities. This proposal incorporates such features as a covered engineered geomembrane storage basin, covered passageways, which when coupled with the use of low protein diets, and anaerobic digestion at the adjacent site, ensure the overall reduction of emissions, which is in

accordance with BATNEEC, and conditions of IPC Licence which will have to be applied for to incorporate the new proposed developments. It is planned to submit this IPPC License application shortly. Drawings of the proposed new structures are presented in Appendix 2.

### **3.2. SIZE AND SCALE OF THE PROPOSED DEVELOPMENT**

The size and scale of the proposed development have been chosen after consideration of such matters as the site, customer demand for manure, economic viability and labour efficiency. This application does not propose to increase from the current capacity of 8000 fattening places.

In full production the pig population at this site will comprise at any one time 8000 fattening pigs. Pigs will be slaughtered at approximately 105-kg live weight.

### **3.3. SITING, DESIGN, CONSTRUCTION AND STRUCTURAL DETAILS**

The proposed development is situated on the site of an existing pig unit facility. Development involves the construction of new buildings and items of plant to comply with Animal Welfare Regulations, and Nitrate Directive Regulations. It is also proposed to replace the existing over-ground pig manure storage tanks, with an engineered covered storage basin. Details of siting and design are shown in Appendix 2.

#### **3.3.1. CONSTRUCTION DETAILS**

A site location map and planning notice and a site plan are provided as part of Appendix 2.

#### **3.3.2. DESIGN**

In arriving at an overall design of new buildings, consideration is given to colours of external facing materials to ensure maximum compatibility with the surrounding landscape. Also, features such as minimising ridge heights are an important element of the design process.

### **3.4. CO PRODUCT & WASTE PRODUCTION**

The co-product produced is pig manure. The wastes produced are animal carcasses, foul water, odour emissions, veterinary waste, fluorescent tubes and general refuse.

#### **3.4.1. TYPES AND QUANTITIES OF CO PRODUCT & WASTE**

The major co product from the proposed facility is pig manure; the yearly production of which amounts to 15,276 m<sup>3</sup>, the calculation for which is set out in Table 1 overleaf. It is intended that all pig manure will be diverted fresh to the proposed anaerobic digester, on an adjacent site which is subject

of a separate planning application to produce digestate, for export to customer farms as fertiliser.

**TABLE 1: Pig manure Production**  
**BALLYKNOCKANE FATTENING UNIT**  
**CALCULATION OF PIG MANURE VOLUMES**

PIG TYPE	NUMBER OF STOCK	NEAT excreta Pig/week (litres)	Total Litres	Total M3
Farrowing Sows	0	0	0	0.00
Dry Sows	0	0	0	0.00
Boars	0	0	0	0.00
Gilts	0	0	0	0.00
Weaner	0	0	0	0.00
Fattener	8000	34	272000	272.00
<b>Total Pig Manure per week</b>			272000	272
<b>Total Pig Manure per annum</b>			14144000	14144
<b>Extraneous water 8%</b>			1131520	1132
<b>Total annual production pig manure</b>			<b>15275520</b>	<b>15276</b>

**(a) Extraneous Water**

In addition to the pig manure there currently is extraneous water for washing at a rate of 8% for fatteners, which equates to a further 1132 m3 to the annual figure of 14144 m3.

The total volume of pig manure generated at this facility will therefore be 14144 m3 neat pig manure and 1132 M3 extraneous, arriving at 15276 M3. This figure is herein used for all calculations, but it is expected it will be reduced following the development of this new facility, by exclusion of rainfall ingress to pig manure storage tanks, and a more efficient feeding system on site.

**3.4.2 ANIMAL CARCASSES**

The anticipated number of animal carcasses for disposal due to mortalities on an annual basis is estimated as follows:-

Sows	@	4% =	0
Piglets	@	8% =	0
Weaners	@	1.5% =	0

Fattening Pig @ 1% = 800

Carcasses will be temporarily stored in a covered sealed metal skip for transport by Beechfield Products Ltd who is an authorised waste collector and disposal to Premier Proteins Ballinasloe who are a licensed rendering plant at regular intervals. A signed agreement to this effect is given in Appendix 6.

### 3.4.3 AIR EMISSIONS

The main objective of this application is to aid the overall reduction of emissions from this facility. This issue was discussed in a report prepared by Odournet UK Ltd, in 2001 titled "**Odour Impacts and Odour Emission Control Measures for Intensive Agriculture Part A Odour annoyance assessment and criteria for intensive livestock production in Ireland**", which was commissioned by the Environmental Protection Agency, wherein section 9.6 page 69 it states "*that a reduction in odour emission is not likely to be greater than 50% and more likely to be in the order of 25-30%*" by reducing crude protein levels in the diets. Emissions from open slurry storage tanks are also discussed in section 9.9 page 74 wherein it states that ammonia emission reductions of 70-80% have been achieved by covering open tanks. Removal of pig manure from this facility at present is by tanker armoured suction hose inserted into the tank with minimal odour release.

The development of the proposed anaerobic digester on an adjacent site proposes that all pig manure from this farm will be utilised to produce gas via the anaerobic digester, and transferred to adjacent covered storage tanks, after separation of solids, from where the odourless digestate will be exported to customer farms as liquid fertiliser. Odours that can arise during land spreading of the pig manure will be eliminated by this technology.

#### **Control Measures to Minimise and Abate Odour on site at present**

Emissions from the Woodville Pig Farm Ltd site are currently contained using the following recommendations;

1. Reducing uncontrolled air movements on site and leakage from the ventilation system and from pig houses (I.E windows and doors)
2. The use of a high-tech computerized ventilation system, in animal houses with a back up system.
3. Minimising the generation of odours during meteorological conditions which favour spread of odours.
4. The storage of carcasses in covered sealed containers on site.
5. A 100mm buffer is maintained at the top of all covered pig manure storage tanks to allow for the accumulation of gases.
6. Minimisation of the agitation of pig manure and the filling and emptying of liquid storage tanks from below the surface of the stored manure.
7. Transporting pig manure in suitably contained leak proof vehicles.
8. Limited areas where pigs are moved outside buildings, and covering of passageways and yards where animals have access.

9. Use of low protein diets to all animals on site has reduced emissions on site by 30%.

### **Proposed Measures to further Minimize and Abate Odour on site**

1. Continued incorporation of low protein diets on site in line with recommendations from Nutech Nutrition Ltd. It is estimated that 30% reductions have already been achieved, in line with recent research.
2. All pig manure will be delivered fresh to the proposed anaerobic digester within 2-4 weeks of production, thereby greatly reducing emissions from under floor storage tanks. The fresher the pig manure is delivered to the digester the greater the gas production levels that will be achieved. Removal of pig manure regularly from the storage tanks under the pig houses will effectively qualify these houses as low emission housing. This process is described in detail in a document that is publically available on the internet, at <http://www.infomil.nl/luch/index.htm>.
3. The development of the anaerobic digester will negate the requirement of agitation of raw pig manure in open storage tanks, which we know is a major source of emissions from this site currently, as all pig manure leaving this facility is agitated in one of the four existing over-ground storage tanks. Odournet UK Ltd who have acted as the Agency's experts on a number of sites to date have referenced in a report prepared for another pig farm that "*The specific emission rate of an open storage tank, is assumed to increase from 150 ouE m<sup>-2</sup>.s<sup>-1</sup> to 500 ouE m<sup>-2</sup>.s<sup>-1</sup>, when the slurry is being agitated*" this is stated in page 10. Section 2.2, of a report prepared by Odournet UK titled: **Review of Odour impact of two pig production units and options for improvement**'.
4. The replacement of the current use of 4 No open pig manure storage tanks with an engineered geomembrane covered storage basin, will also reduce emissions from the site.

The nett result of this proposed development will be a major reduction of the current level of emissions from this facility, in the order of at least 50%.

### **3.5. PIG MANURE USE PROPOSALS**

It is proposed to supply all the pig manure from this facility as fuel to the proposed anaerobic digester, for gas production. After digestion, the solids will be separated containing approx 70-80% of the P content. This material will be suitable for supply to a nursery, garden centre, or alternatively to fertilise an agricultural crop with a high P demand (e.g. Beet or maize). The remaining digestate will be exported to customer farmers operating in the hinterland, who are currently customers for pig manure, in accordance with Nitrate Directive Regulations (S.I. No 378 of 2006). Odours that arise currently during application of pig manure will be reduced by 80% approx by this proposal.



### **3.6. PIG MANURE TANKERS OWNED AND AVAILABLE**

The developer will engage a professional contractor to supply a tanker for the purpose of delivering the digestate to customer farms in the area.

### **3.7. REQUESTS TO USE PIG MANURE DIGESTATE AS FERTILISER**

This facility will supply digestate to customer farmers in the area, upon request, and all deliveries will be documented on site. A copy of this register format is included in Attachment 10, and same will be available on site for inspection by North Tipperary County Council, and Agency inspectors. All customer farms are now required to comply with the Nitrate Directive regulations (S.I. No. 378 of 2006), and will thereby have to record these manure imports on site. A composite map of existing customer farms is included in appendix 3 on a map scale 1:50,000.

### **3.8. DETAILS OF SERVICES REQUIRED**

The estimated daily water requirement of the unit in full production is 35000 litres (35 M3). A bored well provides water and this well has sufficient capacity for the new development. The analysis of a water sample taken from this well is included in Appendix 9, along with location map.

A 200 KVA transformer, adjacent to the site provides electricity supply. A generator on site provides the back up supply with a 450 KVA capacity.

An Energy Efficiency Audit of the current site is currently being carried, and a copy of the resultant report will be available for inspection.

### **3.9 DETAILS OF FEEDSTUFFS**

About 85 tonnes per week of a balanced meal mixture will be consumed on the unit by the fattening pigs. This feed is milled on site on a least cost basis using the following raw materials (barley, wheat, soyabean meal, sugar beet pulp, pollard, Soya oil, molasses, minerals and vitamins). All feeds are prepared on a low protein basis, which is a process that has been introduced slowly, with proper assessment of ongoing performance. This work is supervised on site by Nutech Nutrition. All pigs will also have access to drip free nipple drinkers.

Copper is added to the meal mixture at the rate of approx. 0.5 kg of copper sulphate (CuSO<sub>4</sub> 5H<sub>2</sub>O) per tonne of meal for growing and finishing pigs. This gives rise to pig manure with a copper content of 30 mg/L. It is not proposed to supplement the meals with zinc.

### **3.10 MAXIMUM SOIL CONTAMINANT CONCENTRATION**

The pig manure currently applied, does not add any contaminant to the lands whereupon it is used. The elements in the pig manure comprise chiefly carbon, oxygen, hydrogen and nitrogen with lesser amounts of phosphorus, sulphur and copper. At an application rate of 15 m<sup>3</sup>/hectares, the application rate of 0.45kg/hectare Cu is less than 3% of that permitted in EC Directive 86/278 on the application of sewage sludge to agricultural land. The proposed development of an anaerobic digester on site will greatly reduce the nutrient content, and environmental impact of the digestate to be spread as liquid fertiliser on customer farms.

## **4. DESCRIPTION OF ALTERNATIVES CONSIDERED**

### **4.1. Alternative Sites Considered**

Woodville Pig Farms Ltd engaged NRG (Nutrient Recovery to Generate Electricity Ltd), to carry out a feasibility study for the development of this site. The existing pig farm is located in an agricultural area on a level site elevated about 110mOD. The existing site also has an existing mill facility at the western end of the site. Most of the existing pig houses on site are old, and the main pig manure storage capacity on site is in open storage tanks. It was decided to replace these open storage tanks with an engineered covered geomembrane storage basin, and to construct 3 No new houses to replace 11 No old pig houses, which even with the additional space per animal requirement, would be more compact and provide a better environment for stock, staff members, and all stakeholders alike. It was also proposed to export all pig manure to the proposed anaerobic digester which is currently being processed in a separate planning application.

### **4.2. Alternative Site Layout and Designs**

Alternative site layouts and designs were considered. The optimum depth of tank was decided upon on the basis of air draughts, capacity, emission reduction and costs etc. Generally the most economical and efficient layout for pig production and pig movement was designed for, with a view to reducing environmental impacts, and providing a safe and healthy environment for staff and livestock.

### **4.3. Alternative processes considered**

There is no other satisfactory alternative process for pig production. The proposed anaerobic digester will utilise the pig manure from this pig farm to generate gas. In the process solids will be removed including 70% of P. The digested material is stabilized by the process so it is almost odour free. Much of the carbon has been removed from it and has been homogenized during the process so it becomes thinner and of an even consistency and the nutrient it contains has become plant available so it is a valuable fertiliser. The method proposed (low trajectory splash-plate/band spreading) is very practicable for applying this product. The use of low emission housing designs, and covered storage basin, along with the use of low protein diets on

site will greatly reduce emissions from this pig farm, which could be further reduced by the export of pig manure within 2-4 weeks of production to the proposed anaerobic digester.

## **5. DESCRIPTION OF EXISTING ENVIRONMENT**

### **5.1. Location of Structures**

The site location map (Ordnance Survey map sheet No TY016 and TY022 County Tipperary) is included in Appendix 1, and the drawings and site plans for this development are included in Appendix 2. The proposed unit is located in the Townland of Ballyknockane, Ballymackey, approx. 4km from Moneygall on the N7 (Limerick to Dublin Road), and 4Km due north of town of Toomevara. This facility is located in a wholly agricultural area.

### **5.2. Deliveries to Customer Farms of pig manure which is currently used as a fertiliser & where it is proposed to apply digestate.**

The application of animal manure to farmland is now regulated Under S.I. 378 of 2006 and distribution of manure from the site will comply with those Regulations. The Applicant is entitled to give manure to any local farmer who wants it and is obliged to record all despatches from the holding and the farmers acquiring manure are obliged to record all consignments acquired and to use it in compliance With the Regulations. A composite map of existing customer farms is included in appendix No3.

Animal manure produced in the existing facility is currently distributed to local farmers in response to their demand and for their use on their farmland. The manure that would be produced by animals to be housed in the proposed development would be similarly distributed. Local demand for pig manure is buoyant. The applicant has more customers and more demand than can be satisfied from the existing herd. The applicant is entitled to supply it to his customer farmers who want it and are not prohibited from using it. The use of animal manure to fertilise farmland is subject to statutory control under S.I. 378 of 2006.

Manure from the site would be supplied in response to customer farmers' demand and in compliance with law. The calculation of expected manure production is discussed in section 3.4.1 page 13 of this report, and the manure storage capacity is calculated on the Farm Structures Table in Appendix No 2.

## **5.3 GENERALISED DESCRIPTION OF THE EXISTING ENVIRONMENT**

### **5.3.1 Land Use and Cropping History**

The lands whereupon it is proposed to use pig manure, consist mainly of grassland, for grazing / silage production and tillage. Farm management standards on all these farms are good.

### **5.3.2 Water Quality Analysis**

Water samples were taken from the well supplying the unit, and full analyses results from an independent laboratory are included in Appendix No 9, along with a map showing the location of the well. The well will be analysed annually, and the stormwater monitoring points will be visually inspected weekly and water samples taken quarterly.

### **5.3.3 Air Quality**

Currently emissions to air from the site are not an issue, and would be mostly attributable to the animals that are currently on the site. The odour associated with this site does not and will not cause annoyance and will not interfere with amenity outside the boundary of the site. The nearest dwelling to this site is at a distance of 100 metres. This development will reduce current emissions by use of modern house designs, and ventilation systems.

The proposed development will take place in an entirely agricultural hinterland where typical farm odours are to be found and expected. These odours arise from farmyards and lands during the day to day operations such as silage feeding, slurry agitation and land spreading. The existing unit, using best available practices, is already operating without a significant effect on the environment and this situation will be greatly improved as a direct result of this development. The covering of all passageways and open yard area where pigs have access, along with the covering of existing open storage tanks, will reduce the environmental impacts of this facility. In addition to these measures the installation of the proposed anaerobic digester would greatly enhance the environmental performance of this facility.

### **5.3.4 Noise Levels**

A simple definition of noise is “unwanted sound”. The major noises associated with a pig unit are animals at feeding time, ventilation fans, feed unloading and tractors loading pig manure.

Noise levels are measured in decibels and a weighting factor (A) is applied to approximate the frequency response to the human ear. This weighted decibel scale, dB (A) correlates well with human sensations of loudness, disturbance and annoyance.

Noise emissions from this pig farm are not audible, at the site boundary. Noise levels are generally low and typical of a quiet rural area during daytime.

### 5.3.5 Traffic Levels

#### Woodville Pig Farms Ltd

Details are set out below of the current and proposed traffic movements of this pig farm. They come under the following headings.

1. Staff transport  
There are currently two movements to and from work daily. On completion of this development staff numbers will remain the same.
2. Stock Deliveries  
There will be 3 deliveries of weaner pigs per week. This figure will remain the same on completion of the new development.
3. Feed Deliveries  
There currently are 5 deliveries of feed per week and this volume will remain the same on completion of this proposed development.
4. Stock sales & Carcasses  
There are currently a maximum of 3 loads of fat pigs delivered to the factory weekly from this site and this will be the same on completion of this development. Carcasses are currently removed fortnightly from this site and this will remain the same on completion of this development.
5. Service staff, sales, inspectors, etc.  
There is currently and will be an average of 3 car visits per week for service men, salesmen, and inspectors from all regulatory authorities to this facility.
6. Delivery of pig manure to proposed anaerobic digester or to customer farmers.  
There will be 15,276 M3 approx of Pig manure/digestate to be delivered to customer farmers per annum. This will require 12 lorry loads per week as all liquid digestate will be transported off site by lorry tanker. Currently approx 50% of the pig manure being transported off site is carried by tractor tanker with 2500gal capacity. The current practice requires 275 lorry movements and 658 tractor movements per annum to transport pig manure off site. It is proposed to cease use of tractor tanker movements off site thereby reducing overall traffic movements

**Table 2: Current Traffic Movements Servicing this Site**

No	Vehicle Type Car/Lorry etc	Details	Capacity	Weekly Units	Annual Units
1	Car	Staff to work		24	1248
2	Lorry	Weaners to the fattening unit		6	312
3	Lorry	Feed deliveries	20 Tonne	10	520
4	Lorry	Fat pigs to factory	260	6	312
	Lorry	Carcasses to rendering	15 Tonne	1	52
5	Car	Service staff; sales men; Inspectors		6	312
6	Lorry	Pig manure to	27.3 M3	11	550
	Tractor	customer farmers	11.4 M3	25	1300
Totals				89	4606

**Table 2a: Proposed Traffic Movements to Service this Site**

No	Vehicle Type Car/Lorry etc	Details	Capacity	Weekly Units	Annual Units
1	Car	Staff to work		24	1248
2	Lorry	Weaner deliveries		6	312
3	Lorry	Feed deliveries	20 Tonne	10	520
4	Lorry	Fat pigs to factory	260	6	312
	Lorry	Carcasses to rendering	15 Tonne	1	52
5	Car	Service staff; sales men; Inspectors		6	312
7	Lorry	Pig Manure to Anaerobic Digester or customer farmers	27.3 M3	22	1144
Totals				75	3900

Upon completion of this proposed development the volume of traffic will be less than current levels as set out in Tables 2 and 2a above.

## **6. DESCRIPTION OF IMPACTS AND MITIGATION MEASURES**

### **6.0 Employment and Human Well-being.**

In full production this pig unit and the proposed anaerobic digester on an adjacent site will employ 6 full time staff and a manager. These staff will reside locally with a significant positive economic impact on the area. The unit will also indirectly lead to another 40 jobs in pig meat processing, feed compounding and the service sectors.

The pig unit is designed to operate with the best technology under the supervision of a highly trained and experienced manager. The working conditions will meet the standards of the British Control of Substances Hazardous to Health Regulations (COSHH) which implement EC Directive 80/07/EEC.

### **6.1. STRUCTURES**

#### **6.1.1. Landscape and visual aspects**

The proposed unit is located in a rural area. The structures comprise long low A-roofed houses. The proposed three new pig houses will have a total floor area of about 4561.3 M2, for the accommodation of pigs. These pig houses will be 109.05, 54.83 and 64.68 long respectively, and 18, 18.3, and 18.3 meters wide respectively, and 2.64 meters at the eaves and 5.22 meters at the apex. The tallest structure on site

are the existing meal bins at 8. The proposed buildings consist of single storey; steel framed structures with PVC coated metal cladding externally to walls and sloping roof. Chimneys will be of grey or green PVC pipe.

### **Mitigation Measures**

#### **(a) External Finishes**

All new buildings and re-cladding to be in selected colour/colours to blend with the surrounding landscape as much as possible. It is proposed to discuss and agree with North Tipperary County Council a scheme prior to commencement.

#### **(b) Building Heights**

All new buildings to be designed to keep ridge heights to the lowest possible level. This is achieved by minimising roof slopes and ground floor to eave levels.

#### **(c) Landscaping**

It is proposed to provide selected landscaping in the form of specimen trees, shrubs and flowerbeds, particularly at the site entrance. The landscaping proposal is included as appendix No. 12 of the EIS submitted in support of this application provides for the provision of semi mature native trees.

### **6.1.2. PIG MANURE STORAGE, SURFACE AND GROUND WATER**

All pig manure on site will be stored in underground concrete tanks, and the proposed engineered storage basin, built to Dept of Agriculture specifications, from where it will be transferred fresh to the proposed anaerobic digester, and to customer farmers in the interm. All pig manure on site will be stored in covered storage tanks, constructed according to Dept. of Agriculture specifications.

A freeboard of 100mm has been allocated to all tanks under slats to contain gasses. All new storage tanks will be provided with independent leak detection systems, which will have independent inspection chambers. There will be no impact from these on surface or ground waters.

The pig manure will be diverted directly from the tanks under the pig houses to the covered storage tanks. All new structures will be provided with leak detection systems which will be visually inspected regularly, and samples analysed quarterly for COD/BOD. These visual inspections will be documented in a register on site which will be available to North Tipperary County Council and EPA officials for inspection at all reasonable times.

### **6.1.3. NOISE LEVELS**

Apart from the noise level at feeding time (10-15 minutes) and from delivery vehicles referred to in Section 5.2.5. the noise levels from the pigs at other times are insignificant.

Other noises arise from the operation of feed preparation plant and ventilating fans. The noise generated by these is inaudible outside the immediate vicinity of the buildings and adjoining yards.

Insulation levels in modern pig unit are high, normally 60mm extruded polystyrene in walls and 60mm extruded polystyrene in ceilings. This will greatly muffle noise levels from the interiors of the pig buildings.

#### **6.1.4. ODOURS AND EMISSIONS**

Odours and emissions from modern well-managed pig units incorporating best available technologies including anaerobic digestion, covering of areas used for animal movement, fresh removal of pig manure to separate covered storage, and low protein diets, are insignificant outside the confines of buildings and adjoining yards. Significant reductions of emissions from the application of digestate rather than pig manure will also be achieved. The Nett result of this proposed development is a marked reduction of existing emission levels of possibly 50%. This will benefit all stakeholders in the hinterland of this pig farm, and the customer farms utilising the digestate to fertilise their lands.

#### **6.1.5. ESTIMATED INCREASE IN TRAFFIC**

On completion of the development, there will be a reduction in traffic volumes over current levels. Full details of the current and proposed traffic volumes are discussed in Section 5.3.6.

#### **6.1.6. MORTALITY, TRANSPORT AND DISPOSAL OF CARCASSES**

Management practices on the unit will be actively focused on minimising pig mortality. Nevertheless, some will occur and the mortality under good management has been estimated in Section 3.4.2.

Carcasses will be temporarily stored in a covered sealed trailer skip for transport to a licensed rendering plant at regular intervals in the manner normal on such farms (See Section 3.4.2.)

#### **6.1.7. ACCIDENTAL SPILLAGES**

Pig manure/Digestate is the only material of concern, as feed and oil storage tanks on site will be locally bunded. Since tankers must be pressurised for delivery of the pig manure, the risk of any sizeable leakage or spillage is minimal. In the case of an accidental spillage occurring, the developer will notify North Tipperary County Council & the EPA and will take the necessary measures to clean up such a spillage. An Emergency Response Procedure has been put in place to deal with such a situation. This procedure is included in Appendix 13.



### **6.1.8. CONTROL OF RODENTS**

Staff members successfully carry out the control of rodents on the site. Woodville Pig Farms Ltd insures that this work is carried out professionally and that proper records are maintained. A copy of the format used to record this procedure is included in Appendix No. 21.

## **6.2. APPLICATION OF PIG MANURE/DIGESTATE**

### **6.2.1. Digestate application rates and Nutrient Balance**

Digestate/pig manure will be used by customer farmers to supply nutrient requirements to agricultural crops, in accordance with the requirements of the Nitrate Directives (S.I. No. 378 of 2006).

The use of digestate which is planned to replace the current practice of application of raw pig manure to lands to replace chemical fertilisers, will be much more user friendly for the customer farmers, for the following reasons;

- (i) The ratio of phosphorus to nitrogen is better from a crop nutrient requirement point of view, due to the separation of fibrous material with 70 – 80% of P.
- (ii) The digestate will provide more available nutrients for the farmer. The anaerobic digestive process transforms organic bound nutrients to a mineral form, which is readily available for crops, thereby providing a better product for the farmer.
- (iii) The odour emissions from the application of digestate instead of pig manure will be reduced by 80%, due to the gas extraction associated with the anaerobic digestive process, thereby reducing impacts on neighbours.

In relation to chemical loading, the application of the digestate entails the substitution of nutrients from chemical fertilisers by those from organic manure. There is no nett increase in the application of plant nutrients leading to accumulation, particularly of phosphorus and nitrogen. The Statutory Instrument S.I. 378 of 2006 (European Communities Good Agricultural Practice for Protection of Waters), is included in Appendix 20.

### **6.2.2. PIG MANURE USE AND THE QUALITY OF SURFACE AND GROUND WATERS**

Pig Manure can cause serious water pollution if discharged directly to groundwater or surface waters. Whether or not land application creates a risk to the aquatic environment is largely dependent on a number of natural physical characteristics. These include such factors as geology, soils, climate, hydrology and hydro-geology, and on more anthropogenic factors such as operational procedures and the proximity of other potentially polluting features such as farmyards, silage pits. Slurry pits and septic tanks.

The assessment of the likely impacts from the landspreading needs to consider all of the above factors in a holistic way.

### **6.2.2.1.Relevant Guidelines**

Over the past few years a number of working parties have produced guidelines on the environmental management of intensive agricultural developments.

These include: -

- The Geological Survey of Ireland guidelines for the assessment of the vulnerability of groundwater to various potentially polluting activities and proposed approaches to the risk assessment of groundwater pollution (Daly, 1994)
- The BATNEEC guidance note for the Pig Production Sector, published by the EPA
- Guidance notes prepared as the result of the work of a Technical Sub-Committee under the aegis of the Management committee of the Regional Water Laboratory, which looked at the land-spreading of animal wastes and the scoping of Environmental Impact Statements related to piggery developments (Moore 1995)
- Guidelines for good farm practice detailed in the Rural Environment Protection Scheme documentation (1992 & 1999) also include a section on landspreading.
- Guidance notes and oral communications with EPA representatives relating to the Integrated Pollution Control Licensing Application procedures (1997)

Reference was made to all these sets of guidelines in the preparation of this report. The proposed development of the anaerobic digester will greatly reduce the potential impacts on surface and groundwater.

### **6.2.2.2.Discussion of Likely Significant Impacts**

#### **Groundwater**

Vulnerability is a term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater may be contaminated by human activities. The travel time, attenuation capacity of the soils and the nature of the contaminants are important elements in determining the vulnerability of groundwater. The Geological Survey of Ireland has prepared guidelines, which help in categorising the vulnerability. Applying these guidelines and using the properties of the subsoils and bedrock, vulnerability ratings can be determined for the proposed landspread areas.

There has been no historical contamination of groundwater at this site. This proposed development will further reduce the potential impacts at this site, for the following reasons

- (i) The removal of raw pig manure on a regular basis from the existing storage tanks and channels under the houses will reduce the loading pressure on these tanks.
- (ii) A leak detection system will be provided under all new structures and facilities in this proposed development.
- (iii) The application of digestate from the proposed facility, which will replace the current practice of application of raw pig manure, will greatly reduce the risk of nitrate-nitrogen contamination of groundwater, due to the alteration of nitrogen which occurs in the process, rendering it more suitable for plant uptake.

## **Surface Water**

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Where subsoils are of low permeability there is an increased risk to surface water, resulting from reduced infiltration to the ground and increased risk of surface run-off. For this reason, it is important that good farm practices are adhered to in relation to surface water protection. Of particular importance are areas sloping towards watercourses that may be prone to surface run-off.

Pig manure will be uniformly spread on dry land and in the growing season February through October. Adherence to the Code of Good Practice for Landspreading (Appendix 11) will forestall surface run-off, which is the most likely route for phosphorus enrichment of surface waters. Moreover, under the proposed spreading schedules, accumulation of phosphorus in the soil will not take place. Applying the pig manure during the growing season will ensure that nitrate-nitrogen (which is leachable) will be fully taken up by the grass roots and that leaching potential is minimal because of low recharge.

The EPA Discussion document (**Anaerobic Digestion: Benefits for Waste Management, Agriculture, Energy, and the Environment Discussion Document 2005**), notes that *"in addition to the benefits of energy recovery and displacement of greenhouse gas emissions from fossil fuels, anaerobic digestion produces several beneficial outcomes"*. Of the beneficial outcomes listed the following are considered relevant to water quality;

- (i) Anaerobic Digestion reduces the organic pollution potential of animal slurries. Tests of animal slurries from pilot and farm scale digesters show a reduction of 55% of BOD for cattle slurry, 75% for pig slurry, and 80% for poultry slurries.
- (ii) An appreciable portion of the geology of the country is of a karst limestone composition which makes groundwater particularly vulnerable to pollution. The lower pollution potential of AD processed slurries will provide additional protection to groundwater.
- (iii) AD increases the proportion of nutrients immediately available for uptake by plants, due to the mineralization of nutrients during the digestion process.

### **6.2.3. AIR QUALITY AND PIG MANURE USE**

The proposed customer lands whereupon it is proposed to use pig manure digestate are entirely located in a farming area where the air quality is determined by odours emitted from manure, animals and foodstuffs (e.g. Silage). Nevertheless, every effort is being made to reduce offensive odours to insignificant levels. All manure will be spread from tankers fitted with a low trajectory splash plate or band spreader to minimise aerosol formation and dispersion. Customer farmers will be advised not to apply pig manure digestate nearer than 100 meters of any dwelling house save with the express approval of the inhabitants in writing. No spreading of pig manure will be permitted in windy weather close by dwelling houses or main roads. The proposed development of the anaerobic digester on an adjacent site and the application of digestate rather than pig manure will significantly reduce impacts on air quality. The nett result of this proposed development will be a reduction of current emission levels of at least 50%. This will benefit all stakeholders in the hinterland of the site and associated customer farms.

### **6.2.4. MANAGEMENT OF CO-PRODUCT USE**

The area available for use of pig manure/digestate is much greater than that required. Pig manure/Digestate will be applied at the rates provided for in the Nitrate Directive Regulations (S.I. no. 378 of 2006). A delivery register will be maintained on site showing the date, amount of pig manure digestate delivered the owner and farm code of the land and the volume of N and P delivered. This register will be available for inspection by North Tipperary County Council, and EPA official's at all reasonable times. A copy of this register is included in Appendix 10.

### **6.2.5. MITIGATION MEASURES**

#### **6.2.5.1. REDUCTION OF ODOUR EMISSIONS**

This issue is addressed in Sections 3.4.3 and 6.2.3. In addition the following measures will be taken to reduce odour from the development.

- (a)** Fans and chimneys in houses will be so that foul air is dissipated high into the atmosphere where it will be mixed with fresher air thus reducing odours in the locality.
- (b)** Strict hygiene and cleanliness will be observed at and around the unit.
- (c)** The skip for collecting dead animals will be covered at all times. Carcasses will be removed off site by Beechfield Products Ltd, on a regular basis, and delivered to a licensed rendering plant.
- (d)** It is intended to further develop the use of low protein diets on site.
- (e)** All passageways will be covered.
- (f)** The existing open pig manure storage tanks will be replaced by an engineered covered storage basin
- (g)** All pig manure will be treated by the proposed anaerobic digestion facility on an adjacent site.

### **6.2.5.2.PERIODS AND RATES OF USE OF PIG MANURE/DIGESTATE**

This issue is regulated by the Nitrate Directive Regulations (S.I. No. 378 of 2006), which provides for application of pig manure digestate in this area between 15 January to 15 October, in accordance with a fertiliser plan. Parknageragh Pig Breeders Co Ltd is committed to ensuring that the use of pig manure/digestate from this facility, is carried out in accordance with these regulations, and will advise all customer farmers to comply.

### **6.2.5.3.REDUCTION OF RISK OF DISEASE SPREAD**

The economic viability of a pig production unit at going rates depends primarily on feed conversion ratio and low mortality. High standards of hygiene will ensure that disease is controlled and contained. Access to the unit is strictly restricted, to control the spread of disease to the pig herd. The procedures for dealing with dead animals as set down in Section 6.1.6. are standard for the industry.

### **6.2.5.4.DE-COMMISSIONING/LIFE SPAN OF DEVELOPMENT**

All pig units require a major capital investment every 10-20 years to keep them efficient and pleasant places to work. So long as this investment is made there is no reason that a unit of this type could not operate for up to 40 years. However, if for economic reasons or technical reasons this does not occur decommissioning will take place. All pig manure and organic matter will be thoroughly removed from the site. All equipment and materials of value will be salvaged. Unused feed, medication, and fuel will be returned to suppliers. It is then proposed that the unit be left standing after making it safe and secure. It is highly unlikely that this scenario would ever develop due to the high initial capital investment in the unit.

### **6.2.5.5. DEPOPULATION**

Depopulation of a unit occurs when a disease such as atrophic rhinitis or haemophilus pneumonia becomes so rampant on a unit that pig production becomes uneconomic. In this event, services cease and pigs are sold so that within 6 months the unit is empty of stock. The unit is left idle for 6 weeks, thoroughly washed and disinfected. After this 6 week period repopulation commences.

Destocking of a unit or complete slaughter of stock on a unit because of a notifiable disease has not happened in Ireland for more than 40 years. In the unlikely event of such a disease outbreak, the Department of Agriculture takes total control. In this event Woodville Pig Farms Ltd have an agreement with Beechfield Products Ltd, to remove all carcasses from the site in sealed containers, and delivery of same to a licensed rendering plant (See Appendix 7).

**6.2.5.6 REDUCTION OF RISK OF POLLUTION TO SURFACE AND  
GROUND WATER  
PART 4 of the Nitrate Directive States**

**PREVENTION OF WATER POLLUTION FROM FERTILISERS AND  
CERTAIN ACTIVITIES**

Organic fertiliser or soiled water shall not be applied to land within –

- (a) subject to sub-article (5), 200m of the abstraction point of any surface watercourse, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 100m<sup>3</sup> or more of water per day or serving 500 or more persons,
- (b) subject to sub-article (5), 100m of the abstraction point (other than an abstraction point specified at paragraph (a)) of any surface watercourse, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 10m<sup>3</sup> or more of water per day or serving 50 or more persons,
- (c) subject to sub-article (5), 25m of any borehole, spring or well used for the abstraction of water for human consumption other than a borehole, spring or well specified at paragraph (a) or (b),
- (d) 20m of a lake shoreline,
- (e) 15m of exposed cavernous or karstified limestone features (such as swallow-holes and collapse features), or
- (f) subject to sub-articles (8) and (9), 5m of a surface watercourse (other than a lake or a surface watercourse specified at paragraph (a) or (b)).

It is proposed that on-site storage capacity for pig manure following this development will be sufficient for about 36 weeks on site, which is well in excess of the 6 months storage capacity generally required for pig manure.

Guidelines on the optimum times for spreading are also available. Under S.I. 378 of 2006 for this area these are 15<sup>th</sup> January to 15<sup>th</sup> October, and the advice suggests that the application of nutrients should coincide with the periods of plant growth, so that the nutrients within the pig manure will be utilised by the growing crop. Application of natural fertilisers (i.e.; pig manure) should be avoided when the soil conditions

prevent infiltration, such as wet or waterlogged soil, frozen or snow covered soils and on land sloping steeply towards watercourses. Unsuitable climatic conditions include when heavy rain is forecast within 48 hours.

In this proposal for the use of Pig Manure/Digestate

- Spreading will not be undertaken within 10m of any watercourse and the cordon sanitaire is increased in some instances where the slope towards the watercourse was deemed excessive.
- Spreading will not be undertaken within 50m of a domestic supply well.
- Spreading will be done in a safe manner in strict accordance with the best available weather forecasts.
- The proposed spreading rates are considered low and this also help to mitigate any potential impacts.

### **6.3. GENERAL**

#### **6.3.1. FLORA AND FAUNA OF THE LANDS WHEREUPON IT IS PROPOSED TO USE PIG MANURE, AND THE SITE**

Dixon.Brosnan Environmental Consultants were engaged to prepare a report in respect of the Impacts of the proposed development on the Study area. The site is not in or near any NHA, SAC or SPA areas. The site of the proposed development is currently a farmyard. There is no special or natural flora or fauna associated with this. Structures and paved areas will cover a significant fraction of the site and the proposed landscaping will cover and so influence the flora and fauna in significant fraction of the remainder of the site. The changes will affect such a small area that any impact will be close to zero or neutral with the local area. The site is surrounded by farmland and a public road. It is considered that this proposed development will not impact in any way on the flora or fauna in any of the surrounding area. This report is included in full in appendix No 4.

#### **6.3.2. ARCHAEOLOGY AND CULTURAL HERITAGE**

There are no known archaeological sites and no reason to suspect the presence of such sites within or near the site of the proposed development. This issue is addressed in Appendix No 8.

#### **6.3.3. TRAFFIC**

This issue is discussed in Section 5.2.5 above. The traffic volume servicing this facility upon completion will be less than current traffic levels, as set out in Tables 2 and 2a of this E.I.S. The road surface and foundation is sound and is unlikely to deteriorate with the proposed traffic volumes.

#### **6.3.4. CLIMATOLOGY**

The existing and proposed development has not had and will not have any effect on the climate in the area. Climatology report of the area from Met Eireann is included in Appendix No 22.

#### **6.3.5. INTERACTIONS**

When interactions between humans, flora, fauna, soil, water, air, climate and landscape are examined, no significant negative impacts are envisaged.

#### **6.3.6. MATERIAL ASSETS**

There is no reason to suggest that material assets will be affected or devalued in the locality due to the proposed development. The proposed development will operate in as sensitive manner as possible and as such no negative impacts on material assets are envisaged. In fact this development when complete, will improve upon the existing situation.

### **7. MONITORING**

#### **7.1. DRAINAGE FROM THE SITE**

Uncontaminated roof water from the pig unit is collected via the proposed stormwater collection system as identified on site layout plan included in Appendix 2, to a monitoring point to the south western side of the unit, identified as SW1 on the site layout plan. A sample will be taken from these points quarterly and analysed for COD at an independent laboratory. All soiled water from the site is diverted to the pig manure storage tanks. A visual inspection of these monitoring points will be made and recorded weekly. A copy of the stormwater visual inspection register is included in Appendix 6.

#### **7.2. GROUNDWATER AND SURFACE WATER**

The well supplying water to the site will be analysed annually and results will be maintained for inspection by North Tipperary County Council, and EPA officials, at all reasonable times. The location of this well is marked on the site location maps (See Appendix 9).

#### **7.3. PIG MANURE/DIGESTATE USE**

A register of all pig manure delivered from the facility will be kept on site. This will record the date, quantity, destination, N and P content of pig manure supplied to customer farmers. This will be available for inspection by North Tipperary County Council, and EPA official's at all reasonable times.

#### **7.4. PIG MANURE/DIGESTATE STORAGE**



The pig manure/Digestate storage capacity on site will be monitored and recorded monthly, and a record of this register will be kept on site for inspection by North Tipperary County Council and EPA officials at any reasonable time.

#### 7.5. OTHER WASTES

A register of all other wastes (i.e. carcasses, veterinary waste, fluorescent tubes, and refuse) will be maintained on site, recording the date, volume and destination. A copy of these registers will be available on site for inspection by North Tipperary County Council, and the EPA at any reasonable time.

- Carcass Register. (see Appendix 18)
- Veterinary Waste Register (see Appendix 19)
- Refuse Register (see Appendix 14)
- Fluorescent Tubes Register (see Appendix 15)

#### 8.0 Measures envisaged in order to avoid, reduce and if possible, Remedy significant adverse effects.

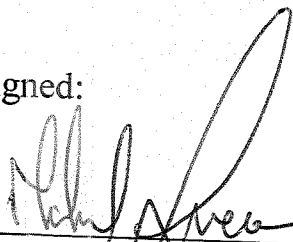
The measures considered necessary are:

- (i) Provision of sufficient and safe access to the site and measures to avoid excessive soiling of the public road during construction on the site.
- (ii) A secure fence around the site and effective landscaping, comprising hedging, trees, and landscaped earth embankments where necessary, to screen the installation from obtrusive view from the public road and to blend it into the rural landscape.
- (iii) Provision of a storm water drainage system to properly collect and discharge to field drainage all clean rainwater from roofs and clean surfaces via monitoring point SW1 as identified in Site Layout Plan, included in Appendix 2.
- (iv) Provision of soiled water drains to properly collect any effluent or soiled water and diverts it to the nearest manure tank.
- (v) The collection and the removal from the site of all pig manure digestate to be used by local farmers and fertiliser on their farmlands.
- (vi) The collection and the removal from the site of hazardous waste materials (spent fluorescent lighting tubes, empty aerosol containers and veterinary waste) generated on the site. Such wastes removed from the site are to be removed only to sites authorised or agreed as appropriate for the disposal or recovery of the waste concerned.
- (vii) The collection and the removal from the site of all dead animals and all animal tissues. Collection is currently undertaken by Beechfield Products Ltd who are an authorised waste collector, and transport the carcasses for disposal or recovery at an authorised rendering plant (Premier Proteins).
- (viii) Ensure connection of animal tissue from the site is in appropriate watertight and covered containers, and timely removal so as to ensure minimal

- generation or release of odours either at the site, or during transit to the disposal/recovery destination.
- (ix) Monitor and maintain records of all monitoring of storm water discharged from the site.
  - (x) Record and maintain required records of all consignments of waste despatched from the site.

Implementation of the above will ensure that significant effects on the environment will be avoided and the risk of incidents of environmental significance will be near zero.

Signed:



Michael Sweeney

Director

Nutrient Recovery to Generate Electricity Ltd (NRGE)

MOORESFORT

LATTIN

CO TIPERARY

Tel: 062-55385

Fax: 062-55483

Email: [NRGE@iol.ie](mailto:NRGE@iol.ie)

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# APPENDIX NO. 1

# LOCATION MAPS

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Surveyed 1838-1840  
 Revised 1901-1955  
 Levelled 1955

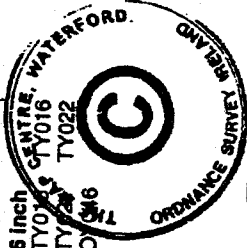
# Record PLACE Map

197895  
 18802

JIM CENTRE PT. COORDS  
 596618.681932

DESCRIPTION  
 Map Produced by  
**M & J. Mc Entry**  
 100, Abbey, Waterford, Co. Waterford,  
 Tel: 051 874 144 Fax: 051 874 144  
 Ordnance Survey Licence No. AR 0068906

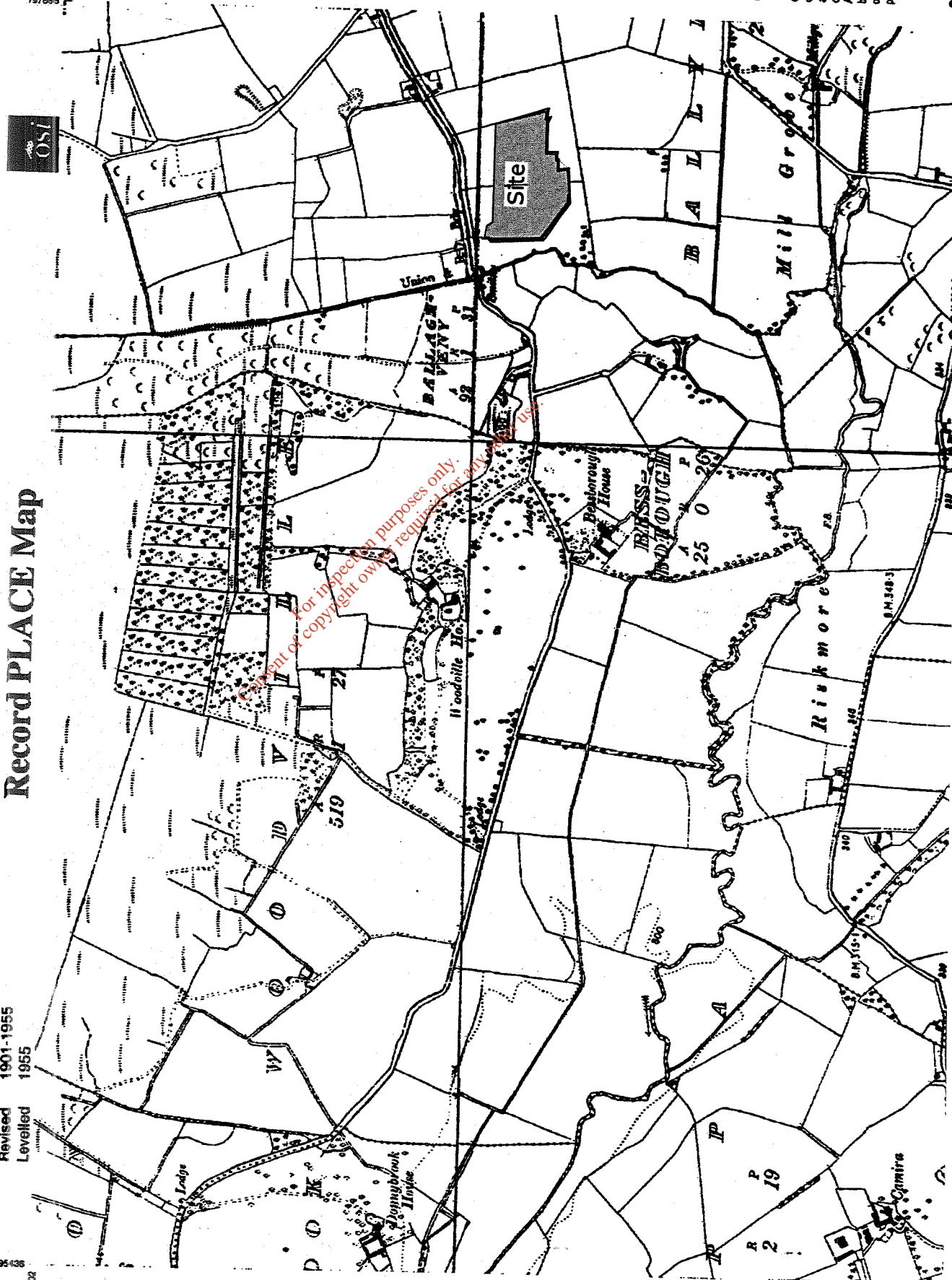
MAP SHEETS



Produced by The Map Centre,  
 John Ribbons Square, Waterford City  
 On behalf of Ordnance Survey Ireland,  
 Phoenix Park, Dublin 8.

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Surveyed 2000-2001  
Revised 2000-2005  
Levelled

# Rural PLACE Map



ITM CENTRE PT COORDS  
598131,681824

DESCRIPTION

MAP SHEETS

Digital Map  
4222

1:2500  
4222-D

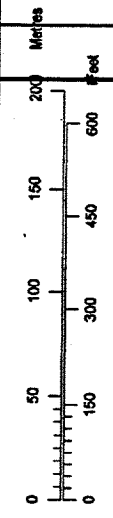
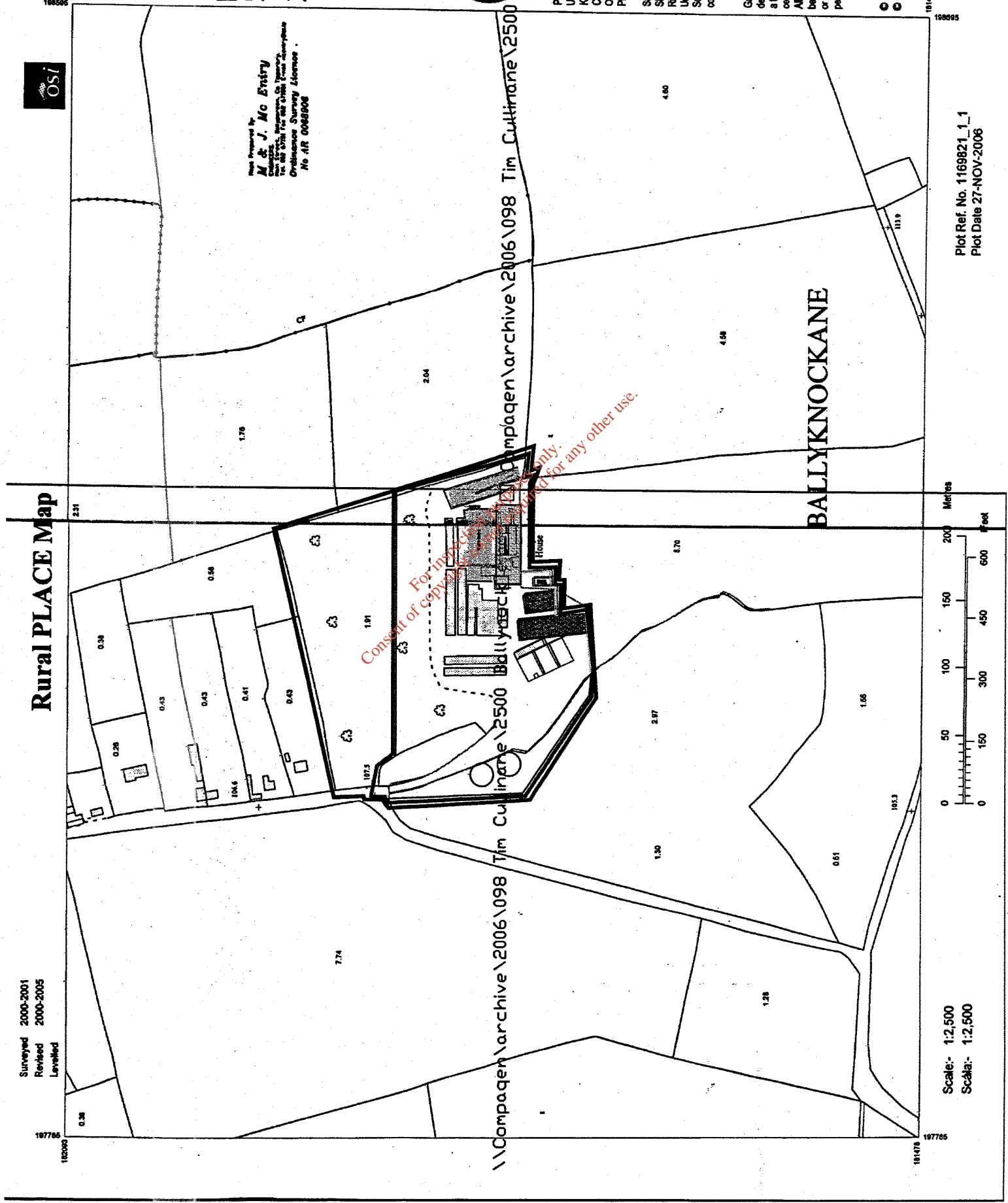


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Phoenix Park, Dublin 8.

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cead i scríbhinn roimh ré ó úinéir an chloícheirt.  
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Scale:- 1:2,500  
Scale:- 1:2,500

Plot Ref. No. 1169821\_1\_1  
Plot Date 27-NOV-2006

Map Approved by  
**M & J. Mc Eniry**  
Contractor  
The M & J. Mc Eniry Team  
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WOODVILLE PIG FARMS LTD

APPENDIX NO. 2

PLANS & DRAWINGS  
& STRUCTURES TABLE  
OF  
BALLYKNOCKANE PIG FARM

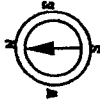
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\*Covered Structures to Stormwater System  
 # Paved Areas to Stormwater System only  
 # Paved Areas to Foul/Stormwater System  
 Unpaved Areas

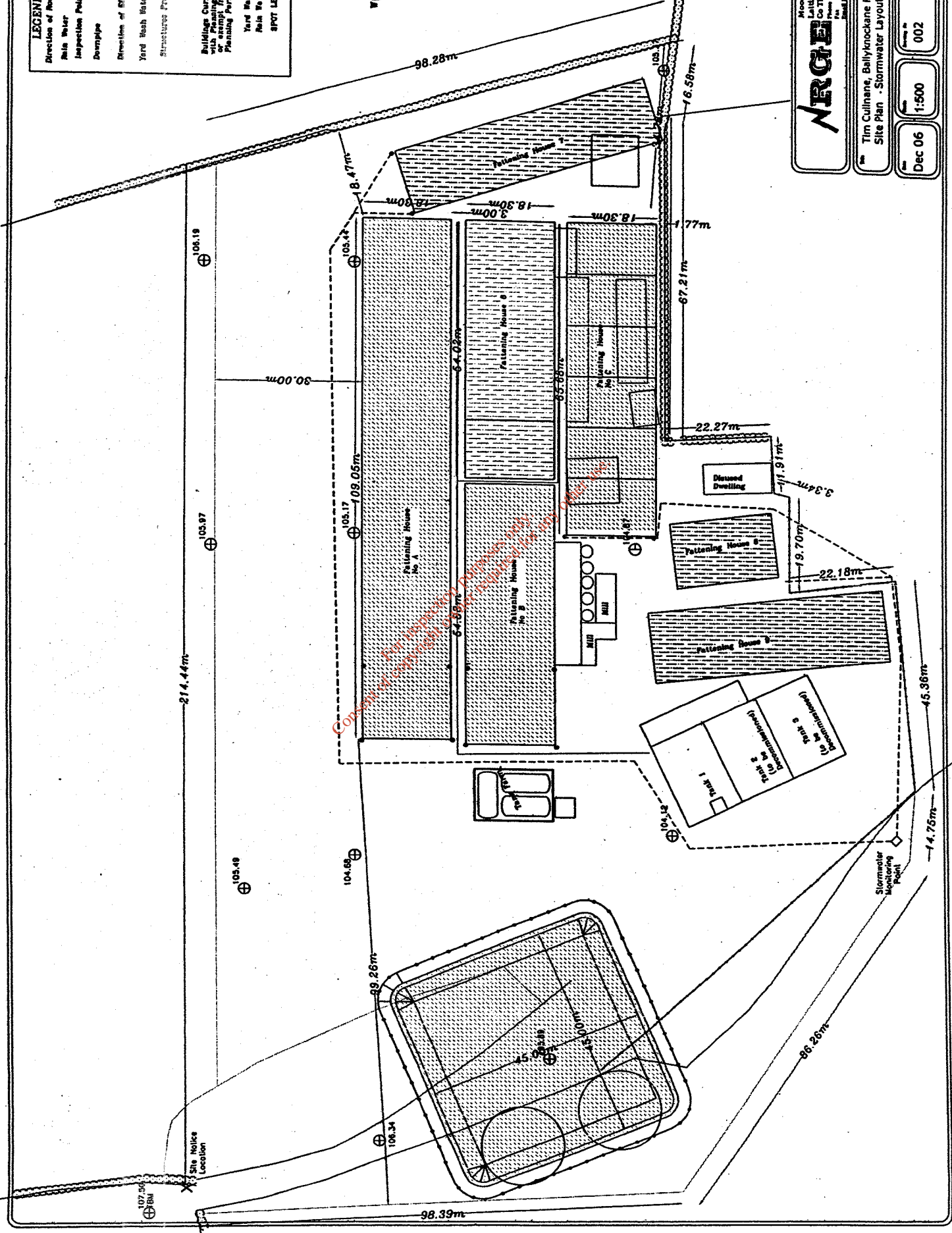
TITLE	STATUS	CLASS	STRU LGT (M)	CTURE WTH (M)	AREA SQ MTS	TOTAL AREA BIF	TANK WIDTH	TANK LENGTH	TANK DEPTH	CAPACITY CUBIC MTS	TOTAL CAPACITY	EFFECTIVE WTH 200' D.	TOTAL CAPACITY
Fattening House 6	Existing	6	54.02	18.3	988.6	988.566	18.3	54.0	0.9	889.7	889.7	692.0	692.0
Fattening House 7	Existing	6	37	13.5	392.4	1380.92	13.5	37.0	1.5	749.3	1639.0	649.4	1341.3
Ditto	Existing	6	16	8.0	100.5	1481.5	8.0	16.0	1.5	192.0	1831.0	166.4	1607.7
Fattening House 8	Existing	6	21.5	18.3	309.1	1689.98	18.3	43.0	0.9	708.2	2539.2	550.8	2058.6
Fattening House 9	Existing	6	49.25	15.0	1600.0	3289.98	1.3	98.5	0.9	110.8	2650.0	86.2	2144.8
Manure tank 1	Existing	7	18.75	12.0	176.7	176.7	12.0	18.8	2.1	579.6	3229.5	360.0	2504.8
Manure tank 2	Existing	7	18.75	12.0	176.7	353.5	12.0	18.8	2.1	472.5	8948.2	360.0	2864.8
Manure tank 3	Existing	7	18.75	12.0	176.7	530.2	12.0	18.8	2.1	472.5	8948.2	360.0	3224.8
Mill Building 1	Existing	7	14	4.0	8.5	8.5							
Mill Building	Existing	7	9	3.0	8.5	17.1							
Meal Bin 1	Existing	8	2.5	2.5	4.9	4.9							
Meal Bin 2	Existing	8	2.5	2.5	4.9	9.8							
Meal Bin 3	Existing	9	2.5	2.5	4.9	14.7							
Meal Bin 4	Existing	9	2.5	2.5	4.9	19.6							
TANK FARM	Existing	9	16.5	10.1	80.1289	99.8							
Fattening House A	Proposed	6	109.05	18	1962.9	1962.9	18.0	109.1	0.6	5601.1	14549.2	785.2	4009.9
Fattening House A Channel	Proposed	7	109.05	1.8	196.3	2159.2	1.8	109.1	1.2	11202.2	25751.4	137.4	4147.3
Fattening House B	Proposed	6	54.83	18.3	1003.4	3162.6	18.3	54.8	0.6	1416.0	15965.2	401.4	4411.3
Fattening House B Channel	Proposed	7	54.83	1.8	98.7	3261.3	1.8	54.8	1.2	2832.0	28583.4	69.1	4216.4
Fattening House C	Proposed	6	64.68	18.3	1183.6	4444.9	18.3	64.7	0.6	1970.4	30553.8	473.5	4689.9
Fattening House C Channel	Proposed	7	64.68	1.8	116.4	4561.3	1.8	64.7	1.2	3940.9	32524.2	81.5	4297.9
Manure Basin	Proposed	7	45	45	2025.0	2025.0	41	41	4	5278.3	37802.6	6387.8	10685.7

**LEGEND**

- Direction of Stormwater Flow
- Rain Water
- Inspection Point
- Downpipe
- Direction of Effluent Flow
- Yard Wash Water/Slurry
- Structure Proposed
- Buildings Currently with Planning Permission or exempt from Planning Permission
- Yard Washing Gates
- Rain Water Gullies
- SPOT LEVEL 93.94

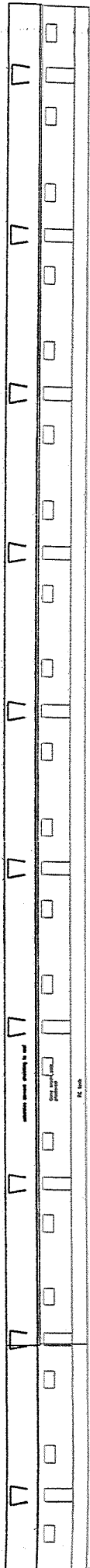


**MRC**  
 MRC Environmental  
 10000  
 002  
 1:500  
 Dec 06  
 Tim Cullinane, Ballyknockane Pig Farm  
 Site Plan - Stormwater Layout

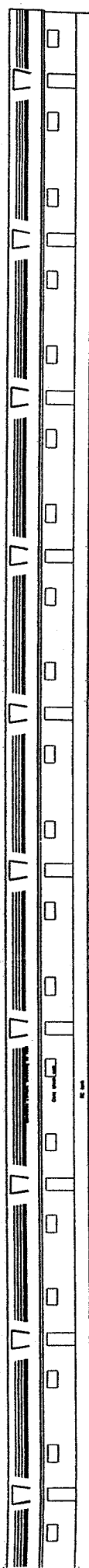






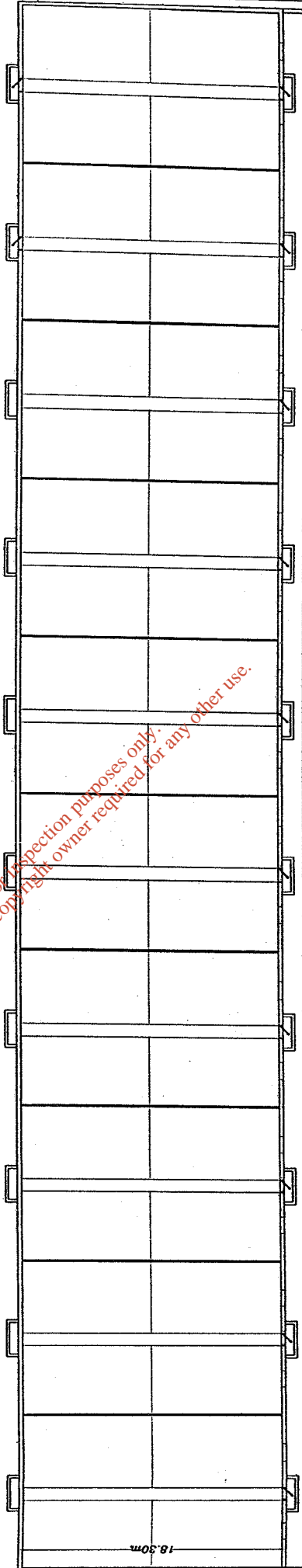


SIDE ELEVATION.



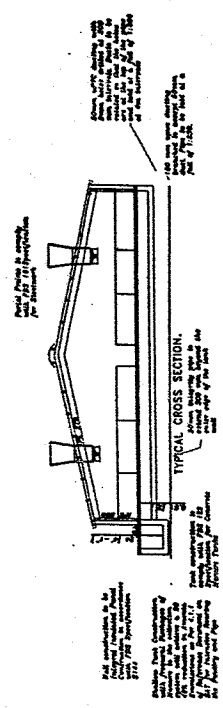
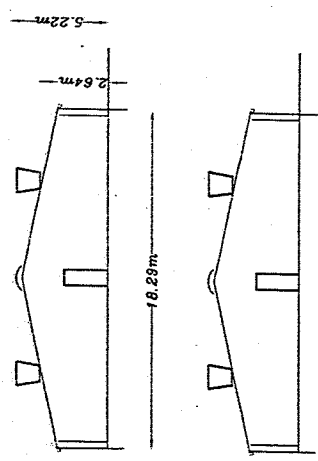
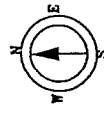
SIDE ELEVATION.

109.05m



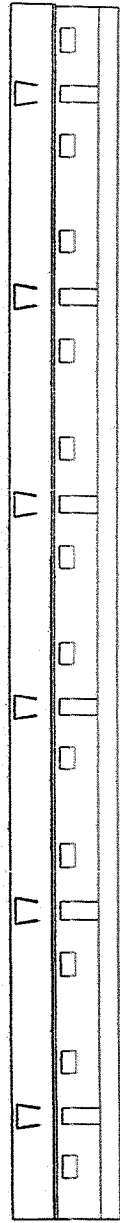
18.30m

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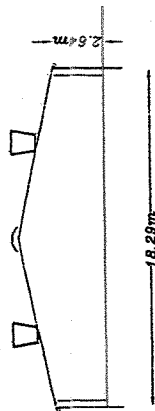


		Manufacturer <b>NERCIE</b> Manufacturer Co. Tipperary Phone: 052 26220 Fax: 052 26221 Email: nercie@eircom.net	
		Drawing No: 005	
Title: Patterling House A		Scale: 1:200	
Date: Dec 08		Drawn By:	





0.22m



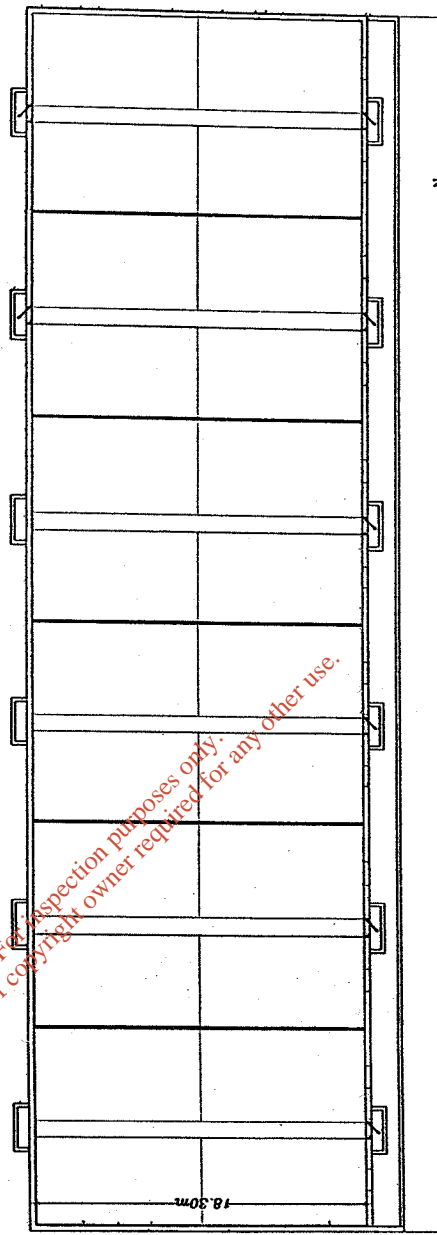
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2.64m

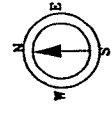


SIDE ELEVATION.

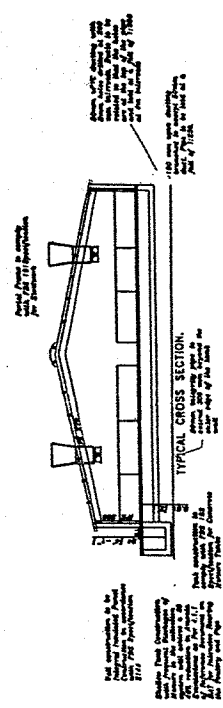
65.68m



18.30m



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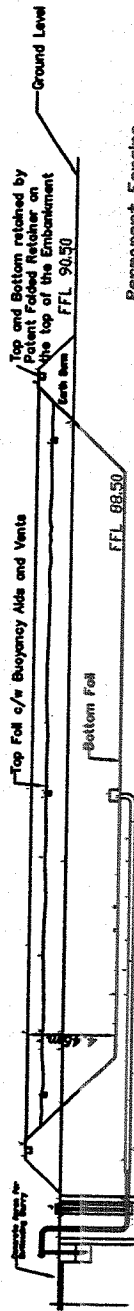
Project: Fattening House C

Date: Dec 06

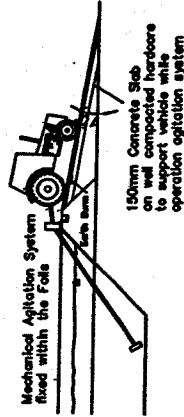
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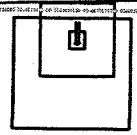
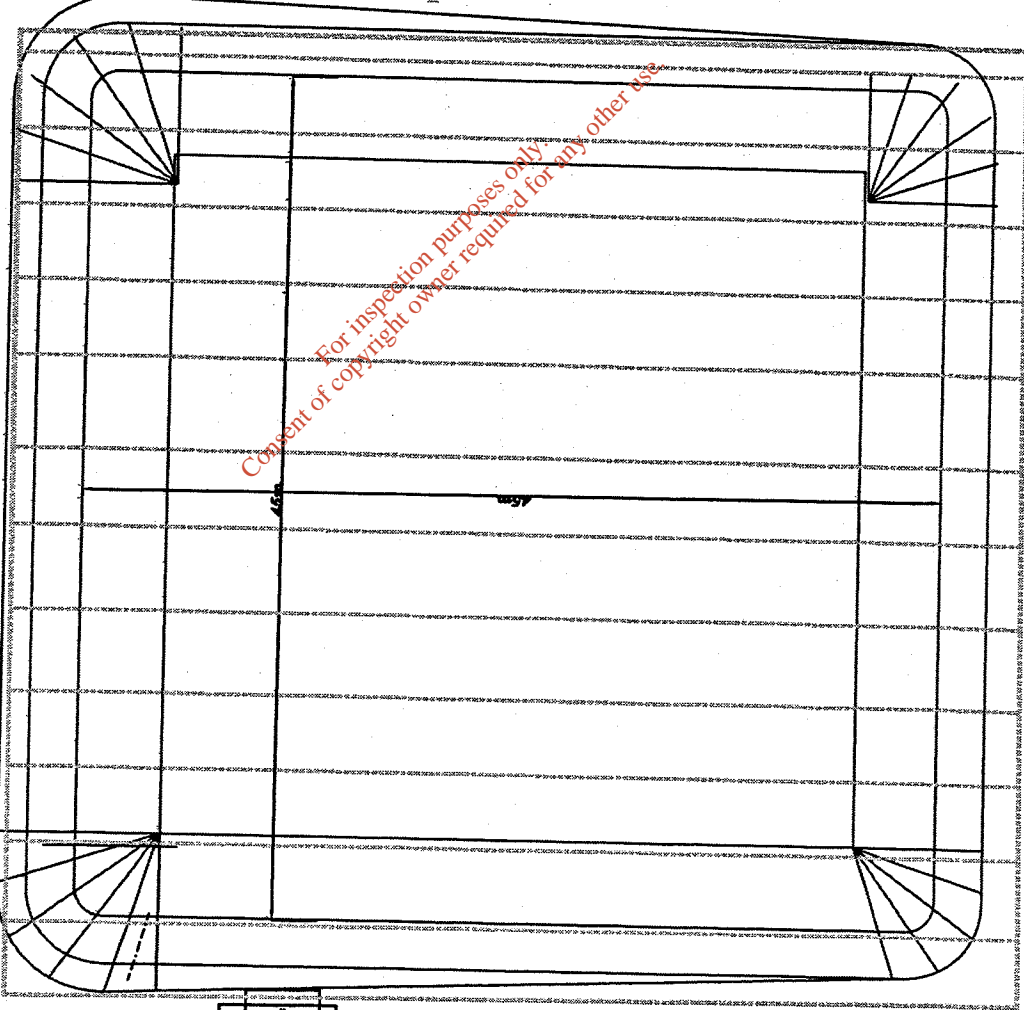
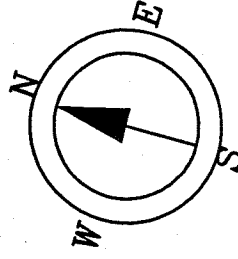
Revision No:



Permanent Fencing around the perimeter of basin



Leak Detection Pipe with 150mm Perforated Pipe around the perimeter of the tank lines of 100mm Perforated Pipe at 4m intervals all with a gradient of 1:240.



**NERGE**  
 Manufacture  
 Leak On Tightening  
 On Tightening  
 On Tightening  
 On Tightening

**Digestate Basin**

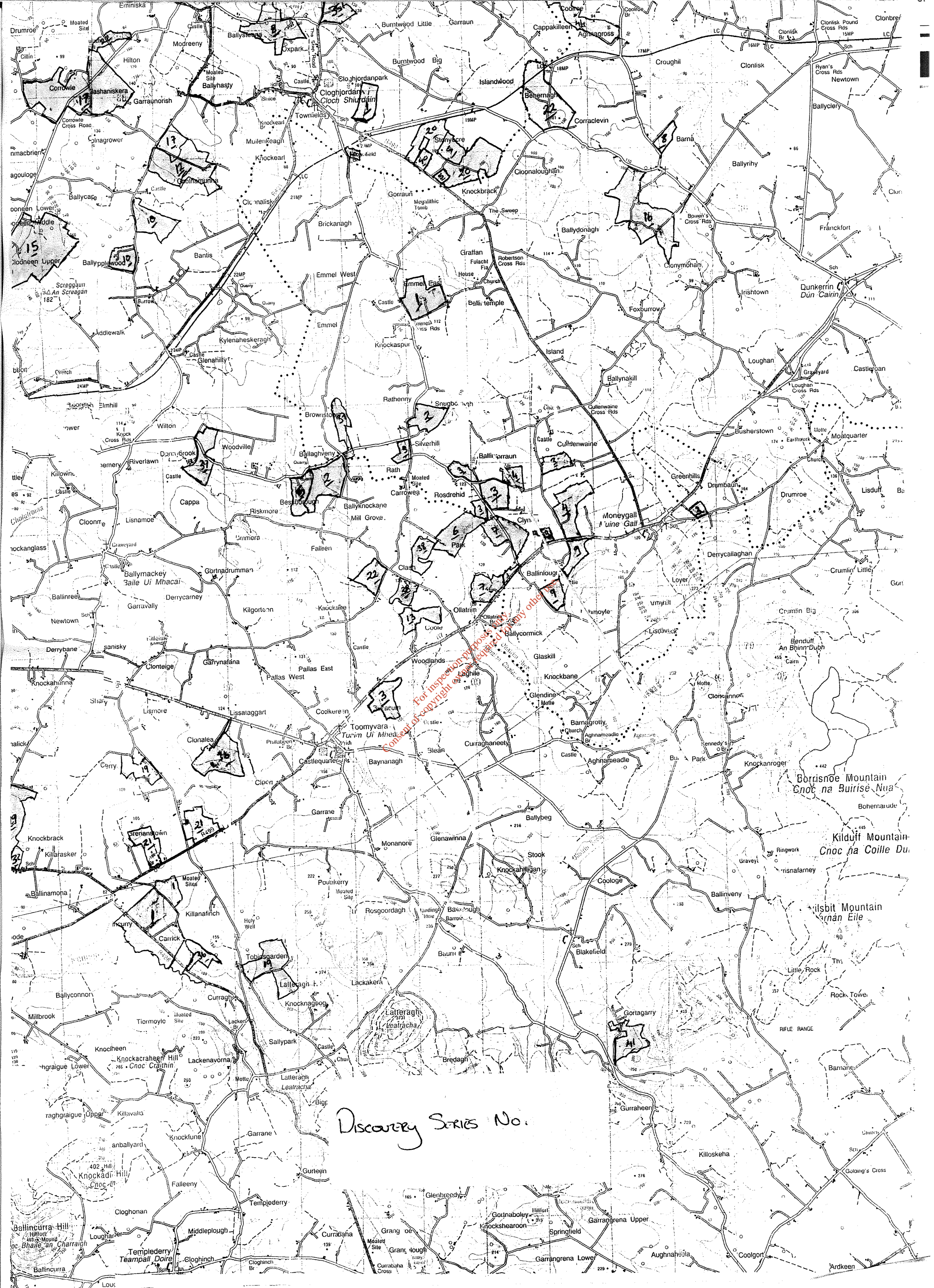
Aug 2000  
 1/300  
 006

WOODVILLE PIG FARMS LTD

APPENDIX NO. 3

COMPOSITE MAP  
OF CUSTOMER FARMS

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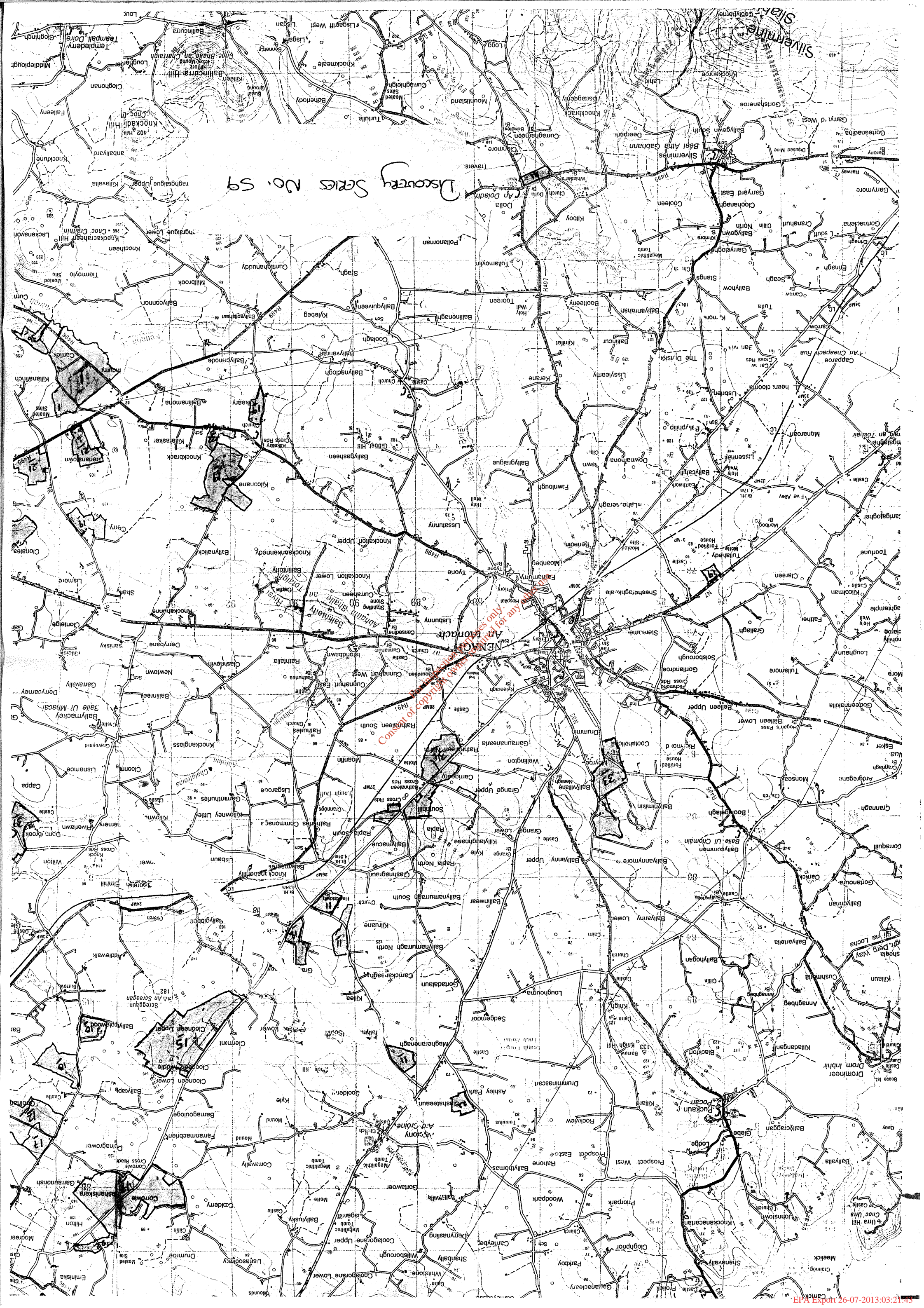


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WOODVILLE PIG FARMS LTD

# APPENDIX NO. 4

## DIXON.BROSANAN REPORT

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SEPTEMBER 2007

EIS

NRGE LTD

**Dixon.Brosnan**  
environmental  
consultants

project title	Ecological survey at the site of a pig unit at Ballaghveny, Ballymackey, Nenagh, Co. Tipperary
client	NRGE Ltd
client ref.	-
our ref.	07067
revision	1 <sup>st</sup> draft
date	16 <sup>th</sup> September, 2007
approved by	Carl Dixon B.Sc. Applied Ecology
<b>Dixon.Brosnan Environmental Consultants</b> The Cedars, Bridewood, Ovens, Co. Cork Tel: +353 (0)21 4875389 Fax: +353 (0)21 4377947 Carl Dixon: 086 8511437 Damian Brosnan: 086 8131195 email: carl@dixonbrosnan.com	

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## 1. Introduction

Dixon.Brosnan Environmental Consultants were asked to carry out an ecological assessment of the site of a fattening pig unit at Ballaghveny, Ballymackey, Nenagh, Co. Tipperary. This report describes and evaluates the habitats with their representative flora and fauna in order to describe and assess the impacts that would result from the development. This report follows the structure and protocols detailed in *Advice notes on current practice in the preparation of Environmental Impact Statements (EPA 2003)* and *Guidelines on the information to be contained in Environmental Impact Statements (EPA 2002)*.

## 2. Methodology

One site visit was conducted in September 2007. All habitats were classified to level 3 of the classification scheme outlined in *A Guide to Habitats in Ireland (Fossitt 2000)*. It should be noted that some of the habitats are transitional and where this occurs they are placed in the category they most resemble

## 3. Receiving environment

### 3.1 Surrounding landscape

The study area consists of an existing pig unit which is accessed via a track from a minor road. The unit consists of a mixture of buildings, access tracks and open yards. There is a large planted shelter belt to the north of the site and native hedgerow to the east and south. One old disused dwelling remains on the site. There are several mature trees on a western boundary along which there is also a drain. The area is characterised by intensive grassland with smaller amounts of tillage.

No rare species of flora were noted and the presence of rare species is considered unlikely. None of the floral species recorded during the surveys in any of the habitat types is listed in The Irish Red Data Book (Curtis and McGough, 1988) or is protected by Flora (Protection) Order (S.I. No. 272 of 1987) under the Wildlife Act, 1976 and 2000. Similarly none of the habitats noted within the site boundary are listed under Annex I of the Habitats Directive (92/43/EEC). There are no environmental designations pertaining to the area surveyed nor is this area likely to be designated in the future. The site does not form part of any Natural Heritage Area (NHA), Special Protection Area (cSPA), Special Area of Conservation (cSAC), Statutory Nature Reserve or National Park.

### 3.2 Habitat types

The survey area was divided into the following habitat types:

- *Recolonising bare ground ED3/Spoil and bare ground ED2/ Buildings and artificial surfaces BL3*
- *Dry meadows and grassy verges GS2*
- *Treelines WL2/ Hedgerows WL1*
- *Drainage ditch FW4*
- *Broadleaved woodland WD1*

Formatted: Bullets and Numbering

- *Recolonising bare ground ED3/Spoil and bare ground ED2/ Buildings and artificial surfaces BL3*

Most of the site consists of these habitats which are of minimal ecological value. Plants are largely absent from much of the site with common weed species in disused corners and access tracks.

- *Dry meadow and grassy verges GS2*

On more fertile ground such as along access tracks poor examples of this habitat type have developed. Although some taller grasses such as false oat grass and cocksfoot are present the high fertility leads to a dominance by nettle.

- *Treelines WL2/ Hedgerows WL1*

A small section of native hedgerow occurs along the eastern and part of the southern boundary. It is of moderate quality and includes typical hedgerow species such as hawthorn and elder. There is a line of mature trees (lime and beech) along the western boundary.

- *Depositing river FW2*

A stream/drain runs along the western boundary. Flows are minimal and it does not have any fisheries potential although it is noted that it does eventually discharge to the Nenagh River. Clean surface water from the site discharges to the drain and no evidence of nutrient enrichment was noted.

- *Broadleaved woodland WD1*

A broad band of woodland has been planted along the northern boundary where it forms an effective screen. This planted woodland is dominated by sycamore and is heavily shaded. This has suppressed ground flora which is largely absent.

### 3.3 Birds

The habitats on site are highly modified and not of particular value for birds. However some common countryside species including pigeon, rook, jackdaw, dunnock and swallow were noted. These birds are common in the Irish countryside.

### 3.4 Mammals

No signs of otters or badgers were noted and it is unlikely that the site is of significant value for either species. Rabbits do occur within the planted woodland. Some rodent species are ubiquitous in the Irish countryside and both brown rat and field mouse are almost certainly present within hedges and scrub. Bats may also occur in this area. Other species, which may be present on occasions, include hedgehog and stoat although no evidence of either species was noted.

## 4. Evaluation of impacts

### 4.1 Proposed development

The old unit which was built in the 1960s will be partially decommissioned. There are currently 2 over-ground and 3 underground tanks on the site and it is proposed that only 1 underground tank will be retained. A new engineered, geo-membrane-lined covered storage basin will be provided. Stock numbers at the site will not increase (i.e. maximum number 8,000 animals). All clean and soiled water will be separated and clean storm water will be diverted to the small watercourse which runs along the western boundary

## 4.2 Habitat value

The relative values of habitat types are detailed in **Table 1**. It should be noted the value of a habitat is site specific and will be partially related to the amount of that habitat in the surrounding landscape. The evaluation scheme used in **Table 1** is based on the scheme detailed in the NRA publication *Guidelines for assessment of ecological impacts of National Road Schemes (Appendix 2)*.

**TABLE 1 HABITAT VALUES**

Habitat Type	Relative Habitat Value	Comments	Impacts
Recolonising bare ground ED3/Spoil and bare ground ED2/ Buildings and artificial surfaces BL3	Low value habitat (E)	Low value habitat with minimal biodiversity.	Overall however the habitats to be affected are not of high value and the impact will be <b>minor negative</b> .
Treelines (WL2)/ Hedgerows WL1	Moderate local value (D)	The mature lime trees along the northern boundary are of value and could potentially support bat roosts. The native hedgerow on the is also of some local value.	Mature trees and hedgerows will be retained and thus no impact on these habitats is expected to occur.
Depositing river FW2	Moderate local value (D)	The section of watercourse which adjoins the site has minimal flows and is not a high value habitat. However it of value as part of an overall river catchment area.	The development could potentially impact on the site by allowing excess nutrients to reach the watercourse. Provided the relevant mitigation measures and design parameters are put in place it is considered highly unlikely that the development will have an impact on the watercourse.
Broadleaved woodland WD1	Low to moderate local value (E to D)	Broad band of planted woodland of primarily non-native species. Poorly developed ground flora.	There will be no impact on this development.

## 5. Mitigation measures

The following mitigation measures are recommended:

Full details of mitigation measures are given in the main body of the EIS.

Mature trees on site will be retained and the most important trees are those along the small watercourse. Any damage to these trees or their roots must be avoided.

In no circumstances should silt or suspended solids be allowed to reach the watercourse. Machinery should not enter the watercourse and it is important that the bank structure is not changed or destabilised. The construction management of the site will take account of the recommendations of the CIRIA guides *Control of Water Pollution from Construction Sites 2001* and *Control of water pollution from linear construction projects 2006* to minimise as far as possible the risk of pollution to the stream.

Where practicable, the boundary landscape planting should be predominantly of Irish native species that reflect the existing vegetation of the area. These should be derived from local native-origin stock. Suitable native species would include hawthorn, blackthorn, ash, hazel, gorse, willow and holly.

Hedgerows and trees which are to be retained should be securely fenced prior to commencement of works. Such fencing should be clearly visible to machinery operators.

## 6. Residual impacts

There will be a loss of some low value habitat and some short-term disruption to populations of common birds. There may be some short-term displacement of birds during the construction phase. Provided the design parameters and mitigation measures are implemented no significant deleterious impact on the watercourse is expected to occur. No significant impact on native hedgerows, mature trees or the stream is expected to occur. A minimum of three lines of native trees will be planted on the un-vegetated parts of the boundary providing additional habitats.

## 7. Spreadlands

Pig manure will be treated via an anaerobic digester which is to be located close-by and subsequently supplied to customer farms. The customer farms consist of agricultural land dominated by intensive grassland and tillage. The land which is flat to softly undulating is considered high quality farmland. Many of the hedges are well developed with significant numbers of mature trees however some hedges have been removed to increase field size. As the fields on which the pig manure will be applied are all intensively farmed they will have received significant quantities of chemical fertiliser or animal manures in the past. Provided that all mitigation measures are implemented and that all pig manure is applied with due regard to the relevant legislation and regulations it is considered unlikely that there will be a significant deleterious impact on the ecology of the customer farms and watercourses.

## 8. Mitigation

Solids will be separated including 70%-80% of the phosphorus. The liquid fertiliser will be supplied to customer farms in accordance with the requirements of S.I. No.378 of 2006. This process should significantly reduce the risk to both surface and groundwater.

Further details on relevant mitigation measures are provided in the main body of the environmental impact statement for this development and further detail on the use of digester is provided in the EIS which relates to the construction of the anaerobic digester.

## 9. References

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- Pilcher J and Hall (2001) Flora Hibernica; the Wild Flowers, Plants and Trees of Ireland The Collins Press
- Stace C (1999) Field Flora of the British Isles Cambridge University Press
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- White A (1993) Threatened Mammals, Birds, Amphibians and Fish in Ireland Dept. of the Environment for Northern Ireland/OPW, HMSO Belfast

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Appendix 1 Photographs



Photo 1 showing mature trees on western boundary



Photo 2 showing an internal road with grassy verge to the right and with planted trees to the left.



Photo 3 showing native hedgerow dominated by elder on the eastern boundary.

**Appendix 2. Site evaluation scheme**

Rating	Qualifying criteria
<b>A</b>	<b>Internationally important</b> Sites designated (or qualifying for designation) as SAC* or SPA* under the EU Habitats or Birds Directives. Undesignated sites containing good examples of Annex I <u>priority</u> habitats under the EU Habitats Directive. Major salmon river fisheries.
<b>B</b>	<b>Nationally important</b> Sites or waters designated or proposed as an NHA* or statutory Nature Reserves. Undesignated sites containing good examples of Annex I habitats (under EU Habitats Directive). Undesignated sites containing <u>significant numbers</u> of resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive or species protected under the Wildlife (Amendment) Act 2000. Major trout river fisheries. Water bodies with major amenity fishery
<b>C</b>	<b>High value, locally important</b> Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or significant populations of locally rare species. Small water bodies with known salmonid populations or with good potential salmonid habitat. Sites containing <u>any</u> resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU
<b>D</b>	<b>Moderate value, locally important</b> Sites containing some semi-natural habitat or locally important for wildlife. Small water bodies with some coarse fisheries value or some potential salmonid habitat. Any water body with unpolluted water (O-value rating 4-5)
<b>E</b>	<b>Low value, locally important</b> Artificial or highly modified habitats with low species diversity and low wildlife value. Water bodies with no current fisheries value and no significant potential fisheries value.

\*SAC = Special Area of Conservation

SPA= Special Protection Area

NHA= Natural Heritage Area

Criteria for assessing impact significance

(a) Terrestrial habitats

Impact level	Site category*				
	A sites Internationally important	B sites Nationally important	C Sites High value, locally important	D sites Moderate value, locally important	E sites Low value, locally important
<b>Severe negative</b>	Any permanent impacts	Permanent impacts on a large part of a site			
<b>Major negative</b>	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a large part of a site		
<b>Moderate negative</b>	Temporary impacts on a small part of a site	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a large part of a site	
<b>Minor negative</b>		Temporary impacts on a small part of a site	Temporary impacts on a large part of a site	Permanent impacts on a small part of a site	Permanent impacts on a large part of a site
<b>Neutral</b>	No impacts	No impacts	No impacts	No impacts	Permanent impacts on a small part of a site
<b>Minor positive</b>				Permanent beneficial impacts on a small part of a site	Permanent beneficial impacts on a large part of a site
<b>Moderate positive</b>			Permanent beneficial impacts on a small part of a site	Permanent beneficial impacts on a large part of a site	
<b>Major positive</b>		Permanent beneficial impacts on a small part of a site	Permanent beneficial impacts on a large part of a site		

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Criteria for assessing impact significance  
 (b) Aquatic habitats

**A Sites**

	Temporary	Short-term	Medium-term	Long-term
Extensive	Major	Severe	Severe	Severe
Localised	Major	Major	Severe	Severe

**B Sites**

	Temporary	Short-term	Medium-term	Long-term
Extensive	Major	Major	Severe	Severe
Localised	Moderate	Moderate	Major	Major

**C Sites**

	Temporary	Short-term	Medium-term	Long-term
Extensive	Moderate	Moderate	Major	Major
Localised	Minor	Moderate	Moderate	Moderate

**D Sites**

	Temporary	Short-term	Medium-term	Long-term
Extensive	Minor	Minor	Moderate	Moderate
Localised	Not significant	Minor	Minor	Minor

**E Sites**

	Temporary	Short-term	Medium-term	Long-term
Extensive	Not significant	Not significant	Minor	Minor
Localised	Not significant	Not significant	Not significant	Not significant

In line with the EPA Guidelines (EPA 2002), the following terms are defined when quantifying duration:

- Temporary: up to 1 year,
- Short-term: from 1-7 years,
- Medium-term: 7-15 years,
- Long-term: 15-60 years,
- Permanent: over 60 years.

Localised impacts on rivers are loosely defined as impacts measurable no more than 250m from the impact source. Extensive impacts on rivers are defined as impacts measurable more than 250m from the impact source. Any impact on salmonid spawning habitat, or nursery habitat where it is in short supply, would be regarded as an extensive impact as it is likely to have an impact on the salmonid population beyond the immediate vicinity of the impact source.

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WOODVILLE PIG FARMS LTD

APPENDIX NO 5.

CARCASS DISPOSAL  
AGREEMENT

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# BEECHFIELD PRODUCTS LTD

ANIMAL COLLECTION SERVICE  
LICENSED HAULAGE & SKIPHIRE

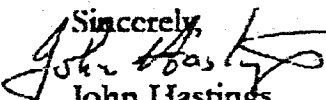
January 9, 2007

**Re: collection of dead pigs from Woodville Pig Farms**

Dear Sir /Madam:

I confirm that we collect dead pigs on the weekly basis from Woodville Pig Farm, Ballymackey, Nenagh, Co. Tipperary and from Ballyknockane Unit, Ballymackey, Nenagh, Co. Tipperary.

Sincerely,

  
John Hastings  
Manager

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**BERCHWALK • ROSCREA • CO. TIPPERARY**

**PHONE: 0505 21991 FAX: 0505 24652**



APPENDIX NO. 6

STORMWATER VISUAL  
INSPECTION REGISTER

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APPENDIX NO. 7

DISPOSAL OF CARCASSES  
IN EVENT OF  
CATEGORY A DISEASE

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# BEECHFIELD PRODUCTS LTD

ANIMAL COLLECTION SERVICE  
LICENSED HAULAGE & SKIPHIRE

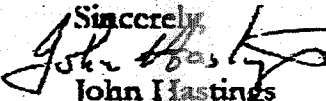
January 9, 2007

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Sincerely,

  
John Hastings  
Manager

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**BEECHWALK • ROSCREA • CO. TIPPERARY**  
**PHONE: 0505 21991 FAX: 0505 24652**

APPENDIX NO. 8

ARCHAEOLOGICAL REPORT

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**ARCHAEOLOGICAL REPORT**

**FOR SITE**

**OF**

**WOODVILLE PIG FARM'S LTD PIG FARM**

**AT**

**BALLYKNOCKANE, BALLYMACKEY, NENAGH,  
CO TIPPERARY**

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**1. SCOPE OF THE STUDY.**

This report assesses the impact on the archaeological environment if any, of the construction of three No. new pig houses to replace 11 No. existing pig houses adjacent to the existing farm at Ballyknockane Ballymackey, Nenagh, Co Tipperary.

**2. RESOURCE MATERIAL CONSULTED.**

The archaeological status of the lands where it is proposed to construct these new house's, adjacent to the existing pig farm was established by consulting the 'SITES AND MONUMENTS RECORD (SMR) for County Tipperary.

**3. ARCHAEOLOGICAL MONUMENTS IDENTIFIED.**

This review indicates that there are no archaeological sites on or adjacent to the area referenced.

**4. IMPACT OF PROPOSED DEVELOPMENT OF NEW FATTENING HOUSE'S ADJACENT TO EXISTING PIG FARM ON THE ARCHAEOLOGICAL ENVIRONMENT.**

The construction of this proposed development will require minimal ground disturbance, as it is being constructed over the foot print of the existing yard area, which when overlaid with the lack of evidence of any historical sites from SMR Records for Co Tipperary, it is clear this proposed development poses no immediate danger to any listed sites.

**5. THE SITE.**

A review of the archaeological Sites & Monuments Record Maps (1925), indicates that there are no archaeological sites recorded on or adjacent to this proposed site

**SUMMARY**

- (i) There are no archaeological sites recorded on or adjacent to this proposed development site.
- (ii) There is no known archaeological reason to prohibit the construction of these new Pig Fattening House's

## APPENDIX NO. 9

# WELL WATER ANALYSES & LOCATION MAP

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ANALYSTS: Agricultural and Environmental  
CONSULTANTS: Agricultural and Nutritional

Tel: 058-52861  
Fax: 058-52865  
admin@fba-labs.com

## CERTIFICATE OF ANALYSIS

MS Farm Services,  
Mooresfort,  
Lattin,  
Co. Tipperary.

Sample Ref: W2  
Date Received: 09.10.2006  
Lab Ref: 10375

Parameter	Units of analysis	Result
Total Ammonia	mg/l NH <sub>3</sub> -N	0.0
Nitrate	mg/l NO <sub>3</sub> -N	0.1
Total Coliforms	MPN/100mls	3
Faecal Coliforms	MPN/100mls	1

Signed \_\_\_\_\_

APPENDIX NO. 10

PIG MANURE REGISTER

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APPENDIX NO 11.

CODE OF GOOD PRACTICE

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**TEAGASC CODE OF GOOD PRACTICE  
(A) FOR SLURRY SPREADING AND (B) TO REDUCE ODOUR EMISSIONS**

**A. Code of Good Practice for Slurry Spreading**

A concise summary of the guidelines is the Teagasc Code of Good Practice for Slurry Spreading.

- \* Spread slurry at rates which take account of the crops nutrient requirements. Limit annual applications of cattle and pig slurry to 55 and 35 t ha.
- \* Where possible spread slurry earlier rather than later in the growing season.
- \* Avoid spreading slurry (a) on wet or waterlogged soils, (b) on frozen or snow covered soils, (c) in areas near watercourses or wells
- \* Check weather forecast before spreading. If heavy rain is forecast within 48 hours avoid spreading on heavy wet soils.
- \* Avoid direct contamination of surface and ground water by leaving a sufficient margin.
- \* Use Teagasc Code of Practice to Reduce Odour Emissions.

**B. Teagasc Code of Practice to Reduce Odour Emissions at Spreading Time**

A sensible approach to spreading minimises the impact of odour

- \* Direct slurry downwards towards the soil using a low trajectory splash plate.
- \* Switch off the vacuum pump immediately the tanker empties to minimise mist production.
- \* Avoid using rain guns to spread slurry
- \* Avoid spreading slurry when the wind direction is towards population centres or neighbours houses.
- \* Avoid spreading slurry at times when the risk of causing odour nuisance to the public is greatest, e.g. weekends or public holidays.
- \* Spreading in damp or light rain conditions will minimise smell drift.
- \* Where slurry is spread on tilled soil or land that is to be ploughed it should be incorporated into the soil as quickly as possible following application.

APPENDIX NO. 12

LANDSCAPING REPORT

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**Liam O'Connor, Forest and Tree-care Services,  
West End,  
Kilfinane,  
Co Limerick.**

**02-10-06**

**NORTH TIPPERARY COUNTY COUNCIL  
CIVIC BUILDINGS  
LIMERICK ROAD  
NENAGH**

**Subject: Woodville Pig Farms Ltd Pig Farm at Ballayknockane  
Ballymackey, Nenagh Co Tipperary.**

**I inspected the above site at the request of M & J Mc Eniry, Main St, Ballyporeen, MS Farm Services, and NRG Ltd Mooresfort, Lattin Co Tipperary. I found that the site is at the base of an incline and is partially visible from a number of locations on the adjacent public roadway. There is some existing screening, but this proposed development, with an earthen burn adjacent to the proposed Loose Dry Sow House, provides an ideal opportunity to screen this site.**

**In order to minimise the visual impact of the site I propose the planting of a minimum of three rows of native species Holly (Ilex Aquifolium), Alder (Alnus Glutinosa), Hazel (Corylus). These native species trees will act as a screen around this site. The proposed specifications for the planting schedule are;**



- 1. Planting to take place in October (as soon as transplants become available.**
- 2. Use 60 90 cm transplants.**
- 3. Spray the site with round up pre-planting to eliminate competing weeds at 4 litres/Ha.**
- 4. Pit plant all trees at 2.5m spacings for good silvacultural practice.**
- 5. Three rows will be adequate to achieve screening.ie. 2 deciduous and 1 evergreen.**
- 6. Some specimen plants to be planted at site entrance.**

**Liam O Connor  
Forester.**

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APPENDIX NO. 13

EMERGENCY RESPONSE  
REPORT

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**WOODVILLE PIG FARMS LTD**  
**BALLYKNOCKANE, BALLYMACKAY, NENAGH, CO TIPPERARY**  
**IPC LICENCE REG NO 000**  
PHONE: TIM CULLINANE 087-2760625

## **EMERGENCY RESPONSE PROCEDURE**

**In the event of any emergency situation developing on site which may create an environmental risk, make contact with the following**

**1. NOTIFY THE ENVIRONMENTAL PROTECTION AGENCY**  
Phone: 053-60600 Fax: 053-60699

**2. NOTIFY NORTH TIPPERARY COUNTY COUNCIL**  
Phone: 067-44786 Fax: 067-32260

**3. NOTIFY THE REGIONAL FISHERIES BOARD**  
Phone: 01-2787022 Fax: 01-2787025

**\* IF JCB's or Excavating machinery are required make contact with**

**NOEL WELSH Phone: 086-8334312**

**\* If Slurry tankers are required to move slurry, make contact with**

**SEAMUS KIRWIN Phone: 087-6829020**

**\* If Structural damage has occurred to any buildings on site, contact**

**KELLY;S OF FANTANE Phone: 0504-52118**

**Doctor: ROISIN COSTELLOE 0505-42129**

**FIRE BRIGADE: 999**

**GARDA: 999**

APPENDIX NO. 14

REFUSE WASTE REGISTER

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APPENDIX NO. 15

FLUORESCENT TUBES  
REGISTER

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APPENDIX NO. 16

WATER QUALITY  
ANALYSES

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ANALYSTS: Agricultural and Environmental  
CONSULTANTS: Agricultural and Nutritional

Tel: 058-52861  
Fax: 058-52865  
admin@fba-labs.com

## CERTIFICATE OF ANALYSIS

MS Farm Services,  
Mooresfort,  
Lattin,  
Co. Tipperary.

Sample Ref: SW2  
Date Received: 09.10.2006  
Lab Ref: 10373

Parameter	Units of analysis	Result
COD	mg/l O <sub>2</sub>	4.9

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Signed *[Signature]*

Date 10.10.06

APPENDIX NO. 17

CONTRACT FOR DISPOSAL  
OF VETERINARY WASTE

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# SERVICE AGREEMENT

Initial Healthcare  
Rentokil Initial Limited.  
47 Terenure Road East, Dublin 6

Invoice Name Mr Sweeney TRM  
 Address M.S. Farm Service  
Moorehill Co Tipperary  
 Postcode \_\_\_\_\_  
 Service Address Woodville Pig Farm  
(if different from above)  
Tipperary Co Tipperary

Order No. TRM CULPIN 08712760625

Commencement date \_\_\_\_\_


VAT rate  VAT exempt No.   
(attach copy)

PRODUCT/SERVICE	Service Frequency per annum	Cost per unit	Quantity	Cost per annum
6 ER Shaps	2 P.A	121.65	1	

- The client agrees to pay a one off installation charge of €  plus an annual charge of € 121.65. All payments are subject to VAT at the appropriate rate. Initial charges are due on commencement of the agreement and subsequent payments annually in advance. In the event of late payment, interest may accrue, at the sole discretion of Rentokil Initial Limited, at a rate of 10% per month until payment is received. All payments are to be made to Rentokil Initial Limited at 47 Terenure Road East, Dublin 6, where this agreement shall be deemed to have been made. Rentokil Initial Limited reserves the right to increase charges following expiry of the first year.
- This agreement may only be terminated or service deleted on an anniversary of the commencement date, provided that written notification is given by the party terminating it to the other at least 3 months prior to such anniversary date. Addition of a new service to this agreement automatically extends the anniversary date by 12 months after the addition date.
- The person signing this agreement warrants that he/she has the authority of the client to make this contract on the clients behalf.

**I clearly understand that this service agreement is for a minimum of 1 year.**

Signed for client \_\_\_\_\_  
 Name in block capitals \_\_\_\_\_  
 Position \_\_\_\_\_  
 Date \_\_\_\_\_

Signed for RENTOKIL INITIAL LIMITED  


# APPENDIX NO. 18

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# CARCASS REGISTER



APPENDIX NO. 19

VETERINARY WASTE  
REGISTER

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APPENDIX NO. 20

S.I. No 378 OF 2006

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**STATUTORY INSTRUMENTS**

**S.I. No. 378 of 2006**

**European Communities  
(Good Agricultural Practice for Protection of Waters)  
Regulations 2006**

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## INDEX

Article	Page
---------	------

### PART 1

#### PRELIMINARY

1.	Citation and commencement	1
2.	Revocations	2
3.	Interpretation	2

### PART 2

#### FARMYARD MANAGEMENT

4.	Minimisation of soiled water	6
5.	Collection and holding of certain substances	6
6.	Structural integrity of storage facilities	7
7.	General obligations as to capacity of storage facilities	7
8.	Capacity of storage facilities for effluents and soiled water	8
9.	Capacity of storage facilities for pig manure	8
10.	Capacity of storage facilities for poultry manure	9
11.	Capacity of storage facilities for manure from deer, goats and sheep	9
12.	Capacity of storage facilities for manure from cattle	9
13.	Reduced storage capacity in certain circumstances	9
14.	Operative dates	11

### PART 3

#### NUTRIENT MANAGEMENT

15.	Interpretation, commencement etc	11
16.	Duty of occupier in relation to nutrient management	12

## PART 4

### PREVENTION OF WATER POLLUTION FROM FERTILISERS AND CERTAIN ACTIVITIES

17.	Distances from a water body and other issues	13
18.	Requirements as to manner of application of fertilisers, soiled water etc	16
19.	Periods when application of fertilisers is prohibited	18
20.	Limits on the amount of livestock manure to be applied	19
21.	Ploughing and the use of non-selective herbicides	19

## PART 5

### GENERAL

22.	General duty of occupier	20
23.	Keeping of records by occupier	20
24.	False or misleading information	21
25.	Authorised person	21
26.	Offences	25

## PART 6

### FUNCTIONS OF PUBLIC AUTHORITIES

27.	Minister for Agriculture and Food	26
28.	Making and review of action programme by the Minister	26
29.	Agency	28
30.	Local authorities	29
31.	Compliance with Data Protection Acts	30
32.	Certificate in relation to nutrient content of fertiliser	30
33.	Exemption for exceptional circumstances for research	30
34.	Transitional provisions	31

## SCHEDULES

Schedule 1	Soil test	32
Schedule 2	Criteria as to storage capacity and nutrient management	34
Schedule 3	Storage periods for livestock manure	47
Schedule 4	Periods when application of fertilisers to land is prohibited	

## S.I. No. 378 of 2006

### European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2006

The Minister for the Environment, Heritage and Local Government in exercise of the powers conferred on him by section 3 of the European Communities Act, 1972 (No. 27 of 1972) and for the purposes of giving further effect to Directive 75/442/EEC of 15 July 1975<sup>1</sup>, Directive 76/464/EEC of 4 May 1976<sup>2</sup>, Directive 80/68/EEC of 17 December 1979<sup>3</sup>, Directive 91/676/EEC of 12 December 1991<sup>4</sup>, Directive 2000/60/EC of 23 October 2000<sup>5</sup> and Directive 2003/35/EC of 26 May 2003<sup>6</sup> hereby makes the following Regulations:

#### PART 1

#### PRELIMINARY

##### *Citation and commencement*

1. (a) These Regulations may be cited as the European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2006.
- (b) These Regulations shall come into effect on 1 August, 2006 save as is otherwise provided in relation to any particular provision.

1. O.J. No. L 194/39, 25 July 1975
2. O.J. No. L 129/23, 18 May 1976
3. O.J. No. L 20/43, 26 January 1980
4. O.J. No L 375/1, 31 December 1991
5. O.J. No. L 327/1, 22 December 2000
6. O.J. No. L 156/17, 25 June 2003

## **Revocations**

2. The European Communities (Protection of Waters Against Pollution from Agricultural Sources) Regulations, 2003 (S.I. No.213 of 2003) and the European Communities (Good Agricultural Practice for Protection of Waters) Regulations, 2005 (S.I. No. 788 of 2005) are hereby revoked.

## **Interpretation**

3. (1) In these Regulations, save where the context otherwise requires—

“Act of 1992” means the Environmental Protection Agency Act, 1992 (No. 7 of 1992);

“Agency” means the Environmental Protection Agency established under section 19 of the Act of 1992;

“agriculture” includes the breeding, keeping and sale of livestock (including cattle, horses, pigs, poultry, sheep and any creature kept for the production of food, wool, skins or fur), the making and storage of silage, the cultivation of land, and the growing of crops (including forestry and horticultural crops);

“application to land”, in relation to fertiliser, means the addition of fertiliser to land whether by spreading on the surface of the land, injection into the land, placing below the surface of the land or mixing with the surface layers of the land but does not include the direct deposition of manure to land by animals;

“aquifer” means any stratum or combination of strata that stores or transmits groundwater;

“chemical fertiliser” means any fertiliser that is manufactured by an industrial process;

“farmyard manure” means a mixture of bedding material and animal excreta in solid form arising from the housing of cattle, sheep and other livestock excluding poultry;

“fertiliser” means any substance containing nitrogen or phosphorus or a nitrogen compound or phosphorus compound utilised on land to enhance growth of vegetation and may include livestock manure, the residues from fish farms and sewage sludge;

“groundwater” means all water that is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil;

“holding” means an agricultural production unit and, in relation to an occupier, means all the agricultural production units managed by that occupier;

“livestock” means all animals kept for use or profit (including cattle, horses, pigs, poultry, sheep and any creature kept for the production of food, wool, skins or fur);

“livestock manure” means waste products excreted by livestock or a mixture of litter and waste products excreted by livestock, even in processed form;

“local authority” means a city council or county council within the meaning of the Local Government Act, 2001 (No. 37 of 2001);

“the Minister” means the Minister for the Environment, Heritage and Local Government;

“net area”, in relation to a holding and the grassland stocking rate, means the gross area of the holding or the grassland as appropriate excluding areas under farm roads, paths, buildings, farmyards, woods, dense scrub, rivers, streams, ponds, lakes, sandpits, quarries, expanses of bare rock, areas of bogland not grazed, areas fenced off and not used for production, inaccessible areas and areas of forestry (including Christmas trees), or required to be totally destocked under a Commonage Framework Plan;

“the Nitrates Directive” means Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources;

“occupier”, in relation to a holding, includes the owner, a lessee, any person entitled to occupy the holding or any other person having for the time being control of the holding;

“organic fertiliser” means any fertiliser other than that manufactured by an industrial process and includes livestock manure, dungstead manure, farmyard manure, slurry, soiled water, non-farm organic substances such as sewage sludge, industrial by-products and sludges and residues from fish farms;

“ploughing” includes ploughing and primary cultivation, excluding light cultivation carried out to encourage natural regeneration;

“relevant local authority” means the local authority in whose administrative area a farm holding or part of a farm holding is situated;

“river basin district” means a river basin district established by the European Communities (Water Policy) Regulations, 2003 (S.I. No. 722 of 2003);

“slurry” includes –

- (a) excreta produced by livestock while in a building or yard, and
- (b) a mixture of such excreta with rainwater, washings or other extraneous material or any combination of these,

of a consistency that allows it to be pumped or discharged by gravity at any stage in the handling process but does not include soiled water;

“soil test” means a soil sample taken in accordance with the soil sampling procedure set out in Schedule 1 and analysed in accordance with that Schedule, at a laboratory approved for this purpose by the Minister for Agriculture and Food;

“soiled water” has the meaning assigned by sub-article (2);

“steep slope” means ground which has an average incline of 20% or more in the case of grassland or 15% or more in the case of other land;

“tidal waters” includes the sea and any estuary up to high water mark medium tide and any enclosed dock adjoining tidal waters;

“waters” includes –

- (a) any (or any part of any) river, stream, lake, canal, reservoir, aquifer, pond, watercourse, or other inland waters, whether natural or artificial,
- (b) any tidal waters, and

- (c) where the context permits, any beach, river bank and salt marsh or other area which is contiguous to anything mentioned in paragraph (a) or (b), and the channel or bed of anything mentioned in paragraph (a) which is for the time being dry,

but does not include a sewer,

“waterlogged ground” means ground that is saturated with water such that any further addition will lead, or is likely to lead, to surface run-off;

and cognate words shall be construed accordingly.

- (2) (a) In these Regulations “soiled water” includes, subject to this sub-article, water from concreted areas, hard standing areas, holding areas for livestock and other farmyard areas where such water is contaminated by contact with any of the following substances -

- (i) livestock faeces or urine or silage effluent,  
(ii) chemical fertilisers,  
(iii) washings such as vegetable washings, milking parlour washings or washings from mushroom houses,  
(iv) water used in washing farm equipment.

- (b) In these Regulations, “soiled water” does not include any liquid where such liquid has either –

- (i) a biochemical oxygen demand exceeding 2,500 mg per litre, or  
(ii) a dry matter content exceeding 1%.

- (c) For the purposes of these Regulations, soiled water which is stored together with slurry or which becomes mixed with slurry is deemed to be slurry.

- (3) In these Regulations a reference to:-

- (a) an Article, Part or Schedule which is not otherwise identified is a reference to an Article, Part or Schedule of these Regulations,



- (b) a sub-article or paragraph which is not otherwise identified is a reference to a sub-article or paragraph of the provision in which the reference occurs, and
  - (c) a period between a specified day in a month and a specified day in another month means the period commencing on the first-mentioned day in any year and ending on the second-mentioned day which first occurs after the first-mentioned day.
- (4) In these Regulations a footnote to a table in Schedule 2 shall be deemed to form part of the table.

## PART 2

### FARMYARD MANAGEMENT

#### ***Minimisation of soiled water***

4. (1) An occupier of a holding shall take all such reasonable steps as are necessary for the purposes of minimising the amount of soiled water produced on the holding.
- (2) Without prejudice to the generality of sub-article (1), an occupier of a holding shall take all such reasonable steps as are necessary to ensure that rainwater from roofs and unsoiled paved areas and water flowing from higher ground onto a farmyard
- (a) is diverted to a clean water outfall, and
  - (b) is prevented from entering onto soiled paved areas or otherwise becoming soiled.
- (3) This article shall come into operation on 1 January 2007.

#### ***Collection and holding of certain substances***

5. Livestock manure and other organic fertilisers, soiled water and effluents from dungsteads, farmyard manure pits or silage pits arising or produced in a building or yard on a holding shall, prior to its application to land or other treatment, be collected and held in a

manner that prevents the run-off or seepage, directly or indirectly, into groundwaters or surface waters of such substances.

### ***Structural integrity of storage facilities***

6. (1) Storage facilities for livestock manure and other organic fertilisers, soiled water and effluents from dungsteads, farmyard manure pits or silage pits shall be maintained free of structural defect and be of such standard as is necessary to prevent run-off or seepage, directly or indirectly, into groundwater or surface water, of such substances.
- (2) Storage facilities being provided on a holding on or after 1 August 2006 shall -
  - (a) be designed, sited, constructed, maintained and managed so as to prevent run-off or seepage, directly or indirectly, into groundwater or surface water of a substance specified in sub-article (1), and
  - (b) comply with such construction specifications for those facilities as may be approved from time to time by the Minister for Agriculture and Food.
- (3) In this article "storage facilities" includes out-wintering pads, earthen-lined stores, integrated constructed wetlands and any other system used for the holding or treatment of livestock manure or other organic fertilisers.

### ***General obligations as to capacity of storage facilities***

7. (1) The capacity of storage facilities for livestock manure and other organic fertilisers, soiled water and effluents from dungsteads, farmyard manure pits or silage pits on a holding shall be adequate to provide for the storage of all such substances as are likely to require storage on the holding for such period as may be necessary as to ensure compliance with these Regulations and the avoidance of water pollution.
- (2) For the purposes of sub-article (1) an occupier shall have due regard to the storage capacity likely to be required during periods of adverse weather conditions when, due to extended periods of wet weather, frozen ground or otherwise, the application to land of livestock manure or soiled water is precluded.

- (3) For the purposes of Articles 7 to 13, the capacity of storage facilities on a holding shall be disregarded insofar as the occupier does not have exclusive use of those facilities.
- (4) For the purposes of Articles 9 to 13 the capacity of facilities required in accordance with these Regulations for the storage of manure from livestock of the type specified in Tables 1, 2 or 3 of Schedule 2 shall be determined by reference to the criteria set out in the relevant table and the rainfall criteria set out in Table 4 of that schedule and shall include capacity for the storage for such period as may be necessary for compliance with these Regulations of rainwater, soiled water or other extraneous water which enters or is likely to enter the facilities.

#### **Capacity of storage facilities for effluents and soiled water**

8. Without prejudice to the generality of Article 7, the capacity of facilities for the storage on a holding of -
  - (a) effluent produced by ensiled forage and other crops shall equal or exceed the capacity specified in Table 5 of Schedule 2, and
  - (b) soiled water shall equal or exceed the capacity required to store all soiled water likely to arise on the holding during a period of 10 days

#### **Capacity of storage facilities for pig manure**

9. (1) Without prejudice to the generality of Article 7, the capacity of facilities for the storage on a holding of livestock manure produced by pigs shall, subject to sub-article (2) and Article 13, equal or exceed the capacity required to store all such livestock manure produced on the holding during a period of 26 weeks.
- (2) The period specified in Schedule 3 shall, in substitution for that prescribed by sub-article (1), apply in relation to livestock manure produced by pigs on a holding in case where all the following conditions are met -
  - (a) the number of pigs on the holding does not at any time exceed one hundred pigs, and
  - (b) the holding comprises a sufficient area of land for the application in accordance with these Regulations of all livestock manure produced on the holding.

### ***Capacity of storage facilities for poultry manure***

10. (1) Without prejudice to the generality of Article 7, the capacity of facilities for the storage on a holding of livestock manure produced by poultry shall, subject to sub-article (2) and Article 13, equal or exceed the capacity required to store all such livestock manure produced on the holding during a period of 26 weeks.
- (2) The period specified in Schedule 3 shall, in substitution for that prescribed by sub-article (1), apply in relation to livestock manure produced by poultry on a holding in case where all the following conditions are met –
- (a) tillage or grassland farming is carried out on the holding,
  - (b) the number of poultry places on the holding does not exceed 2,000 places, and
  - (c) the holding comprises a sufficient area of land for the application in accordance with these Regulations of all livestock manure produced on the holding.

### ***Capacity of storage facilities for manure from deer, goats and sheep***

11. Without prejudice to the generality of Article 7, the capacity of facilities for the storage on a holding of livestock manure produced by deer, goats and sheep shall, subject to Article 13, equal or exceed the capacity required to store all such livestock manure produced on the holding during a period of six weeks.

### ***Capacity of storage facilities for manure from cattle***

12. Without prejudice to the generality of Article 7, the capacity of facilities for the storage on a holding of livestock manure produced by cattle shall, subject to Article 13, equal or exceed the capacity required to store all such livestock manure produced on the holding during the period specified in Schedule 3.

### ***Reduced storage capacity in certain circumstances***

13. (1) The capacity of facilities for the storage of livestock manure on a holding may, to such extent as is justified in the particular circumstances of the holding, be less than the capacity specified in Article 9, 10, 11 or 12, as appropriate, in the case of a holding where –

- (a) the occupier of the holding has a contract providing exclusive access to adequate alternative storage capacity located outside the holding,
  - (b) the occupier has a contract for access to a treatment facility for livestock manure, or
  - (c) the occupier has a contract for the transfer of the manure to a person authorised under and in accordance with the Waste Management Acts 1996 to 2003 or the Environmental Protection Agency Acts 1992 and 2003 to undertake the collection, recovery or disposal of the manure.
- (2) Subject to sub-article (3), the capacity of facilities for the storage of livestock manure may be less than the capacity specified in Article 11 or 12, as appropriate, in relation to –
- (a) deer, goats or sheep which are out-wintered at a grassland stocking rate which does not exceed 130 kg nitrogen at any time during the period specified in Schedule 4 in relation to the application of organic fertiliser other than farmyard manure, or
  - (b) livestock (other than dairy cows, deer, goats or sheep) which are out-wintered at a grassland stocking rate which does not exceed 85 kg nitrogen at any time during the period specified in Schedule 4 in relation to the application of organic fertiliser other than farmyard manure.
- (3) Sub-article (2) shall apply only in relation to a holding where all the following conditions are met –
- (a) all the lands used for out-wintering of the livestock are comprised in the holding,
  - (b) the out-wintered livestock have free access at all times to the required lands,
  - (c) the amount of manure produced on the holding does not exceed an amount containing 140kg of nitrogen per hectare per annum,
  - (d) severe damage to the surface of the land by poaching does not occur, and

- (e) the reduction in storage capacity is proportionate to the extent of out-wintered livestock on the holding.
- (4) In this article, a grassland stocking rate of 130 kg or 85kg of nitrogen, as the case may be, means the stocking of grassland on a holding at any time by such numbers and types of livestock as would in the course of a year excrete waste products containing 130 kg or 85 kg of nitrogen, as the case may be, per hectare of the grassland when calculated in accordance with the nutrient excretion rates for livestock specified in Table 6 of Schedule 2.

### ***Operative dates***

14. (1) In the case of a holding on which there are in place on 1 August 2006 storage facilities in compliance with the storage capacity requirements prescribed by Articles 8, 9, 10, 11 or 12, the relevant article and Article 7 shall come into effect in relation to those facilities on 1 August 2006.
- (2) In the case of a holding on which there are not in place on 1 August 2006 storage facilities in compliance with the storage capacity requirements prescribed by Article 9, that article and Article 7 shall come into effect in relation to those facilities on 31 December 2006 or the day on which such storage facilities are put in place on that holding, whichever day first occurs.
- (3) In the case of a holding on which there are not in place on 1 August 2006 storage facilities in compliance with the storage capacity requirements prescribed by Article 8, 10, 11 or 12, the relevant article and Article 7 shall come into effect on 31 December 2008 or the day on which such storage facilities are put in place on that holding, whichever day first occurs.
- (4) Save as is otherwise provided by this article, Article 7 shall come into operation on 31 December 2008.

## **PART 3**

### **NUTRIENT MANAGEMENT**

#### ***Interpretation, commencement etc***

15. (1) In this Part, "crop requirement", in relation to the application of fertilisers to promote the growth of a crop, means the amounts

and types of fertilisers which are reasonable to apply to soil for the purposes of promoting the growth of the crop having regard to the foreseeable nutrient supply available to the crop from the fertilisers, the soil and from other sources.

- (2) The amount of nitrogen or phosphorus specified in Table 7 or 8 of Schedule 2, as the case may be, in relation to a type of livestock manure or other substance specified in the relevant table shall for the purposes of this Part be deemed to be the amount of nitrogen or phosphorus, as the case may be, contained in that type of manure or substance except as may be otherwise specified in a certificate issued in accordance with Article 32.
- (3) The amount of nitrogen or phosphorus available to a crop from a fertiliser of a type which is specified in Table 9 of Schedule 2 in the year of application of that fertiliser shall, for the purposes of this Part, be deemed to be the percentage specified in that table of the amount of nitrogen or phosphorus, as the case may be, in the fertiliser.
- (4) The amount of nitrogen or phosphorus available to a crop from an organic fertiliser of a type which is not specified in Table 9 of Schedule 2 shall be deemed to be the amount specified in that table in relation to cattle manure unless a different amount has been determined in relation to that fertiliser by, or with the agreement of, the relevant local authority or the Agency, as the case may be.
- (5) A reference in this Part to the "nitrogen index" or the "phosphorus index" in relation to soil is a reference to the index number assigned to the soil in accordance with Table 10 or 11 of Schedule 2, as the case may be, to indicate the level of nitrogen or phosphorus available from the soil.
- (6) This Part shall come into operation on 1 January 2007.

#### ***Duty of occupier in relation to nutrient management***

16. (1) An occupier of a holding shall take all such reasonable steps as are necessary for the purposes of preventing or minimising the application to land of fertilisers in excess of crop requirement on the holding.
- (2) (a) For the purposes of this article the phosphorus index for soil shall be deemed to be phosphorus index 3 unless a soil test indicates that a different phosphorus index is appropriate in relation to that soil.

- (b) The soil test to be taken into account for the purposes of paragraph (a) in relation to soil shall, subject to paragraph (c), be the soil test most recently taken in relation to that soil.
- (c) Where a period of six years or more has elapsed after the taking of a soil test in relation to soil the results of that test shall be disregarded for the purposes of paragraph (a) except in a case where that soil test indicates the soil to be at phosphorus index 4.
- (3) Without prejudice to the generality of sub-article (1) and subject to sub-article (4), the amount of available nitrogen or available phosphorus applied to promote the growth of a crop specified in Table 12, 13, 14, 15, 16, 17, 18, 19, 20 or 21 of Schedule 2 shall not exceed the amount specified in the table in relation to that crop having regard to the relevant nitrogen index or phosphorus index, as the case may be, for the soil on which the crops are to be grown.
- (4) In the case of a holding on which grazing livestock are held, the amount of available phosphorus supplied to the holding by the concentrated feedstuff fed to such livestock shall be deemed to be 0.5 kg phosphorus in respect of each 100 kg of such concentrated feedstuff.
- (5) (a) In the case of a holding on which grazing livestock are held, the amount of available nitrogen and available phosphorus supplied to the holding by manure from such livestock shall (save insofar as such manure is exported from the holding) be deemed to be the relevant proportion of the amount of available nitrogen and available phosphorus contained in the total manure produced by such livestock.
- (b) In paragraph (a), the "relevant proportion" means the proportion of a year as is represented by the storage period specified in Schedule 3 in relation to the holding.

#### **PART 4**

### **PREVENTION OF WATER POLLUTION FROM FERTILISERS AND CERTAIN ACTIVITIES**

#### ***Distances from a water body and other issues***

17. (1) Chemical fertiliser shall not be applied to land within 1.5 metres of a surface watercourse.



(2) Organic fertiliser or soiled water shall not be applied to land within –

- (a) subject to sub-article (5), 200m of the abstraction point of any surface watercourse, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 100m<sup>3</sup> or more of water per day or serving 500 or more persons,
- (b) subject to sub-article (5), 100m of the abstraction point (other than an abstraction point specified at paragraph (a)) of any surface watercourse, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 10m<sup>3</sup> or more of water per day or serving 50 or more persons,
- (c) subject to sub-article (5), 25m of any borehole, spring or well used for the abstraction of water for human consumption other than a borehole, spring or well specified at paragraph (a) or (b),
- (d) 20m of a lake shoreline,
- (e) 15m of exposed cavernous or karstified limestone features (such as swallow-holes and collapse features), or
- (f) subject to sub-articles (8) and (9), 5m of a surface watercourse (other than a lake or a surface watercourse specified at paragraph (a) or (b)).

(3) Where farmyard manure is held in a field prior to landspreading it shall be held in a compact heap and shall not be placed within–

- (a) 250m of the abstraction point of any surface watercourse or borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 10m<sup>3</sup> or more of water per day or serving 50 or more persons,
- (b) 50m of any other borehole, spring or well used for the abstraction of water for human consumption other than a borehole, spring or well specified at paragraph (a),
- (c) 20m of a lake shoreline,

- (d) 50m of exposed cavernous or karstified limestone features (such as swallow-holes and collapse features),
- (e) 10m of a surface watercourse (other than a lake or a surface watercourse specified at paragraph (a)).
- (4) Farmyard manure shall not be held in a field at any time during the periods specified in Schedule 4 as applicable to that substance.
- (5) (a) A local authority may, in the case of any particular abstraction point and following consultation with the Agency, specify an alternative distance to that specified in sub-article (2)(a), (b) or (c) where, following prior investigations, the authority is satisfied that such other distance as may be specified by the authority is appropriate for the protection of waters being abstracted at that point.
- (b) A distance specified by a local authority in accordance with paragraph (a) may be described as a distance or distances from an abstraction point, a geological or other topographical feature or as an area delineated on a map or in such other way as appears appropriate to the authority.
- (6) In sub-article (5), "prior investigations" means, in relation to an abstraction point, an assessment of the susceptibility of waters to contamination in the vicinity of the abstraction point having regard to-
- (a) the direction of flow of surface water or groundwater, as the case may be,
- (b) the slope of the land,
- (c) the natural geological and hydrogeological attributes of the area including the nature and depth of any overlying soil and subsoil and its effectiveness in preventing or reducing the entry of harmful substances to water, and
- (d) where relevant, the technical specifications set out in the document "Groundwater Protection Schemes" (and the relevant groundwater protection responses) published in 1999 (ISBN 1-899702-22-9) or any subsequent published amendment of that document.

- (7) Where a local authority specifies an alternative distance in accordance with sub-article (5) the authority shall, as soon as may be –
- (a) notify the affected landowners and the Department of Agriculture and Food of the distance so specified,
  - (b) send to the Agency a summary of the report on the prior investigations carried for the purpose and the reasons for specifying the alternative distance, and
  - (c) make an entry in the register maintained in accordance with Article 30(6).
- (8) The distance of 5m specified in sub-article (2)(f) may be reduced to 3m where one of the following conditions is met -
- (a) the watercourse is an open drain, or
  - (b) the area of land adjacent to the watercourse is a narrow parcel of land not exceeding one hectare in area and not more than 50m in width.
- (9) Notwithstanding sub-articles (2)(f) and (8), organic fertiliser or soiled water shall not be applied to land within 10m of a surface watercourse where the land has an average incline greater than 10% towards the watercourse.

**Requirements as to manner of application of fertilisers, soiled water etc**

18. (1) Livestock manure and other organic fertilisers, effluents and soiled water shall be applied to land in as accurate and uniform a manner as is practically possible.
- (2) Fertilisers or soiled water shall not be applied to land in any of the following circumstances –
- (a) the land is waterlogged;
  - (b) the land is flooded or likely to flood;
  - (c) the land is snow-covered or frozen;
  - (d) heavy rain is forecast within 48 hours, or

- (e) the ground slopes steeply and, taking into account factors such as proximity to waters, soil condition, ground cover and rainfall, there is significant risk of causing water pollution.
- (3) A person shall, for the purposes of sub-article (2)(d), have regard to weather forecasts issued by Met Éireann.
- (4) Organic fertilisers or soiled water shall not be applied to land -
- (a) by use of an umbilical system with an upward-facing splashplate,
  - (b) by use of a tanker with an upward-facing splashplate,
  - (c) by use of a sludge irrigator mounted on a tanker, or
  - (d) from a road or passageway adjacent to the land irrespective of whether or not the road or passageway is within or outside the curtilage of the holding.
- (5) Subject to sub-article (6), soiled water shall not be applied to land -
- (a) in quantities which exceed in any period of 42 days a total quantity of 50,000 litres per hectare, or
  - (b) by irrigation at a rate exceeding 5 mm per hour.
- (6) In an area which is identified on maps compiled by the Geological Survey of Ireland as "Extreme Vulnerability Areas on Karst Limestone Aquifers", soiled water shall not be applied to land -
- (a) in quantities which exceed in any period of 42 days a total quantity of 25,000 litres per hectare, or
  - (b) by irrigation at a rate exceeding 3 mm per hour
- unless the land has a consistent minimum thickness of 1m of soil and subsoil combined.
- (7) For the purposes of sub-article (6), it shall be assumed until the contrary is shown that areas so identified as "Extreme Vulnerability Areas on Karst Limestone Aquifers" do not have a consistent minimum thickness of 1m of soil and subsoil combined.

### **Periods when application of fertilisers is prohibited**

19. (1) Subject to this article, the application of fertiliser to land is prohibited during the periods specified in Schedule 4.
- (2) Sub-article (1) shall come into effect on 1 August 2006 in relation to the application to land of a chemical fertiliser.
- (3) Sub-article (1) shall come into effect on 1 August 2006 in relation to the application to land of organic fertiliser –
  - (a) which did not arise on the holding, or
  - (b) which arose on the holding in the case of a holding on which there is in place on 1 August 2006 storage facilities in compliance with the storage capacity requirements prescribed by Articles 8 to 13.
- (4) In the case of a holding on which there is not in place on 1 August 2006 storage facilities in compliance with the storage capacity requirements prescribed by Articles 8 to 13, sub-article (1) shall, subject to sub-article (5), come into effect in relation to the application to land of organic fertiliser –
  - (a) in the case of a pig production holding, on 31 December 2006 or the day on which such storage facilities are put in place on that holding, whichever day first occurs, and
  - (b) in the case of any other holding, on 31 December 2008 or the day on which such storage facilities are put in place on that holding whichever day first occurs.
- (5) Notwithstanding sub-article (4), the application of organic fertiliser to land during the months of November and December is prohibited with effect from 1 August 2006.
- (6) Sub-articles (1) and (5) shall not apply in relation to the application to land of -
  - (a) soiled water, or
  - (b) chemical fertilisers to meet the crop requirements of Autumn-planted cabbage or of crops grown under permanent cover.

### **Limits on the amount of livestock manure to be applied**

20. (1) Subject to this article, the amount of livestock manure applied in any year to land on a holding, together with that deposited to land by livestock, shall not exceed an amount containing 170 kg of nitrogen per hectare.
- (2) For the purposes of sub-article (1), the amount of nitrogen produced by livestock and the nitrogen content of livestock manure shall be calculated in accordance with Tables 6, 7 and 8 of Schedule 2 except in the case of pig manure or poultry manure where a different amount is specified in a certificate issued in accordance with Article 32 in relation to that manure.
- (3) For the purposes of sub-article (1), the area of a holding shall be deemed to be the net area of the holding.

### **Ploughing and the use of non-selective herbicides**

21. (1) Where arable land is ploughed between 1 July and 15 January the necessary measures shall be taken to provide for emergence, within 6 weeks of the ploughing, of green cover from a sown crop.
- (2) Where grassland is ploughed between 1 July and 15 October the necessary measures shall be taken to provide for emergence by 1 November of green cover from a sown crop.
- (3) Grassland shall not be ploughed between 16 October and 30 November.
- (4) When a non-selective herbicide is applied to arable land or to grassland in the period between 1 July and 15 January the necessary measures shall be taken to provide for the emergence of green cover within 6 weeks of the application from a sown crop or from natural regeneration.
- (5) Where green cover is provided for in compliance with this article, the cover shall not be removed by ploughing or by the use of a non-selective herbicide before 15 January unless a crop is sown within two weeks of its removal.

## PART 5

### GENERAL

#### **General duty of occupier**

22. (1) An occupier of a holding shall ensure compliance with the provisions of these Regulations in relation to that holding.
- (2) An occupier of a holding shall, for the purposes of compliance with these Regulations, have regard to any advice or guidelines which may be issued from time to time for the purposes of these Regulations by the Minister, the Minister for Agriculture and Food or the Agency.

#### **Keeping of records by occupier**

23. (1) With effect from 1 August 2006, records shall be maintained for each holding which shall indicate -
- (a) total area of the holding,
  - (b) net area of the holding,
  - (c) cropping regimes and their individual areas,
  - (d) livestock numbers and type,
  - (e) an estimation of the annual fertiliser requirement for the holding and a copy of any Nutrient Management Plan prepared in relation to the holding,
  - (f) quantities and types of chemical fertilisers moved on to or off the holding, including opening stock, records of purchase and closing stock,
  - (g) livestock manure and other organic fertilisers moved on to or off the holding including quantities, type, dates and details of exporters and importers, as the case may be,
  - (h) the results of any soil tests carried out in relation to the holding,
  - (i) the nature and capacity of facilities on the holding for the storage of livestock manure and other organic fertilisers, soiled water and effluents from

dungsteads, farmyard manure pits or silage pits including an assessment of compliance with Articles 8 to 13,

- (j) the quantities and types of concentrated feedstuff fed to grazing livestock on the holding, and
  - (k) the location of any abstraction point of water used for human consumption from any surface watercourse, borehole, spring or well.
- (2) Where fertiliser is used on a holding and a certificate of the type mentioned in Article 15 or 20 was issued in relation to that fertiliser in accordance with Article 32, a copy of the certificate shall be retained and be available for inspection on the holding for a period of not less than five years from the expiry of validity of the certificate.
- (3) Records shall be prepared for each calendar year by 31 March of the following year and shall be retained for a period of not less than five years.

#### ***False or misleading information***

24. A person shall not compile information which is false or misleading to a material extent or furnish any such information in any notice or other document for the purposes of these Regulations.

#### ***Authorised person***

25. (1) In this article, "authorised person" means –
- (a) a person who is an authorised person for the purposes of section 28 of the Local Government (Water Pollution) Act, 1977 (No. 1 of 1977), or
  - (b) a person appointed under sub-article (12) to be an authorised person for the purposes of these Regulations.
- (2) An authorised person may for any purpose connected with these Regulations –
- (a) enter and inspect any premises for the purposes of performing a function under these Regulations or of obtaining any information which he or she may require for such purposes,



- (b) at all reasonable times, or at any time if he or she has reasonable grounds for believing that there is or may be a risk to the environment, or that an offence under these Regulations is being or is about to be committed, arising from the carrying on of an activity at a premises, enter any premises and bring onto those premises such other persons (including a member of the *Gárda Síochána*) or equipment as he or she may consider necessary, or
  - (c) at any time if he or she has reasonable grounds for suspecting there may be a risk to the environment, or that an offence under these Regulations is being or is about to be committed, involving the use of any vehicle halt and board the vehicle and require the driver of the vehicle to take it to a place designated by the authorised person, and such a vehicle may be detained at that place by the authorised person for such period as he or she may consider necessary.
- (3) An authorised person shall not enter into a private dwelling under this article unless one of the following conditions applies –
  - (a) the entry is effected with the consent of the occupier,
  - (b) the authorised person has given the occupier not less than 24 hours notice in writing of the intended entry, or
  - (c) the entry is authorised by a warrant issued under sub-article (7).
- (4) Whenever an authorised person enters any premises or boards any vehicle, under this article, he or she may –
  - (a) take photographs and carry out inspections, record information on data loggers, make tape, electrical, video or other recordings,
  - (b) carry out tests and make copies of documents (including records kept in electronic form) found therein and take samples,
  - (c) monitor any effluent, including trade effluent or other matter, which is contained in or discharged from a premises,
  - (d) carry out surveys, take levels, make excavations and carry out examinations of depth and nature of subsoil,

- (e) require that the premises or vehicle or any part of the premises or anything in the premises or vehicle shall be left undisturbed for a specified period,
- (f) require information from an occupier of the premises of any occupant of the vehicle or any person employed on the premises or any other person on the premises,
- (g) require the production of, or inspect, records (including records held in electronic form) or documents, or take copies of or extracts from any records or documents, and
- (h) remove and retain documents and records (including documents held in electronic form) for such period as may be reasonable for further examination

which the authorised person, having regard to all the circumstances, considers necessary for the purposes of exercising any function under these Regulations.

- (5) (a) An authorised person who, having entered any premises or boarded any vehicle pursuant to these Regulations, considers that a risk to the environment arises from the carrying on of an activity at the premises or involving the use of the vehicle, may direct the owner or occupier of the premises or the driver of the vehicle to take such measures as are considered by that authorised person to be necessary to remove that risk.
  - (b) If the owner, occupier or driver referred to in paragraph (a) fails to comply with a direction of an authorised person under this subsection, the authorised person may do all things as are necessary to ensure that the measures required under the direction are carried out and the costs incurred by him or her in doing any such thing shall be recoverable from the owner or occupier by him or her, or the person by whom he or she was appointed.
- (6) A person shall not –
- (a) refuse to allow an authorised person to enter any premises or board any vehicle or to bring any person or equipment with him or her in the exercise of his or her powers,
  - (b) obstruct or impede an authorised person in the exercise of any of his or her powers,

- (c) give to an authorised person information which is to his or her knowledge false or misleading in a material respect, or
  - (d) fail or refuse to comply with any direction or requirement of an authorised person.
- (7) (a) Where an authorised person in the exercise of his or her powers under this article is prevented from entering any premises, or if the authorised person has reason to believe that evidence related to a suspected offence under these Regulations may be present in any premises and that the evidence may be removed therefrom or destroyed, or if the authorised person has reason to believe that there is a significant immediate risk to the environment, the authorised person or the person by whom he or she was appointed may apply to the District Court for a warrant under this article authorising the entry by the authorised person onto or into the premises.
- (b) If, on application being made to the District Court under this article, the District Court is satisfied, on the sworn information of the authorised person that he or she has been prevented from entering a premises, the Court may issue a warrant authorising that person, accompanied, if the Court deems it appropriate by another authorised person or a member of the Garda Síochána, as may be specified in the warrant, at any time or times within one month from the date of the issue of the warrant, on production if so requested of the warrant, to enter, if need be by force, the premises concerned and exercise the powers referred to in sub-article (4) or (5).
- (8) An authorised person may, in the exercise of any power conferred on him or her by these Regulations involving the bringing of any vehicle to any place, or where he or she anticipates any obstruction in the exercise of any other power conferred on him or her by these Regulations, request a member of the Garda Síochána to assist him or her in the exercise of such a power and any member of the Garda Síochána to whom he or she makes such a request shall comply with this request.
- (9) Any certificate or other evidence given, or to be given, in respect of any test, examination or analysis of any sample shall, in relation to that sample, be evidence, without further proof, of the result of the test, examination or analysis unless the contrary is shown.

- (10) When exercising any power conferred on him or her by these Regulations an authorised person shall, if requested by any person affected, produce a certificate or other evidence of his or her appointment as an authorised person.
- (11) Where a member of the Garda Síochána has reasonable cause to suspect that a person has committed an offence under these Regulations the member may without warrant arrest the person.
- (12) A person may be appointed as an authorised person for the purposes of these Regulations by the Minister, the Minister for Agriculture and Food or the Agency.
- (13) In this article "premises" includes land whether or not there are any structures on the land.

### **Offences**

- 26
- (1) A person who contravenes a provision of Parts 2 to 5 of these Regulations is guilty of an offence and shall be liable on summary conviction to a fine not exceeding €3,000 or to imprisonment for a term not exceeding six months or, at the discretion of the court, to both such fine and such imprisonment.
  - (2) Where an offence under these Regulations has been committed by a body corporate and it is proved to have been so committed with the consent or connivance of or to be attributable to any neglect on the part of any person who, when the offence was committed, was a director, manager, secretary or other officer of the body corporate, or a person purporting to act in any such capacity, that person, as well as the body corporate, is guilty of an offence and liable to be proceeded against and punished as if guilty of the first-mentioned offence.
  - (3) Where the affairs of a body corporate or unincorporated body are managed by its members, sub-article (2) shall apply to the acts and defaults of a member in connection with the functions of management as if such a member were a director or manager of the body.
  - (4) A prosecution for an offence under these Regulations may be taken by a local authority or the Agency.
  - (5) A prosecution for an offence may be taken by a local authority whether or not the offence is committed in the functional area of the authority.
  - (6) Where a court imposes a fine or affirms or varies a fine imposed by another court for an offence under these Regulations,

prosecuted by the Agency or a local authority, it shall, on the application of the Agency or local authority concerned (made before the time of such imposition, affirmation or variation), provide by order for the payment of the amount of the fine to the Agency or local authority, as the case may be, and such payment may be enforced by the Agency or local authority, as the case may be, as if it were due to it on foot of a decree or order made by the court in civil proceedings.

- (7) Where a person is convicted of an offence under these Regulations the court shall, unless it is satisfied that there are special and substantial reasons for not so doing, order the person to pay to the Agency or local authority concerned the costs and expenses, measured by the court, reasonably incurred by the Agency or local authority in relation to the investigation, detection and prosecution of the offence, including costs incurred in the taking of samples, the carrying out of tests, examinations and analyses and in respect of the remuneration and other expenses of employees, consultants and advisers.

## PART 6

### FUNCTIONS OF PUBLIC AUTHORITIES

#### ***Minister for Agriculture and Food***

27. (1) The Minister for Agriculture and Food shall carry out, or cause to be carried out, such monitoring and evaluation programmes in relation to farm practices as may be necessary to determine the effectiveness of measures being taken in accordance with these Regulations.
- (2) The Minister for Agriculture and Food shall, in relation to each year, make the overall results of monitoring and evaluations carried out in accordance with sub-article (1) available to the Agency, to the Minister and, on request, to a local authority.
- (3) The Minister for Agriculture and Food shall prepare and keep updated a register of all holdings and shall, on request, make a copy of the register available to the Agency or a local authority.

#### ***Making and review of action programme by the Minister***

28. (1) The Minister shall, following consultation with the Minister for Agriculture and Food and other interested parties in accordance with this article, prepare and publish not later than 30 June 2009 and every four years thereafter, a programme of

measures (hereafter in this article referred to as "an action programme") for the protection of waters against pollution from agriculture.

- (2) An action programme required by sub-article (1) shall include all such measures as are necessary for the purposes of Article 5 of the Nitrates Directive and shall contain a review of the action programme most recently made for those purposes and of such additional measures and reinforced actions as may have been taken.
- (3) The Minister shall ensure that all interested parties are given early and effective opportunities to participate in the preparation, review and revision of an action programme required by this article and for this purpose shall -
  - (a) inform interested parties by public notices or other appropriate means including electronic media, in relation to any proposals for the preparation, review or revision of an action programme,
  - (b) make available to interested parties information in relation to the proposals referred to in paragraph (a) including information about the right to participate in decision-making in relation to those proposals,
  - (c) provide an opportunity for comment by interested parties before any decision is made on the establishment, review or revision of an action programme,
  - (d) in making any such decision, take due account of the comments made by interested parties and the results of the public participation, and
  - (e) having examined any comments made by interested parties, make reasonable efforts to inform those parties of the decisions taken and the reasons and considerations on which those decisions are based, including information on the public participation process.
- (4) The Minister shall ensure that such reasonable time is allowed as is sufficient to enable interested parties to participate effectively.
- (5) Where the Minister publishes any information in accordance with this article, the Minister shall -
  - (a) do so in such manner as the Minister considers appropriate for the purpose of bringing that information to the attention of the public, and

- (b) make copies of that information accessible to interested parties free of charge through a website or otherwise.
- (6) The Minister shall specify by way of public notice on a website or otherwise the detailed arrangements made to enable public participation in the preparation, review or revision of an action programme, including –
- (a) the address to which comments in relation to those proposals may be submitted, and
  - (b) the date by which such comments should be received.
- (7) In this article “interested parties” includes persons who -
- (a) are carrying on any business which relies upon the water environment or which is affected, or likely to be affected, by the action programme, or
  - (b) are carrying on any activities which have or are likely to have an impact on water status, or
  - (c) have an interest in the protection of the water environment whether as users of the water environment or otherwise.

### **Agency**

29. (1) The Agency shall prepare at four-yearly intervals a report in accordance with Article 10 of the Nitrates Directive and shall submit such report to the Minister.
- (2) The Agency shall undertake a review of progress made in implementing these Regulations and shall submit a report to the Minister by 31 December 2008 and every four years thereafter with the results of that review and with recommendations as to such additional measures, if any, as appear to be necessary to prevent and reduce water pollution from agricultural sources.
- (3) In preparing the reports required under sub-articles (1) and (2) the Agency shall consult with the Department of Agriculture and Food and the co-ordinating local authority in each river basin district, and such other persons as it considers appropriate.
- (4) The Department of Agriculture and Food and the relevant local authorities shall provide the Agency with such information appropriate to their functions as may be requested by the Agency for the purposes of these Regulations.

- (5) Each monitoring programme prepared by the Agency for the purposes of article 10 of European Communities (Water Policy) Regulations, 2003 (S.I. No. 722 of 2003) shall include provision for such monitoring as is necessary for the purposes of these Regulations.
- (6) The Agency may make recommendations and give directions to a local authority in relation to the monitoring and inspections to be carried out, or other measures to be taken, by the authority for the purposes of these Regulations.

### **Local authorities**

30. (1) A local authority shall carry out, or cause to be carried out, such monitoring of surface waters and groundwaters at selected measuring points within its functional area as makes it possible to establish the extent of pollution in the waters from agricultural sources and to determine trends in the occurrence and extent of such pollution.
- (2) A local authority shall carry out or cause to be carried out such inspections of farm holdings as is necessary for the purposes of these Regulations and shall aim to co-ordinate its inspection activities with inspections carried out by other public authorities.
- (3) For the purposes of sub-article (2) a local authority shall aim to develop co-ordination arrangements with other public authorities with a view to promoting consistency of approach in inspection procedures and administrative efficiencies between public authorities and to avoiding any unnecessary duplication of administrative procedures and shall have regard to any inspection protocol which may be developed by the Minister, following consultation with the Minister for Agriculture and Food.
- (4) A local authority shall, in the exercise of its functions for the purposes of these Regulations -
  - (a) consult to such extent as it considers appropriate with the Minister, the Minister for Agriculture and Food, the Agency, the co-ordinating local authority in the relevant river basin district and such other persons as it considers appropriate, and
  - (b) have regard to any recommendations made, and comply with any direction given, to the authority by the Agency in accordance with Article 29.
- (5) A local authority may furnish to the Department of Agriculture and Food and such other persons as it considers appropriate a



report of an inspection or inspections carried out for the purposes of these Regulations.

- (6) A local authority shall maintain a register of prior investigations carried out, and distances specified, for the purposes of Article 17(5).

### ***Compliance with Data Protection Acts***

31. The provision of information by a local authority, the Agency or the Minister for Agriculture and Food in accordance with Article 27, 29 or 30 of these Regulations shall not be a breach of the Data Protection Acts, 1988 and 2003.

### ***Certificate in relation to nutrient content of fertiliser***

32. (1) A certificate of the type specified in Article 15 or 20 may be issued by a competent authority where the authority is satisfied that the nutrient content of the fertiliser in question has been assessed on the basis of appropriate methodologies based on net farm balance and is as specified in the certificate.
- (2) A certificate issued under this article shall be valid for such period, not exceeding twelve months, as shall be specified in the certificate.
- (3) In this article "competent authority" means –
  - (a) the Agency in relation to fertiliser arising in an activity in relation to which there is in force a licence under Part IV of the Act of 1992, and
  - (b) the Minister for Agriculture and Food in relation to any other fertiliser.
- (4) Notice of the methodologies used for the purposes of sub-article (1) shall be notified to the European Commission by the competent authority.

### ***Exemption for exceptional circumstances for research***

33. (1) A temporary exemption from a requirement of these Regulations may be granted to a person by the Agency or the Minister for Agriculture and Food in the case of exceptional circumstances relating to research.

- (2) A temporary exemption for the purposes of sub-article (1) shall be granted by way of certificate issued to a person by the Agency or the Minister for Agriculture and Food and shall be subject to such conditions, if any, as are specified in the certificate.
- (3) A certificate issued for the purposes of this article shall specify the nature, extent and duration of the exemption to which the certificate relates and a copy of the certificate shall be sent as soon as may be to the relevant local authority.

### **Transitional provisions**

34. (1) A holding on which the application of fertilisers is carried out in accordance with a nutrient management plan approved on or before 1 December 2006 for the purposes of the Rural Environmental Protection Scheme shall be deemed to be compliant with the requirements of Article 16 for the duration of that plan.
- (2) Notwithstanding Articles 16 and 26, the application of nitrogen or phosphorus to land at any time prior to 30 October 2007 in quantities exceeding those prescribed by Article 16 shall not be an offence for the purposes of Article 16 in case where the nitrogen or phosphorus arises from an activity in relation to which there was in force on 30 April 2006 a licence under Part IV of the Act of 1992.
- (3) Notwithstanding Articles 16 and 26 and sub-article (2), the application to land prior to 1 January 2011 of phosphorus in excess of the quantities prescribed by Article 16 shall not be an offence for the purposes of Article 16 in a case where –
  - (a) the excess arises from the application of spent mushroom compost or manure produced by pigs or poultry,
  - (b) such compost or manure, as the case may be, is produced on a holding on which, on the making of these Regulations, activities were being carried on which gave rise to spent mushroom compost or manure from pigs or poultry and there has not been an increase in the scale of such activities on the holding subsequent to the making of these Regulations, and
  - (c) the occupier of the holding on which the phosphorus is applied to land holds records which demonstrate compliance with paragraphs (a) and (b).

## SCHEDULE 1

Article 3

### SOIL TEST

A soil test refers to the results of an analysis of a soil sample carried out by a soil-testing laboratory approved by Department of Agriculture and Food.

The analysis for Phosphorus and, where appropriate, organic matter content and the taking of soil samples shall be carried out in accordance with the procedures below.

#### **Analysis for Phosphorus**

The Morgan's extractable P test as detailed below shall be used to determine the Soil P Index.

#### *Preparation of soil sample*

The soil shall be dried at 40°C for at least 24 hours (longer if necessary to ensure complete drying) in a forced draught oven with moisture extraction facilities. It shall then be sieved through a 2 mm mesh screen to remove stones and plant debris. After thorough mixing, it shall be sub-divided to obtain a representative sample. Where large samples are received at the laboratory, the entire sample shall be dried and sieved prior to sub-sampling for analysis.

#### *Morgan's Extracting Solution*

Constituents:- 1,400 ml of 40% NaOH in approximately 15 litres of water. Add 1,440 ml of Glacial Acetic Acid. Make up to 20 litres with water and adjust pH to 4.8. The pH of the solution must be checked regularly and adjusted as necessary before use. A volume ratio of one part sieved soil to five parts of solution must be used, e.g. 6 ml of the prepared soil sample is extracted with a 30 ml volume of Morgan's Extracting Solution. The sample shall be shaken for 30 minutes to get a suitable mix and permit intended reaction, after which it is filtered through a No 2 Whatman filter paper into vials for analysis. The filtered extract shall be analysed using standard laboratory techniques.

Results shall be reported in mg per litre.

#### **Analysis of organic matter**

Organic Matter content shall be determined by loss on ignition.

Place a quantity of the prepared soil sample in an oven for 16 hours at 105 °C. Remove and cool in a desiccator. Put approximately 4g of this soil into a pre-weighed crucible and determine the weight of the soil (initial weight). Place in a muffle furnace at 500°C for 16 hours for ashing. Remove the

crucible, cool in a desiccator and determine the weight of the ash (final weight).

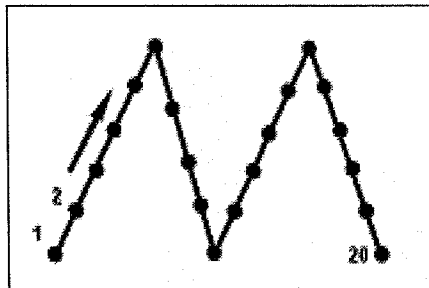
The organic matter of the soil is the difference in weight between the initial and final weights expressed as a percentage of the initial weight.

### Soil Sampling Procedure

The soil sample shall be taken in accordance with the procedure as specified below:

- a) The sampling area shall not exceed 4 hectares. Exceptionally, where soil types and cropping of lands were similar during the previous five years, a sample area of up to 12 hectares shall be deemed acceptable.
- b) Separate samples shall be taken from areas that are different in soil type, previous cropping history, slope, drainage or persistent poor yields.
- c) Any unusual spots such as old fences, ditches, drinking troughs, dung or urine patches or where fertiliser or lime has been heaped or spilled shall be avoided.
- d) A field shall not be sampled for phosphorus until 3 months after the last application of any fertiliser containing this nutrient (chemical or organic).
- e) The sampling pattern shown in the figure below shall be followed. A soil core shall be taken to the full 100 mm depth. 20 cores shall be taken from the sampling area and placed in the soil container to make up the sample. Ensure the container is full of soil.
- f) The field and sample numbers shall be written/attached onto the soil container.

Figure 1: Sampling pattern



## SCHEDULE 2

### CRITERIA AS TO STORAGE CAPACITY AND NUTRIENT MANAGEMENT

Article 7

**Table 1      Slurry storage capacity required for sows and pigs**

Unit type <i>Water:meal ratio changing for finishers only</i>	m <sup>3</sup> /week <sup>1</sup>				
	2.0:1	2.5:1	3.0:1	3.5:1	4.0:1
Breeding unit (per sow place)	-	-	-	-	0.174
Integrated unit (per sow place)	0.312	0.355	0.398	0.441	0.483
Finishing unit (per pig)	0.024	0.031	0.039	0.046	0.053

<sup>1</sup> An additional 200mm freeboard must be provided in all covered tanks and 300mm freeboard in all uncovered tanks. Allowance must also be made for net rainfall during the specified storage period for uncovered tanks.

Article 7

**Table 2      Slurry storage capacity required for cattle, sheep and poultry**

Livestock type	m <sup>3</sup> /week <sup>1</sup>
Dairy cow	0.33
Suckler cow	0.29
Cattle > 2 years	0.26
Cattle (18-24 months old)	0.26
Cattle (12-18 months old)	0.15
Cattle (6-12 months old)	0.15
Cattle (0-6 months old)	0.08
Lowland ewe	0.03
Mountain ewe	0.02
Lamb-finishing	0.01
Poultry - layers per 1000 birds (30% DM)	0.81

<sup>1</sup> An additional 200mm freeboard must be provided in all covered tanks and 300mm freeboard in all uncovered tanks. Allowance must also be made for net rainfall during the specified storage period for uncovered tanks.

**Table 3 Storage capacity required for dungstead manure**

Livestock type	Solid fraction (m <sup>3</sup> /week)	Seepage fraction (m <sup>3</sup> week) <sup>1</sup>
Dairy cow	0.28	0.04
Suckler cow	0.25	0.03
Cattle > 2 years	0.23	0.02
Cattle (18-24 months old)	0.23	0.02
Cattle (12-18 months old)	0.13	0.01
Cattle (6-12 months old)	0.13	0.01
Cattle (0-6 months old)	0.07	0.01

<sup>1</sup> Allowance must also be made for net rainfall during the specified storage period for uncovered tanks.

**Table 4 Average net rainfall during the specified storage period.**

County	Millimetres per week
Carlow	24
Cavan	27
Clare	32
Cork	37
Donegal	38
Dublin	17
Galway	34
Kerry	45
Kildare	18
Kilkenny	23
Laois	22
Leitrim	33
Limerick	26
Longford	23
Louth	20
Mayo	40
Meath	19
Monaghan	23
Offaly	20
Roscommon	26
Sligo	32
Tipperary	27
Waterford	31
Westmeath	21
Wexford	25
Wicklow	33

**Table 5 Storage capacity required for effluent produced by ensiled forage**

Crop	Minimum storage requirement (m <sup>3</sup> /100 tonnes)	
	Short Term Storage <sup>1</sup>	Full Storage
Grass	7	21
Arable silage	7	21
Maize	4	10
Sugar beet tops	15	50

<sup>1</sup> Only permitted where a vacuum tanker or an irrigation system is available on the holding.

Articles 13 and 20

**Table 6 Annual nutrient excretion rates for livestock**

Livestock type	Total Nitrogen	Total Phosphorus
	kg/year	kg/year
Dairy cow	85	13
Suckler cow	65	10
Cattle (0-1 year old)	24	3
Cattle (1-2 year old)	57	8
Cattle > 2 years	65	10
Mountain ewe & lambs	7	1
Lowland ewe & lambs	13	2
Mountain hogget	4	0.6
Lowland hogget	6	1
Goat	9	1
Horse (>3 years old)	50	9
Horse (2-3 years old)	44	8

Horse (1-2 years old)	36	6
Horse foal (< 1 year old)	25	3
Donkey/small pony	30	5
Deer (red) 6 months - 2 years	13	2
Deer (red) > 2 years	25	4
Deer (fallow) 6 months - 2 years	7	1
Deer (fallow) > 2 years	13	2
Deer (sika) 6 months - 2 years	6	1
Deer (sika) > 2 years	10	2
Breeding unit (per sow place)	35	8
Integrated unit (per sow place)	87	17
Finishing unit (per pig place)	9.2	1.7
Laying hen per bird place	0.56	0.12
Broiler per bird place	0.24	0.09
Turkey per bird place	1	0.4

Articles 15 and 20

**Table 7 Amount of nutrient contained in 1m<sup>3</sup> of slurry**

Livestock type	Total Nitrogen (kg)	Total Phosphorus (kg)
Cattle	5.0	0.8
Pig	4.2	0.8
Sheep	10.2	1.5
Poultry – layers 30% DM	13.7	2.9

For the purposes of calculation, assume that 1m<sup>3</sup> = 1000 litres = 1 tonne.



**Table 8 Amount of nutrients contained in 1 tonne of organic fertilisers other than slurry**

Livestock type		Total Nitrogen (kg)	Total Phosphorus (kg)
Poultry manure	broilers/deep litter	11.0	6.0
	layers 55% dry matter	23.0	5.5
	Turkeys	28.0	13.8
Dungstead manure (cattle)		3.5	0.9
Farmyard manure		4.5	1.2
Spent mushroom compost		8.0	2.5
Sewage sludge		Total nitrogen & total phosphorus content per tonne shall be as declared by the supplier in accordance with the Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 and any subsequent amendments thereto.	
Dairy processing residues and other products not listed above		Total nitrogen & total phosphorus content per tonne based on certified analysis shall be provided by the supplier	

Article 15

**Table 9 Nutrient availability in fertilisers**

Fertiliser	Availability <sup>1</sup> (%)			
	Nitrogen			Phosphorus
	From Jan 1 2007	From Jan 1 2008	From Jan 1 2010	From Jan 1 2007
Chemical	100	100	100	100
Pig and poultry manure	35	40	50	100
Farmyard manure	20	25	30	100
Spent mushroom compost	35	40	45	100
Cattle and other livestock manure (including that produced on the holding)	30	35	40	100

<sup>1</sup>Refers to year of application



**Table 11 Phosphorus index system**

Soil phosphorus index	Soil phosphorus ranges (mg/l)	
	Grassland	Other crops
1	0.0 – 3.0	0.0 - 3.0
2	3.1 – 5.0	3.1 - 6.0
3	5.1 – 8.0	6.1- 10.0
4	> 8.0	>10.0

**Table 12 Annual maximum fertilisation rates of available nitrogen on grassland**

Grassland stocking rate <sup>1</sup> (kg/ha/year)	Available nitrogen <sup>2</sup> (kg/ha)
≤ 170	226
Grassland stocking rate greater than 170 kg/ha/year <sup>3</sup>	
171-210	306
211-250	279

<sup>1</sup> Total annual nitrogen (kg) excreted by grazing livestock averaged over the net grassland area (ha) (grazing and silage area). Stocking rate refers to grassland area only.

<sup>2</sup> The maximum nitrogen fertilisation of grassland shall not exceed that specified for stocking rates less than or equal to 170 kg/ha/year unless a minimum of 5% of the net area of the holding is used to grow crops other than grass.

<sup>3</sup> This table does not imply any departure from Article 20(1) which prohibits the application to land on a holding of livestock manure in amounts which exceed 170kg Nitrogen per hectare per year, including that deposited by the animals themselves.

**Table 13 Annual maximum fertilisation rates of phosphorus on grassland**

Grassland stocking rate <sup>1</sup> (kg/ha/year)	Phosphorus Index			
	1	2	3	4
	Available Phosphorus (kg/ha) <sup>2, 3</sup>			
≤ 130	35	25	15	0
131 -170	39	29	19	0
Grassland stocking rate greater than 170 kg/ha/year <sup>4, 5</sup>				
171-210	44	34	24	0
211-250	49	39	29	0
<p><sup>1</sup>. Total annual nitrogen (kg) excreted by grazing livestock averaged over the net grassland area (grazing and silage area). Stocking rate refers to grassland area only.</p> <p><sup>2</sup>. The fertilisation rates for soils which have more than 20% organic matter shall not exceed the amounts permitted for Index 3 soils.</p> <p><sup>3</sup>. Manure produced by grazing livestock on a holding may be applied to Index 4 soils on that holding in a situation where there is a surplus of such manure remaining after the phosphorus fertilisation needs of all crops on soils at phosphorus indices 1, 2 or 3 on the holding have been met by the use only of such manure produced on the holding.</p> <p><sup>4</sup>. The maximum phosphorus fertilisation of grassland shall not exceed that specified for stocking rates less than or equal to 170 kg/ha/year unless a minimum of 5% of the net area of the holding is used to grow crops other than grass.</p> <p><sup>5</sup>. This table does not imply any departure from Article 20(1) which prohibits the application to land on a holding of livestock manure in amounts which exceed 170kg Nitrogen per hectare per year, including that deposited by the animals themselves.</p>				

**Table 14 Annual maximum fertilisation rates of available nitrogen on grassland (cut only, no grazing livestock on holding)**

	Available nitrogen (kg/ha)
1 <sup>st</sup> cut	125
Subsequent cuts	100
Hay	80

**Table 15 Annual maximum fertilisation rates of phosphorus on grassland (cut only, no grazing livestock on holding)**

	Phosphorus Index			
	1	2	3	4
	Available Phosphorus (kg/ha) <sup>1</sup>			
First cut	40	30	20	0
Subsequent cuts	10	10	10	0

<sup>1</sup> The fertilisation rates for soils which have more than 20% organic matter shall not exceed the amounts permitted for Index 3 soils.

**Table 16 Maximum fertilisation rates of nitrogen on tillage crops**

Crop	Nitrogen Index			
	1	2	3	4
	Available Nitrogen (kg/ha)			
Winter Wheat <sup>1</sup>	190	140	100	60
Spring Wheat <sup>1, 2</sup>	140	110	75	40
Winter Barley <sup>1</sup>	160	135	100	60
Spring Barley <sup>1</sup>	135	100	75	40
Winter Oats <sup>1</sup>	145	120	85	45
Spring Oats <sup>1</sup> )	110	90	60	30
Sugar Beet	195	155	120	80
Fodder Beet	195	155	120	80
Potatoes: Main crop	170	145	120	95
Potatoes: Early	155	130	105	80
Potatoes: Seed	155	130	105	80
Maize	180	140	110	75
Field Peas/Beans	0	0	0	0
Oilseed Rape	225	180	160	140
Linseed	75	50	35	20
Swedes/Turnips	90	70	40	20
Kale	150	130	100	70
Forage Rape	130	120	110	90

<sup>1</sup> Where proof of higher yields is available, an additional 20kg N/ha may be applied for each additional tonne above the following yields;

Winter Wheat - 9.0 tonnes/ha	Spring Wheat - 7.5 tonnes/ha
Winter Barley - 8.5 tonnes/ha	Spring Barley - 7.5 tonnes/ha
Winter Oats - 7.5 tonnes/ha	Spring Oats - 6.5 tonnes/ha

The higher yields shall be based on the best yield achieved in any of the three previous harvests, at 20% moisture content.

<sup>2</sup> Where milling wheat is grown under a contract to a purchaser of milling wheat an extra 30 kg N/ha may be applied

Article 16

**Table 17 Maximum fertilisation rates of phosphorus on tillage crops**

Crop	Phosphorus Index			
	1	2	3	4
	Available Phosphorus (kg/ha) <sup>1</sup>			
Winter Wheat	45	35	25	0
Spring Wheat	45	35	25	0
Winter Barley	45	35	25	0
Spring Barley	45	35	25	0
Winter Oats	45	35	25	0
Spring Oats	45	35	25	0
Sugar Beet	70	55	40	20
Fodder Beet	70	55	40	20
Potatoes: Main crop	125	100	75	50
Potatoes: Early	125	115	100	50
Potatoes: Seed	125	115	100	85
Maize	70	50	40	0
Field Peas	40	25	20	0
Field Beans	50	40	20	0
Oil Seed Rape	35	30	20	0
Linseed	35	30	20	0
Swedes/Turnips	70	60	40	40
Kale	60	50	30	0
Forage Rape	40	30	20	0

<sup>1</sup> The fertilisation rates for soils which have more than 20% organic matter shall not exceed the amounts permitted for Index 3 soils.

**Table 18** Maximum fertilisation rates of nitrogen on vegetable crops

Crop	Nitrogen Index				Maximum additional supplementation (Top dressing)
	1	2	3	4	
	<b>Available Nitrogen (kg/ha)</b>				
Asparagus (Establishment)	140	115	95	70	
Asparagus (After harvest)	100	100	100	100	
Broad Beans	0	0	0	0	
French Beans	90	85	75	70	
Beetroot	140	125	105	90	
Brussels Sprouts	120	115	105	100	180
Spring Cabbage	50	35	15	0	250
Other Cabbage	150	135	115	100	100
Broccoli	120	110	100	90	20
Cauliflower (Winter & Spring)	75	50	25	0	150
Cauliflower (Summer & Autumn)	120	80	40	0	120
Carrots	90	75	55	40	
Celery	120	85	65	50	180
Courgettes	140	125	105	90	
Leeks	100	90	80	70	100
Lettuce	100	90	80	70	50
Onions	70	60	50	40	70
Scallions	90	80	70	60	60
Parsley	100	80	60	40	150
Parsnip	100	85	70	50	50
Peas (Market)	0	0	0	0	
Rhubarb	100	90	80	70	200
Spinach	140	125	105	90	100
Swede (Horticultural)	70	45	25	0	
Swede (Transplanted crops)	80	52	29	0	

**Table 19 Maximum fertilisation rates of phosphorus on vegetable crops**

Crop	Phosphorus Index			
	1	2	3	4
	Available Phosphorus (kg/ha) <sup>1</sup>			
Asparagus (Establishment)	40	25	15	10
Asparagus (Maintenance)	27	17	10	7
Broad Beans	60	45	35	20
French Beans	60	45	35	20
Beetroot	60	45	35	20
Brussels Sprouts	60	45	35	20
Spring Cabbage	60	45	35	20
Other Cabbage	60	45	35	20
Broccoli	60	45	35	20
Cauliflower (Winter & Spring)	60	45	35	20
Cauliflower (Autumn)	60	45	35	20
Carrots	60	45	35	20
Celery	88	65	55	28
Courgettes	60	45	35	20
Leeks	60	45	35	20
Lettuce	60	45	35	20
Onions	60	45	35	20
Scallions	60	45	35	20
Parsley	60	45	35	20
Parsnip	60	45	35	20
Peas (Market)	60	45	35	20
Rhubarb	60	45	35	20
Spinach	60	45	35	20
Swede	70	60	45	35

<sup>1</sup> The fertilisation rates for soils which have more than 20% organic matter shall not exceed the amounts permitted for Index 3 soils.



**Table 20 Annual maximum fertilisation rates of nitrogen on fruit/soft fruit crops**

	Available Nitrogen (kg/ha)
Apples (Desert)	30
Apples (Culinary)	60
Pears	50
Cherries	70
Plums	70
Blackcurrants	80
Gooseberries	40
Raspberries	60
Strawberries	0
Redcurrants	60
Loganberries	50
Blackberries	50

**Table 21 Annual maximum fertilisation rates of phosphorus on fruit/soft fruit crops**

	Phosphorus Index			
	1	2	3	4
	Available Phosphorus (kg/ha) <sup>1</sup>			
Apples (Desert)	25	16	12	8
Apples (Culinary)	20	12	10	8
Pears	16	8	4	0
Cherries	16	8	4	0
Plums	16	8	4	0
Blackcurrants	20	16	12	8
Gooseberries	20	16	12	8
Raspberries	20	16	12	8
Strawberries	16	8	4	0
Redcurrants	20	16	12	8
Loganberries	20	16	12	8
Blackberries	20	16	12	8

<sup>1</sup> The fertilisation rates for soils which have more than 20% organic matter shall not exceed the amounts permitted for Index 3 soils.

### SCHEDULE 3

*Articles 9, 10, 12*

#### STORAGE PERIODS FOR LIVESTOCK MANURE

1. The storage period specified for the purposes of Articles 9(2), 10(2) and 12 is—
  - (a) 16 weeks in relation to holdings in counties Carlow, Cork, Dublin, Kildare, Kilkenny, Laois, Offaly, Tipperary, Waterford, Wexford and Wicklow;
  - (b) 18 weeks in relation to holdings in counties Clare, Galway, Kerry, Limerick, Longford, Louth, Mayo, Meath, Roscommon, Sligo and Westmeath;
  - (c) 20 weeks in relation to holdings in counties Donegal and Leitrim, and
  - (d) 22 weeks in relation to holdings in counties Cavan and Monaghan.
2. Where a holding lies partly in one county and partly in one or more other counties, the holding shall be deemed for the purposes of this Schedule to lie wholly within the county in relation to which the longest storage period is specified by paragraph 1.

### SCHEDULE 4

*Articles 13, 17 and 19*

#### PERIODS WHEN APPLICATION OF FERTILISERS TO LAND IS PROHIBITED

1. In counties Carlow, Cork, Dublin, Kildare, Kilkenny, Laois, Offaly, Tipperary, Waterford, Wexford and Wicklow, the period during which the application of fertilisers to land is prohibited is the period from —
  - (a) 15 September to 12 January in the case of the application of chemical fertiliser
  - (b) 15 October to 12 January in the case of the application of organic fertiliser (other than farmyard manure)

- (c) 1 November to 12 January in the case of the application of farmyard manure.
2. In counties Clare, Galway, Kerry, Limerick, Longford, Louth, Mayo, Meath, Roscommon, Sligo and Westmeath, the period during which the application of fertilisers to land is prohibited is the period from –
- (a) 15 September to 15 January in the case of the application of chemical fertiliser
  - (b) 15 October to 15 January in the case of the application of organic fertiliser (other than farmyard manure)
  - (c) 1 November to 15 January in the case of the application of farmyard manure.
3. In counties Cavan, Donegal, Leitrim and Monaghan, the period during which the application of fertilisers to land is prohibited is the period from –
- (a) 15 September to 31 January in the case of the application of chemical fertiliser
  - (b) 15 October to 31 January in the case of the application of organic fertiliser (other than farmyard manure)
  - (c) 1 November to 31 January in the case of the application of farmyard manure.

Given under the Official Seal of the Minister for  
the Environment, Heritage and Local  
Government this 18<sup>th</sup> day of July 2006

L.S.

DICK ROCHE

Minister for the Environment, Heritage and  
Local Government

## Explanatory Note

These Regulations revoke, and re-enact with amendments, the European Communities (Good Agricultural Practice for Protection of Waters) Regulations, 2005 (S.I. No. 788 of 2005). These Regulations come into effect generally on 1 August 2006 with later commencement dates for certain provisions.

These Regulations provide statutory support for good agricultural practice to protect waters against pollution from agricultural sources and include measures such as –

- set periods when land application of fertilisers is prohibited
- limits on the land application of fertilisers
- storage requirements for livestock manure, and
- monitoring of the effectiveness of the measures in terms of agricultural practice and impact on water quality.

The Regulations give further effect to several EU Directives including Directives in relation to protection of waters against pollution from agricultural sources (“the Nitrates Directive”), dangerous substances in water, waste management, protection of groundwater, public participation in policy development and water policy (the Water Framework Directive).

APPENDIX NO. 21

VERMIN CONTROL  
REGISTER

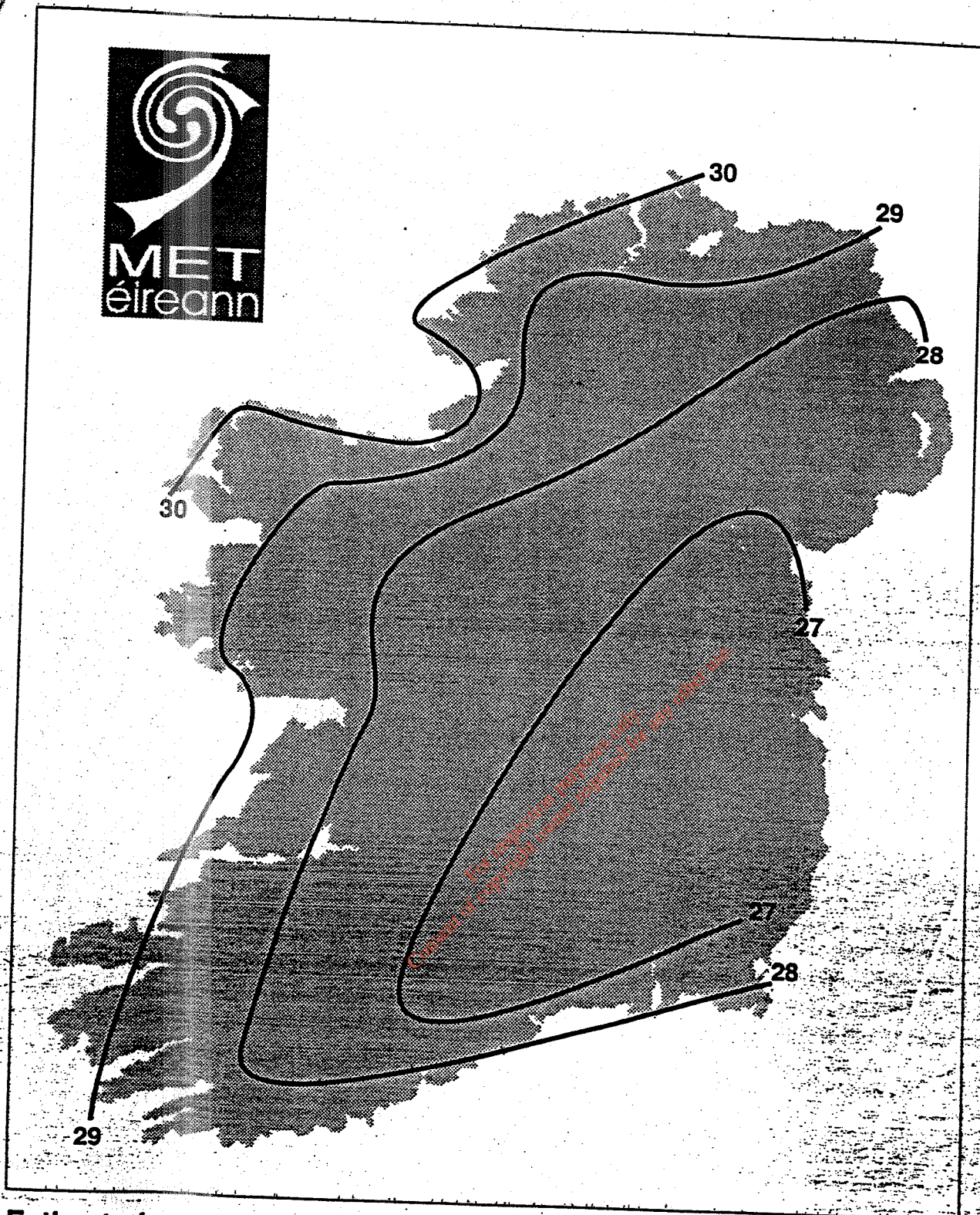
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APPENDIX NO. 22

CLIMATOLOGY REPORT

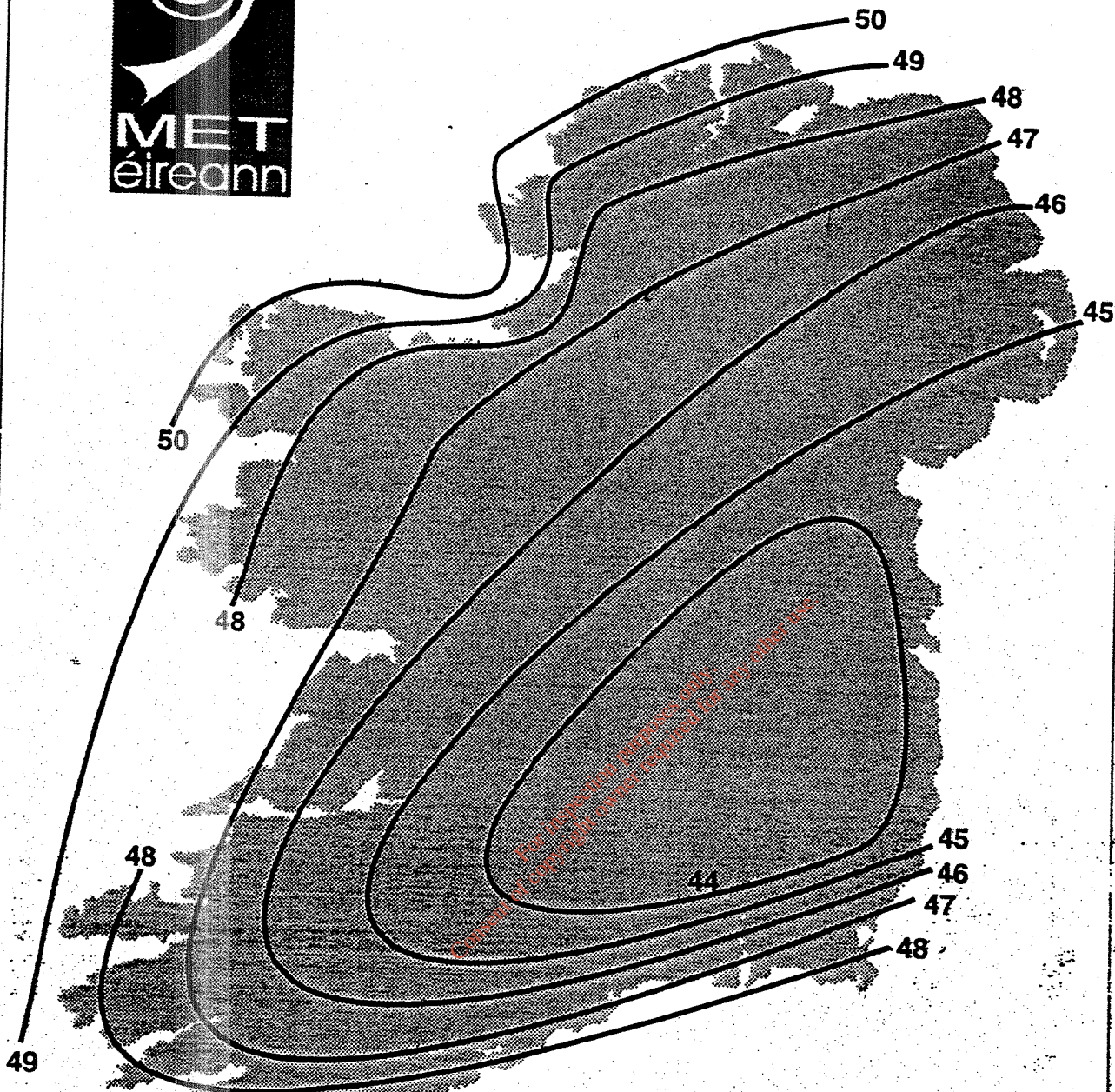
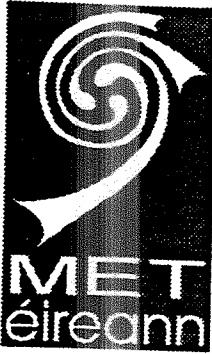
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**Estimated maximum 10-minute mean wind speed (*m/s*) with return period 50 years. Valid for a height of 10m. above terrain of category II (farmland with boundary hedges, occasional small farm structures, houses or trees).**

- Notes: (1) Terrain of category II is now the standard for Eurocodes. Maps published by Met Éireann prior to 1993 used open, level country (category I) as standard. This category II map of 10-minute mean wind speed is some 8% lower.  
(2) For sites on the south, west and north coasts increase by 8 to 10%.





**Estimated maximum gust speed (m/s) with return period 50 years.  
Valid for a height of 10m. above open level country.**

Note: For sites on the south, west and north coasts increase by 2%.



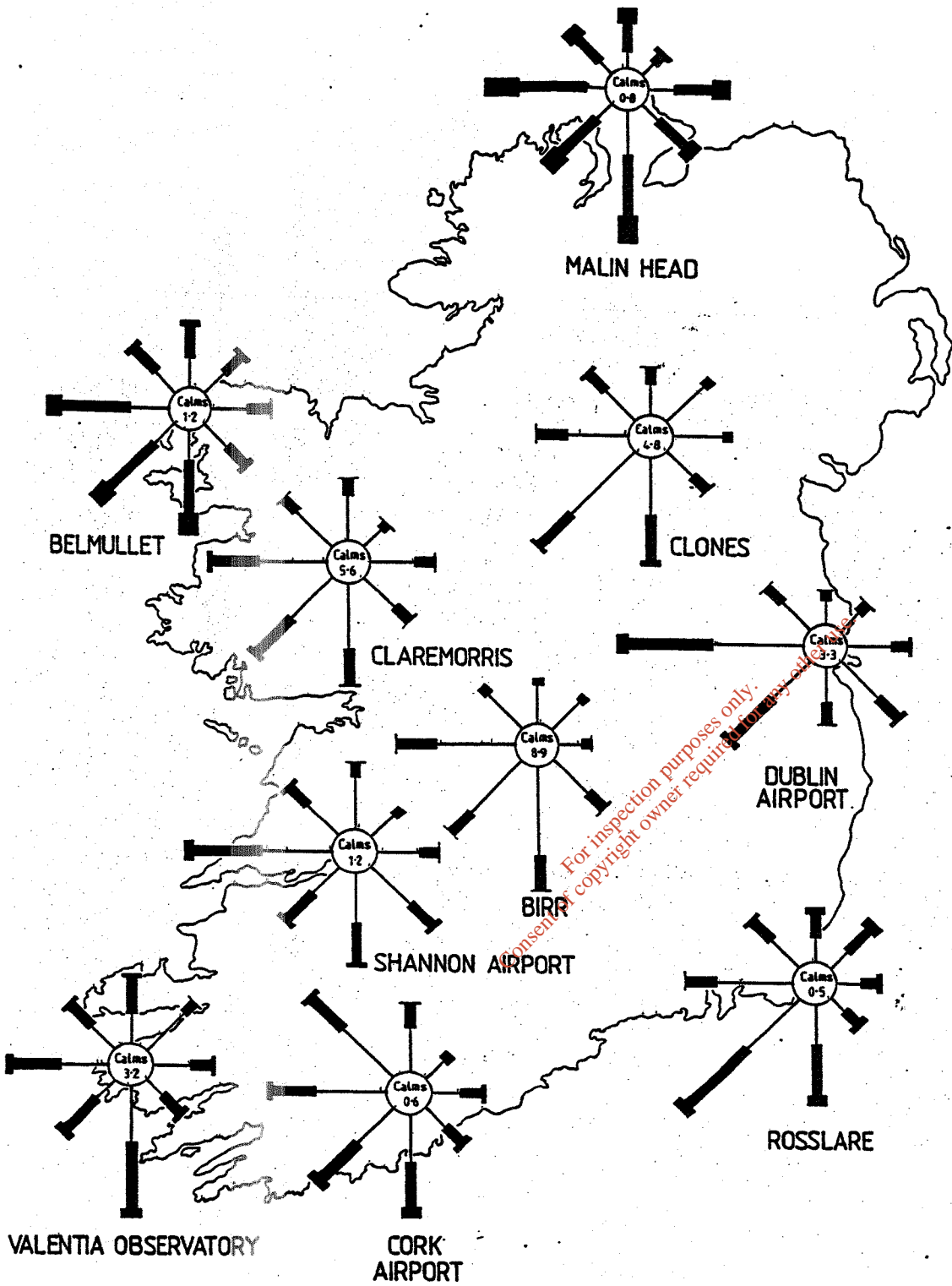
# KILKENNY

monthly and annual mean and extreme values  
1961-1990

lat. 52° 39' N  
long. 7° 16' W  
height 66 metres above mean sea level

TEMPERATURE (degrees Celsius)	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec	year
mean daily max.	7.7	7.9	10.0	12.4	15.1	18.1	19.9	19.6	17.2	13.9	10.1	8.4	13.4
mean daily min.	1.4	1.6	2.3	3.4	5.6	8.4	10.4	9.9	7.9	6.1	2.8	2.1	5.2
mean	4.6	4.8	6.1	7.9	10.3	13.3	15.2	14.7	12.6	10.0	6.4	5.3	9.3
absolute max.	14.1	15.1	18.5	23.5	26.0	31.5	31.4	30.5	25.6	22.2	17.4	14.8	31.5
absolute min.	-14.1	-11.1	-7.9	-5.4	-3.7	0.5	2.3	1.2	-1.6	-4.4	-7.0	-10.8	-14.1
mean no. of days with air frost	10.8	8.7	7.4	4.1	0.8	0.0	0.0	0.0	0.4	2.0	8.4	10.5	53.0
mean no. of days with ground frost	18.2	14.9	14.3	12.4	7.3	2.0	0.4	0.8	3.4	6.8	14.2	16.8	111.5
RELATIVE HUMIDITY (%)													
mean at 0900UTC	88	87	85	79	76	76	78	82	85	88	89	89	84
mean at 1500UTC	80	74	68	64	64	65	65	66	69	76	78	82	71
SUNSHINE (hours)													
mean daily duration	1.71	2.29	3.32	4.85	5.47	5.15	4.65	4.50	3.82	2.71	2.22	1.48	3.51
greatest daily duration	8.2	9.7	12.1	14.0	15.8	16.3	16.0	14.2	11.8	10.2	9.0	7.3	16.3
mean no. of days with no sun	11	8	6	2	2	2	2	2	3	6	9	12	65
RAINFALL (mm)													
mean monthly total	86.3	66.1	63.9	51.4	61.9	50.5	52.5	69.4	73.5	84.9	73.8	88.6	822.8
greatest daily total	31.5	32.3	29.9	24.5	23.9	30	66.4	49.8	30	34.6	29	45.8	66.4
mean no. of days with >= 0.2mm	19	15	17	15	17	14	13	15	15	18	17	18	192
mean no. of days with >= 1.0mm	15	11	12	10	12	10	9	11	11	13	12	13	137
mean no. of days with >= 5.0mm	7	5	5	4	5	4	3	4	5	6	5	6	58
WIND (knots)													
mean monthly speed	7.4	7.4	7.7	6.7	6.4	5.8	5.6	5.6	5.9	6.4	6.4	7.1	6.5
max. gust	77	72	60	53	54	45	46	56	65	74	56	65	77
max. mean 10-minute speed	44	39	36	33	32	28	27	29	40	45	35	40	45
mean no. of days with gales	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	1.4
WEATHER (mean no. of days with...)													
snow or sleet	5.1	5.0	3.1	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.5	2.6	17.3
snow lying at 0900UTC	1.7	1.5	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	4.1
hail	1.1	1.0	2.7	2.4	1.3	0.5	0.1	0.1	0.1	0.3	0.4	0.3	10.4
thunder	0.1	0.1	0.2	0.4	0.8	0.9	1.1	0.8	0.3	0.2	0.0	0.1	5.0
fog	4.6	2.9	2.3	2.0	2.4	2.3	2.6	4.6	5.6	5.9	4.3	4.9	44.4

Frequency of simultaneous occurrence of specified ranges of wind speed and direction, 1962-1984.



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Scale of frequency 0 5 10 15 20 25%

Scale of speed 0-3 to 5-4 5-5 to 10-7 10-8 or more metres/sec  
 Beaufort force 1 to 3 4 & 5 6 or more

WOODVILLE PIG FARMS LTD

APPENDIX NO. 23

DEVELOPMENT OF NATIONAL  
PIG INDUSTRY

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Teagasc

Teagasc have appointed an additional full-time researcher to meet the research needs in production areas unique to Ireland. Teagasc are committed to providing two additional pig advisers to service existing clients and provide the necessary support for new and expanding units. Training of new entrants to the pig industry starts primarily at agricultural colleges. Each agricultural student will be encouraged to take a 2.5-hour module in pig production. Training courses in personnel management which are needed by many of the managing staff working in large pig units will be developed.

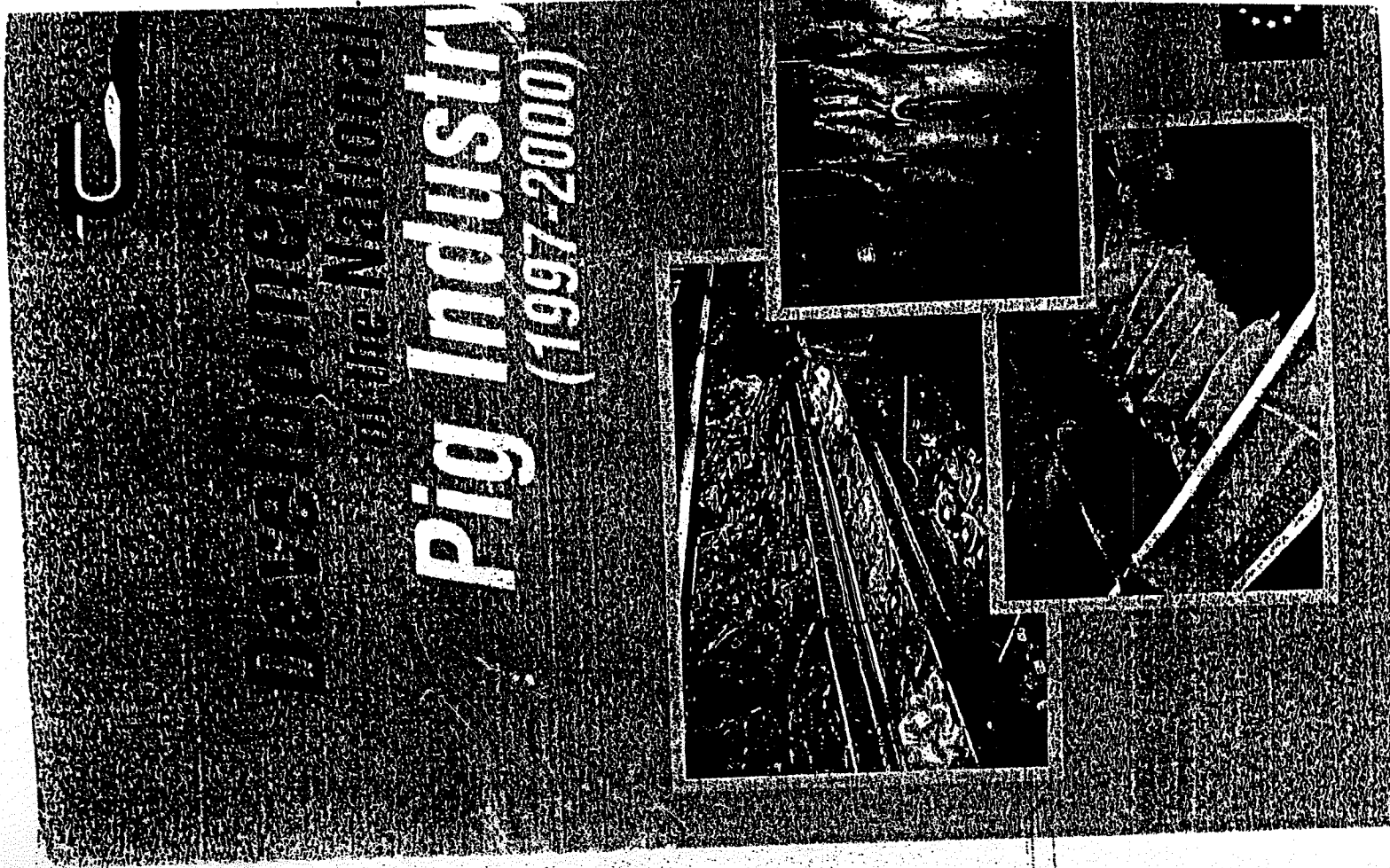
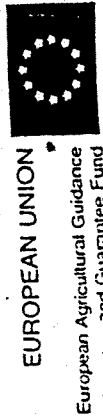
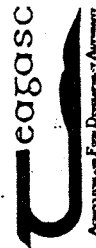


### Teagasc Pig Advisers

ADVISER	COUNTIES	ADDRESS	TELEPHONE
			041-33006
			091-844473
			0503-21267/21305
			0503-21267/21305
			053-33344

### Teagasc Pig Researchers

NAME	ADDRESS	TELEPHONE NUMBER



# Pig Industry (1997-2000)

## Development of the National Pig Industry 1997-2000



Irish pig output is increasing steadily. Output grew from 2.1m pigs in 1987 to approximately 3.25m pigs in 1996. The farmgate pig value accounted for almost 10% of the output value of all livestock and livestock products in 1996.

Increasing pig output further is of national importance for a number of reasons:

- One million extra pigs produced would create over 2,000 extra jobs. This would provide well paid, permanent employment in rural areas.
- All increased pig output would be exported, earning an estimated extra £150m per year.
- Significant market opportunities are likely to arise for Irish pigmeat in the EU market over the next few years as a reduction in pigmeat production in some other EU countries is likely to occur.

The Teagasc document "Development of the National Pig Industry (1997-2000)" identifies the critical issues in the sectors of relevance to the Irish pig industry. The following commitments are needed by each of the key sectors to ensure that continued development of the industry is obtained.

## The Producer

- The average breeding herd size in Ireland is the largest in the EU providing a good base for expansion.
- Expansion of sow numbers is possible because it is profitable and because there are no quota restrictions on pig numbers. However it is unwise to develop sow units with more than approx. 500 sows.
- To ensure that top class operatives continue to enter the industry working conditions and pay rates must be attractive.
- Maintain a high pig herd health status and use the Teagasc Pig Evaluation Programme when selecting sires. This will ensure maximum feed conversion efficiency and carcase quality.
- Pig manure must be managed carefully to protect the environment. Look to tillage areas to expand pig production.
- Comply with welfare regulations on dry sow housing and stocking rates for growing pigs.

## Feed Compounders

- Issue digestibility values for essential amino acids and phosphorus in feeds to more closely match nutrient requirement at different growth stages. This would reduce nitrogen and phosphorus in pig manure.
- List the feed ingredients used in pig diets in descending order.
- Check imported raw materials carefully before inclusion in pig diets.



## The Processor and the Slaughterhouse

- Slaughterhouses must implement an Integrated Quality Control Scheme to guarantee product safety and traceability.
- Food safety is of paramount importance. Slaughterhouses and processors must liaise closely with producers and wholesalers on all aspects of food safety.



- Orderly slaughtering of pigs is essential. Planned expansion in pig output requires additional capital investment to cater for the increase in throughput, particularly in the North Eastern part of the country.
- Constant liaison of pig processors with pig producers is essential. Producers should receive regular summaries of pigs delivered showing average weight, lean meat percentage and weight range. Processors should discuss with producers future changes in carcase weight, quality and type of pig required by the market.

## The Department of Agriculture, Food and Forestry

- Ireland is free of many serious diseases which are now endemic in Europe. A computerised system of recording health problems on slaughter line by veterinary inspectors should be introduced to reduce less serious pig ailments and reports returned to each producer.
- A scheme to eradicate Aujeszky's disease over a three year period should be introduced.
- A number of EU member states employ a Net Energy System to evaluate feed ingredients. This system should be introduced to Ireland allowing compounders to declare the energy level in pig feeds.