



**An Roinn Talmhaíochta,
Bia agus Mara**
Department of Agriculture,
Food and the Marine



**An Roinn Tithíochta, Pleanála
agus Rialtais Áitiúil**
Department of Housing, Planning
and Local Government



NITRATES EXPLANATORY HANDBOOK

for

*Good Agricultural Practice for the Protection of
Waters Regulations 2018*

Important Note

The information contained in this revised Handbook is being provided as a guide to farmers and should not be regarded as a legal interpretation of the **Regulations**.

Statutory Instrument S.I. No. 605 of 2017 [European Union (Good Agricultural Practice for Protection of Waters) **Regulations** 2017] is available at:

<http://www.irishstatutebook.ie/eli/2017/si/605/made/en/print>

Statutory Instrument S.I. No.65 of 2018 [European Union (Good Agricultural Practice for Protected of Waters) (Amendment) **Regulations** 2018] is also available at:

<http://www.irishstatutebook.ie/eli/2018/si/65/made/en/print>

Nitrates, Biodiversity & Engineering Division
Department of Agriculture, Food and the Marine,
Johnstown Castle,
Co. Wexford.

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Introduction



Water Quality and Agriculture

The Nitrates Directive, implemented by means of the Nitrates Action Programme (NAP), is the key agricultural measure in Ireland's River Basin Management Plan for preventing and reducing water pollution from nutrients (nitrogen and phosphorus) arising from agricultural sources.

Ireland's NAP is recognised across the EU as one of the most comprehensive and robust national programmes across the Union. However, despite significant initial improvements in water quality in response to the NAP since its commencement in 2006, further improvements have not been observed over recent years. Conclusions from the Environmental Protection Agency's (EPA) national assessment of water quality, covering the years 2010 - 2015, include-

- The quality of surface water and groundwater has remained relatively stable.
- There has been a failure to meet the planned national target of 13% improvement in water status for the six year period.
- That while the most polluted sites have been greatly reduced, there has been a decline in high quality water sites.
- 43% of monitored river waterbodies had a less than good ecological status, this equates to 1,015 river water bodies.

Ireland's fourth NAP (contained in the Good Agricultural Practice for Protection of Waters Regulations 2017), effective for 2018-2021, takes account of the agricultural pressures on water quality. It provides new measures focusing on intercepting and breaking the pathways that transport nitrogen, phosphorus and sediment from farmland to waters. It addresses soil fertility problems to improve nutrient use efficiency and productivity for the achievement of sustainable intensification objectives under Food Wise 2025. Furthermore under the fourth NAP there is simplification of the regulations for improved understanding and implementation.

Taking account of the water quality improvement objectives in Ireland's River Basin Management Plan, it is crucial that implementation at farm level of the fourth NAP takes place over 2018-2021.

What is this Handbook and who is it for?

Ireland's first Nitrates Action Programme under the Nitrates Directive came into operation in 2006. **Regulations** were introduced to put this Action Programme into law. A second Action Programme was finalised in 2010. A third Action Programme was finalised in 2014 and the fourth Action Programme has been agreed and given legal effect by ***Good Agricultural Practice for Protection of Waters Regulations 2017 (S.I. No. 605 of 2017)*** and ***Good Agricultural Practice for Protection of Waters Amendment Regulations 2018 (S.I. no 65 of 2018)***. In this Handbook, these are called the **Regulations**.

This Handbook is meant to explain the 2017 **Regulations** directly to farmers in a clear and straightforward way. The **Regulations** are available on the Department of Agriculture, Food and the Marine website, and it is recommended that you also read the **Regulations** to understand the specific detail contained in them.

Remember that if you apply for the **Basic Payment Scheme**, the **Regulations** are also part of cross-compliance. Not only will you be breaking the law if you do not follow them, you will also be putting your Basic Payment, Areas of Natural Constraint (ANC), GLAS, and other co-funded scheme payments at risk. That is why it is very important to understand the **Regulations** and know exactly how they apply to you, and what to do on your farm.

Starting overleaf, there is detailed information explaining how you can follow the **Regulations** on your farm. For some farmers this will be fairly straightforward, but others may need to consult their Cross Compliance FAS (*Farm Advisory Service*) advisor/consultant if they **are unsure about any aspect of the Regulations**.

What is the Purpose of the Regulations?

The purpose of the **Regulations** is to provide a basic set of measures to ensure the protection of waters, including drinking water sources, against pollution caused by nitrogen and phosphorus from agricultural sources, with the primary emphasis on the management of livestock manures and other fertilisers. The set of measures also provide some basic safeguards against possible harmful impacts on water quality arising from agricultural expansion.

What are the main elements of the Regulations?

While the **Regulations** are explained in some detail later in this Handbook the main points are as follows:

You must not spread livestock manure and slurry containing more than 170 kg of nitrogen per hectare in a year. Farmers can apply for a nitrates derogation where the 170 kg N/ha limit will be exceeded up to a maximum of 250 kg N/ha.

There are times of the year when you must not spread any fertiliser or manure at all on your land. These are called the **prohibited spreading periods**. Research has shown that prohibited periods are necessary to prevent nutrient loss to water during the most environmentally risky time of the year.

You must keep within the overall maximum fertilisation rates for nitrogen and phosphorus (i.e., organic and chemical fertiliser combined), the basic rule being that you only apply as much nitrogen and phosphorus as your crops (including grass) need.

You must have sufficient storage capacity to meet at least the minimum requirements of the **Regulations**, and all storage facilities must be kept leak-proof and structurally sound.

You must follow the rules about ploughing and applying non-selective **herbicides**.

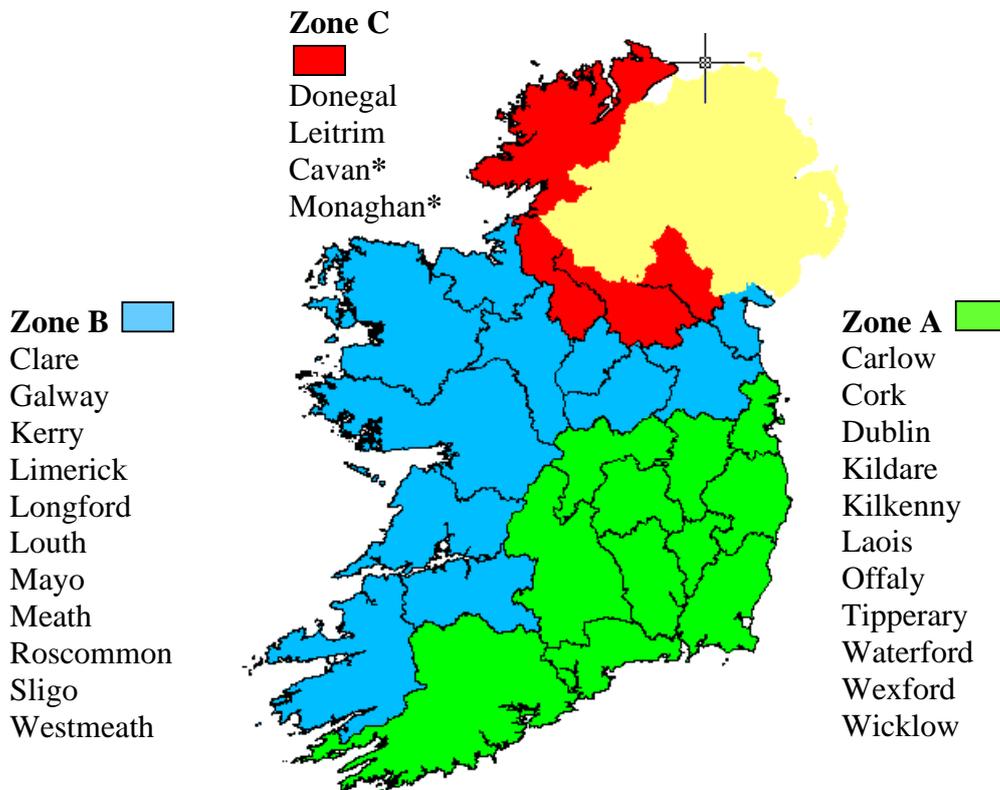
You must keep various records, including records of the fertilisers and manures you bring onto your holding or send out of it. You have to keep records for each calendar year, which means 1 January to 31 December, and you must have them ready by **31 March** of the following year. For 2018, you are required to have records available by 31 March 2019 on area farmed, crops grown, types of livestock and numbers, storage facilities on farm etc.

You will already have most of this information on your Basic Payment application, stock registers and Animal Identification and Movement (AIM) system profiles. You must keep full records (including fertiliser/manure/concentrate details) as set down in **Section 5** of this Handbook (page 28).

The different Zones

The map on the next page shows how the **Regulations** divide the country into zones. Underneath the map, you will find the rules for each zone about minimum storage capacity and the prohibited spreading periods (the times when you are not allowed to spread organic and chemical fertilisers). Zone C (the North West) is divided into two parts (Donegal/Leitrim and Cavan/Monaghan), which have different minimum storage requirements, but have the same rules about the times when fertilisers must not be spread.

Zone Designation



Storage periods for cattle manure & the prohibited periods for spreading fertilisers to land

ZONES	STORAGE PERIOD FOR CATTLE MANURE	PROHIBITED APPLICATION PERIODS		
		CHEMICAL FERTILISERS	ORGANIC FERTILISERS	FARMYARD MANURE
A	16 WEEKS	15 SEPT–12 JAN	15 OCT–12 JAN	1 NOV–12 JAN
B	18 WEEKS	15 SEPT–15 JAN	15 OCT–15 JAN	1 NOV–15 JAN
C (Donegal and Leitrim)	20 WEEKS	15 SEPT–31 JAN	15 OCT–31 JAN	1 NOV–31 JAN
C* (Cavan and Monaghan)	22 WEEKS	15 SEPT–31 JAN	15 OCT–31 JAN	1 NOV–31 JAN

What does this Handbook cover?

This hand book is divided into the following main sections:

- What's new in these regulations
- Managing the farmyard
- Managing the farm to prevent direct losses
- Managing fertilisers and nutrients
- Keeping records
- Controls
- Helpsheets
- The Cross Compliance checklist
- Nitrates derogation

The Helpsheets

There are three sets of **Helpsheets**, starting on page 38. They show you the steps that the Department of Agriculture, Food and the Marine use to check that you are complying with the **Regulations**. Other agencies, like your local authority, use similar checks. You can use the **Helpsheets** to check for yourself what you need to do.

Tables 1–22

When this Handbook mentions Tables, it means the Tables in the **Regulations** themselves.



STATUTORY INSTRUMENTS.

S.I. No. 605 of 2017

EUROPEAN UNION (GOOD AGRICULTURAL PRACTICE FOR
PROTECTION OF WATERS) REGULATIONS 2017

SECTION 1: What's new in this regulation?

Ireland's fourth National Action Programme (NAP) came into effect 1st January 2018 and has been given legal effect by Good Agricultural Practice for Protection of Waters **Regulations** 2017 (S.I. No. 605 of 2017). A summary of the new measures in this regulation are outlined below:

- Prevention of direct run-off from farm roadways to waters (i.e. watercourses and dry drains) from 1st January 2021 - page 16 of this handbook
- Bovine exclusion from watercourses (as identified on 1:5,000 scale OSI mapping or better) on farms with grassland stocking rate above 170 kg N/ha from 1st January 2021 - page 17 of this handbook
- Water troughs to be located at least 20m from watercourses on farms with grassland stocking rates above 170 kg N/ha from 1st January 2021 - page 17 of this handbook
- Prevention of run-off to waters (i.e. watercourses and dry drains) resulting from poaching - page 16 of this handbook
- Increased P build-up allowances for P index 1 and 2 soils. This only applies to farmers with a grassland stocking rate >130 kg N/ha. Farmers availing of these P build-up rates must comply with requirements - page 21 of this handbook
- New transitional provisions for pig manure - page 23 of this handbook
- Soil organic matter testing in designated peaty areas as defined in the Teagasc- EPA Indicative Soils Map – page 20 of this handbook
- Soil sampling area is reduced to 5 hectares and the soil sample is valid for 4 years – page 20 of this handbook
- Simplification of calculations of maximum fertiliser N and P allowances – page 19 of this handbook
- Provision for the application of 20kg P/ha on winter cereals up to 31st October for P index 1 and 2 soils and P must be incorporated at or before sowing – page 23 of this handbook
- The allowable N and P limits for potato and vegetable crops have been updated – page 23 of this handbook
- Calculation of N and P allowances is based on the previous year's stocking rate – page 19 of this handbook
- Additional minor and technical changes made in the regulations include the following:
 - For clarity, reference is made to silage clamps as well as pits
 - Regulation 17 (2) (d), is amended to include turloughs likely to flood
 - Article 30 (5) is amended to – 'a local authority shall follow the inspection protocol as established by the Minister'.

SECTION 2:

Managing the Farmyard



The **Regulations** deal with three main aspects of farmyard management:

- Keeping soiled water to a minimum
- Collecting effluents, organic fertilisers etc.
- Storing effluents, organic fertilisers etc. properly

Keeping soiled water to a minimum

Soiled water includes 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:

- Livestock faeces or urine or silage effluent,
- Chemical fertilisers,
- Washings such as vegetable washings, milking parlour washings or washings from mushroom houses,
- Water used in washing farm equipment.
- If soiled water is stored together with slurry, then as far as the **Regulations** are concerned it is slurry, and is subject to the same rules as slurry.

For example, wash down water which becomes lightly contaminated with livestock faeces/urine in the milking parlour shall, (subject to not exceeding the dry matter content and BOD thresholds specified in the **Regulations**), be considered to be soiled water. Wash down water that is allowed to enter slurry storage tanks is deemed to be slurry for the purpose of the **Regulations** and must comply with the rules pertaining to slurry.

You must:

- Divert all clean water from roofs to a clean water outfall. Rainwater gutters and downpipes required for this purpose must be kept in good working condition. Likewise clean water coming from clean yards and clean water coming from higher ground must be diverted to a clean water outfall. Prevent clean water from becoming soiled.
- Keep the amount of soiled water that is produced on your holding to a minimum.



Collecting organic fertilisers

Organic fertiliser means slurry, farmyard manure, spent mushroom compost, sewage sludge, industrial sludges etc. Until you are ready to apply them to land, you must collect all organic fertilisers, effluents and soiled waters produced in buildings and yards in a way that will prevent run-off or seepage, directly or indirectly, into groundwater and surface water.

Storing organic fertilisers properly

You must have enough storage capacity to meet the minimum requirements of the **Regulations**. Spreading fertilisers is not allowed during the prohibited spreading period, and is also not permitted outside of the prohibited period if weather or ground conditions are unsuitable and there is a risk that the nutrients in the fertilisers might run off into surface water and groundwater. Therefore you must also make sure that you have enough spare capacity to allow for bad weather.

All storage facilities for organic fertiliser, effluents and soiled water must be kept leak-proof and structurally sound. All new storage facilities must meet the construction specifications of the Department of Agriculture, Food and the Marine. (You can get more information about these specifications from your advisor/consultant, from your local Department office or on the Department's website www.gov.ie/agriculture).

If you have not got enough slurry storage capacity, one way of dealing with the problem is by having straw bedding or other absorbent bedding material. (For example you could have straw bedded housing for cattle, or wood shavings or chopped straw for broilers). This type of housing/storage capacity must have leak proof concrete flooring and any run-off must be collected.

If your holding lies in more than one zone the higher manure storage requirement applies to the holding if 20% or more of your holding lies in the zone with the greater requirement.

How much storage capacity do you require for your livestock?

The minimum storage capacity required for the main types of livestock is shown in **Tables 1, 2 and 3** of the **Regulations**.

You must have 200mm freeboard in all covered tanks. In all uncovered tanks, you will need 300mm freeboard. When you are working out the storage capacity of an uncovered tank, you must make an allowance for the average net rainfall for your county. You must also allow for any soiled water coming from yards that can get into tanks. There is information in **Table 4** of the **Regulations** to help you to do this.

Helpsheet A of this Handbook, starting on page 39 will show you how to work out whether you have enough storage capacity. Your advisor can help you with this if you are not sure about it.

Cattle manure

Look again at the table below. The minimum storage periods required for cattle manure is shown in the table. As you can see, the amount of storage required depends on which zone your holding is in.

Storage periods for cattle manure

Zones	A (Carlow, Cork, Dublin, Kildare, Kilkenny, Laois, Offaly, Tipperary, Waterford, Wexford, and Wicklow)	B (Clare, Galway, Kerry, Limerick, Longford, Louth, Mayo, Meath, Roscommon, Sligo, and Westmeath)	C (Donegal and Leitrim)	C* (Cavan and Monaghan)
Storage period for cattle manure	16 Weeks	18 Weeks	20 Weeks	22 Weeks

Deer, goat and sheep manure

You must have a minimum of six weeks' storage capacity for deer, goat and sheep manure.



Reduced storage capacity for cattle (except dairy cows), sheep, deer or goats

If your livestock are outwintered at any time during the **prohibited spreading periods** (the periods when you are not allowed to spread organic fertiliser), you may need less storage capacity. This rule applies to you if your **sheep, deer or goats** are outwintered during the full prohibited spreading period at a grassland stocking rate of not more than 130 kg of nitrogen to the hectare (this is the equivalent to 10 lowland ewes to the hectare). This rule also applies to you if you have other livestock (excluding dairy cows, deer, goats and sheep) outwintered at a grassland stocking rate not exceeding 85 kg of nitrogen to the hectare.

If sheep, deer or goats are outwintered with cattle, then the maximum stocking rate that applies is the rate for cattle (85 kg of nitrogen to the hectare).

- You can use **Helpsheet C** of this Handbook (beginning on page 47) to work out your grassland stocking rate. You will also need to know your eligible grassland area in hectares, which for most holdings is on your application form for the Basic Payment Scheme. If you want to use this rule to have less storage capacity for cattle (except dairy cows), sheep, deer, or goats, you must also meet these extra conditions:
- The total amount of livestock manure produced on your holding must not be more than 140 kg nitrogen per hectare per year, and
- All the lands used for outwintering must be part of your holding, and
- The outwintered stock must have free access at all times to the required land, and
- There must be no severe poaching, and
- The reduction in storage capacity must match the actual number of livestock that you have outwintered.

You cannot use this rule to have less storage capacity for dairy cows.



Pig manure

The general rule is that you must have 26 weeks storage capacity for pig manure. However 16/18/20/22 week's storage capacity (depending on which zone you are in) will be enough if:

- There are no more than 100 pigs on your holding at any time, and
- Your own holding is large enough to take all the livestock manure produced, without exceeding the nitrogen or phosphorus limits in the **Regulations**.

Poultry manure

The general rule is that you must have 26 weeks storage capacity for poultry manure. However 16/18/20/22 week's storage capacity (depending on which zone you are in) will be enough if:

- There are no more than 2,000 poultry places on your holding, and
- Your own holding is large enough to take all the livestock manure produced, without exceeding the nitrogen or phosphorus limits in the **Regulations**.

Another way of reducing the storage capacity you need

Another way that you may need less storage capacity on your holding is if you have one of these contracts:

- A contract giving you, and no-one else, access to enough storage somewhere else, outside your holding, or
- A contract with a treatment facility for processing livestock manure, or
- A contract with an authorised person or body who undertakes the collection, recovery or disposal of waste.

Soiled water

You must have enough storage to be able to store the equivalent of at least 10 days of soiled water at any time of the year. For soiled water storage facilities constructed on or after 1 Jan 2015 you must have enough storage to be able to store the equivalent of at least 15 days of soiled water at any time of the year.

Effluents produced by ensiled forage

You must have enough storage for silage effluent or effluent from other crops as shown in **Table 5** of the **Regulations**.



SECTION 3: Managing the Farm to prevent direct losses

This section deals with new measures introduced for the fourth NAP (2018 – 2021) with a focus on breaking the pathway of nutrient and sediment loss to waters:

- Preventing direct run-off from farm roadways to waters (i.e. watercourses and dry drains)
- Prevention of run-off to waters (i.e. watercourses and dry drains) as a result of poaching
- Preventing cattle access to watercourses (as identified on 1:5000 OSI mapping or better) for farms at a grassland stocking rate of 170 kg N ha or above
- Water troughs to be located at least 20m away from watercourses for farms at a grassland stocking rate of 170 kg N ha or above

Preventing direct run-off from farm roadways to waters

This measure is to prevent direct run-off to waters (i.e. watercourses and dry drains) from farm roadways and applies to all farms. This measure will be effective from 1st January 2021. There are a range of potential options to prevent run-off to waters, some of which are:

- Cambering of the roadway directing water to one side into the field
- Measures to reduce the speed of water flow
- Earth bunding along the road

This measure applies to all farmers regardless of stocking rate. The Department farm roadway specification (S.127) gives guidance on the construction of new farm roadways and sets out how existing farm roadways can be modified to comply with the requirements. It will be necessary for the farmer, usually in consultation with the advisor, to determine the sections of farm roadways that require altering to prevent losses to waters.



Prevention of run-off as a result of poaching

This measure is to ensure that the risk of soil erosion and runoff to waters (i.e. watercourses and dry drains) from poaching is minimised by means of appropriate management. Farmers are required to manage livestock grazing to ensure the risk of poaching is minimised. This measure applies to all farmers regardless of stocking rate.

Preventing cattle access to watercourses:

This measure is to prevent cattle access to watercourses (as identified on 1:5000 OSI mapping or better) on farms with a grassland stocking rate of 170 kg N/ha or above. This measure will be effective from 1st January 2021. It will be required to fence watercourses 1.5m from the top of the river bank or water's edge as the case may be.

Fencing of watercourses will potentially reduce nutrient and sediment loss to watercourses as well as allow vegetation to recover on river banks, helping to break the nutrient loss pathway and reducing losses.

Water troughs & supplementary drinking points to be located 20m away from watercourses:

This measure is to ensure that all water troughs are located at least 20 metres away from watercourses on farms with a grassland stocking rate of 170 kg N/ha or above. This measure will be effective from 1st January 2021. Where there is a farm roadway between a water trough and a watercourse the 20m requirement does not apply.

Under the current **Regulation**, farmers with stocking rates below 170 kg N/ha are not required to move water troughs or fence watercourses. The determination of the grassland stocking rate for fencing of watercourses and setback of water troughs is based on the previous year's grassland stocking rate, and exceptional circumstances will be addressed as they arise.



Certain new measures are required to be implemented by January 2021. However, farmers are strongly encouraged to implement new measures where relevant as soon as is practical for protection of water purposes.

SECTION 4: Managing Fertilisers and Nutrients



This Section deals with managing fertilisers and nutrients on your holding. For the purposes of the **Regulations**, a **fertiliser** is any substance containing nitrogen or phosphorus used on land to help to grow crops (including grass).

The two main points about managing fertilisers are:

- The total amount of livestock manure applied to your land in a calendar year must not contain more than 170 kg of nitrogen to the hectare (or must not contain more than 250 kg of nitrogen if in derogation).
- The total quantity of fertilisers (organic and chemical combined) that you apply to your land must not be more than the crops need (this includes grass).

The 170 kg/ha/year nitrogen limit — what does it mean? How will you know that you are not exceeding the limit?

The amount of livestock manure that you apply to land on your holding in any year, added to what your livestock deposit directly, must not amount to more than 170 kg of nitrogen to the hectare. (This is what two dairy cows would produce on a hectare of land.) Livestock other than dairy cows produce less nitrogen, and the amounts are shown in **Table 6** of the **Regulations**. See also **Helpsheet B on page 44** of this Handbook. The majority of holdings are under the 170kg limit. It is only the more intensively stocked holdings or holdings importing livestock manure that may be at risk of going over the limit.

Nitrogen & Phosphorus Statements

Nitrogen and Phosphorus statements are available online on the Department's website to all farmers (registered users). Farmers not already registered for agfood.ie can do so by logging onto www.agfood.ie and clicking the 'Register' button. To register a mobile phone number for future SMS text alerts log on to <https://www.agriculture.gov.ie/mobileupdates/> to access the sign-on form, or alternatively contact the regional office.

These statements relate to those who in the previous year (a) had cattle recorded on the Department's AIM system and (b) made application under the Basic Payment Scheme. The Statement sets out the quantities of nitrogen and phosphorus produced by cattle during the previous year. This will give you a clear indication of your livestock manure nitrogen status and help you to establish whether you were within the 170 kg limit in the previous year. It will also help you to plan for the year ahead. Interim statements are also available online. They usually cover the first 6 month period January to June followed by statements for 8 months, 9 months, 10 months and 11 months.

Remember that the statement shows the nitrogen and phosphorus produced by cattle only, so if you have other livestock on your farm (such as sheep, pigs, poultry, horses etc) you will need to work out the N and P that they produced and add this to the figure for cattle to get the total figure. Similarly if you import livestock manure this must be accounted for when calculating compliance with the 170 kg N/ha limit.

Nutrient Management Planning (New provisions in S.I. No. 605/2017)

- For the purposes of determination of grassland stocking rates under Tables 12, 13A and 13B, the previous year's stocking rate is used, e.g. for 2018 calculations the 2017 stocking rate will be used to calculate the maximum N and P allowed for 2018, unless a farmer is going into derogation for the first time where derogation rates apply. The other exception is in the situation where a farmer was in derogation in 2017 and is not applying for derogation in 2018, where the maximum N and P allowed is based on 2018 stocking rate.

Examples

- Grassland stocking rate in 2017 was 125 kg N/ha; the predicted stocking rate for 2018 is 165 kg N/ha. For 2018 the maximum fertilisation rate is based on 2017 stocking rate i.e. 206 kg N/ha, 10 kg P/ha (for P index 3 soil, no build up).
- Grassland stocking rate in 2017 was 165 kg N/ha; the predicted stocking rate for 2018 is 180 kg N/ha (derogation for first time). For 2018 the maximum fertilisation rate is based on derogation rates i.e. 282 kg N/ha, 16 kg P/ha (for P index 3 soil, no build up).
- Grassland stocking rate in 2017 was 180 kg N/ha (derogation); the predicted stocking rate for 2018 is 165 kg N/ha (no derogation being applied for). In this situation as there is no derogation in 2018 the maximum fertilisation rate is based on 2018 stocking rate i.e. 206 kg N/ha, 13 kg P/ha (for P index 3 soil, no P build up)

- Nitrogen and Phosphorus maximum limits as contained in Tables 12, 13A and 13B are in addition to N and P in grazing livestock manures on the holding. This means it is not required to deduct the N and P in livestock manures in order to calculate allowances, thereby simplifying the calculations.
- Where livestock manure is imported onto a farm, the calculation of the maximum amount of nitrogen that can be imported in the manure is based on the previous year's stocking rate data. Please note that nitrates derogation holders are prohibited from importing livestock manure.
 - E.g. if importing manure onto a farm in 2018 and the stocking rate in 2017 was 140 kg N/ha then the maximum manure that can be imported will be 30 kg N/ha.

Are you stocked at more than 170 kg nitrogen to the hectare?

In excess of 90% of the holdings in Ireland are stocked at less than 170 kg of nitrogen to the hectare per year. If you want to farm above this limit you may need to apply for a Nitrates derogation (up to a limit of 250 kg of nitrogen per hectare per year). The terms and conditions applicable to a derogation are to be found on the Department's website or alternatively contact the Nitrates Section, Johnstown Castle, Wexford, telephone 053-9163444 or email nitrates@agriculture.gov.ie

Managing nitrogen and phosphorus

Every farmer must keep within the overall maximum fertilisation rates for nitrogen and phosphorus (i.e., organic and chemical fertilisers combined). The basic rule is that you can only apply as much nitrogen and phosphorus as your crops need (including grass). You must never go above the maximum fertilisation rates, which you can find in **Tables 12-22** of the **Regulations**.

Research has shown that there is significant scope to improve farm nutrient management planning, on Irish farms, and soil testing is central to achieving this. Having a nutrient management plan for your farm is the best way to:

- Identify soil fertility problems,
- Make the best use of the available nutrient resources on your farm,
- Calculate your fertiliser requirements for the year,
- Increase farm productivity.

To maximise these benefits it is important that a plan is prepared early and on a field-by-field basis and followed throughout the year. You should get soil tests done to show the phosphorus index of your soil. The higher allowances allocated to soil phosphorus indices 1 and 2 in **Tables 9, 13A, 13B 15, 17, 19 and 21** of the **Regulations** can only be used if you have valid soil test results. You must have soil tests done in the way that is specified in **Schedule 1** of the **Regulations**. Soil tests carried out after the commencement of the **Regulations (1st January 2018)** are valid for four years. Soil tests carried out prior to the **Regulations** are valid for five years. A soil sample is required to be taken for a maximum of every 5 ha of land. If you do not get soil tests done, you must assume that your soil is phosphorus Index 3, and you cannot avail of the higher allowances for soil phosphorus indices 1 and 2.

Farmers undertaking soil testing who are located in a designated high organic matter (OM) area with OM content above 20% (as designated according to the Teagasc-EPA Indicative Soils map) must include a test for organic matter determination under article 16 (3) of the **Regulations**, unless the Farm Advisory Service (FAS) advisor certifies that the soil is a mineral soil (in such a situation the OM test is not required when soil testing). It is required that in such a situation the advisor provides a signed and dated declaration to the farmer with the relevant details of herdowner name and address, herd number and LPIS parcel (see declaration form, page 36). The P fertilisation rate for soils with 20%+ OM must not exceed the amount permitted for P index 3. The soil OM map layer is available on the Departments LPIS mapping system.



Allowances for P build-up rates for soil indices 1 and 2

Grassland phosphorus rates are outlined in **Table 13A** of the **Regulations**. There is a higher allowance of P build-up rates on P index 1 and 2 soils and these are outlined in **Table 13B** of the **Regulations**. These increased P allowances apply only for grassland on farms with grassland stocking rates of 130 kg N/ha or above.

- Farmers wishing to avail of these P build-up allowances must submit a nutrient management plan (NMP) to DAFM using the Teagasc on-line NMP, prepared by an approved Farm Advisory Service (FAS) advisor. Soil analysis is required, including soil organic matter unless it is certified to be mineral soil by a FAS advisor.
- For farmers applying for a Nitrates Derogation in 2018 and who wish to use the new P build-up rates (as contained in table 13B of S.I. 605/2017), the on-line NMP satisfies DAFM notification requirement.
- For non-derogation farmers who wish to use the new P build-up rates, a copy of the Teagasc on-line NMP must be emailed to the Department at pbuildup@agriculture.gov.ie by 31st December 2018.
- To ensure the protection of the environment, farmers using the increased P build-up rates are required to participate in a dedicated training programme in the first year of the P build up programme.

Additional important points about managing Fertilisers and Nutrients, including the new changes to the Regulations

- The **Regulations** specify that there are certain amounts of nitrogen and phosphorus in organic fertilisers. **Tables 7 and 8** of the **Regulations** show what these amounts are. In the case of spent mushroom compost, the total phosphorus concentration is 1.5 kg/tonne (**Table 8**). If you wish, you can use different figures for any pig and poultry manure produced on your holding but you must have these figures certified by the Environmental Protection Agency or by the Department of Agriculture, Food and the Marine.
- Nitrogen and phosphorus availabilities for different fertilisers are outlined in **Tables 9 and 9A** of the **Regulations**. On phosphorus Index 1 and 2 soils the phosphorus in all organic fertilisers is considered to be 50% available (subject to a valid soil test result).
- If you are using 5% or more of your holding to grow crops other than grass and your grassland stocking rate is greater than 170 kg N per hectare per year, you can use the higher fertilisation rates in **Tables 12, 13A and 13B** of the **Regulations**, appropriate to your grassland stocking rate.
- When you are working out how much phosphorus you can spread on your holding, you must count in the phosphorus coming from concentrates in excess of 300 kg per 85 kg stocking rate that you brought in, or concentrates you produced yourself (such as cereals), and fed to your grazing livestock in the previous year. The **Regulations** specify that in the absence of known P concentrations (book value or P content provided by feed supplier) every 100 kg of concentrated feedstuff fed to your grazing livestock is equal to 0.5 kg phosphorus spread on a hectare of land under article 16 (6).
- The phosphorus fertilisation rates for soils that have more than 20% organic matter (peat soils) cannot be higher than the amounts allowed for Index 3 soils. These are known as maintenance amounts, which means the amounts that are needed to replace whatever the crop takes up.
- Once you have spread enough manure from grazing livestock on your holding to meet the phosphorus requirements of all the crops that you are growing on Index 1, 2 & 3 soils, you can spread the rest on any Index 4 soil you have as long as you stay within the nitrogen limit of 170 kg.
- In the case of grassland, an added allowance of 15 kg of phosphorus per hectare may be applied at soil phosphorus indices 1, 2, or 3 for each hectare of pasture establishment undertaken.
- In the case of lowly stocked farms (<85 kg N/ha grassland stocking rate), there is an allowance to avail of the fertilisation rates in **Table 15** for those areas of the farm where hay or silage is produced for sale off the holding. Documentary evidence such as sales receipts is required to avail of the higher P allowance in this case.
- In the case of maize, there is an additional annual phosphorus allowance for crops grown on Index 4 soils which must be incorporated. This additional allowance is subject to a valid soil test result (**Table 17**).
- In the case of certain tillage crops, there is an additional allowance of 20 kg phosphorus/ha where a valid soil test result indicates a pH greater than or equal to 7.0 (**Table 17**).
- If you are growing cereals with a higher than average yield, **Table 16** of the **Regulations** allows for higher nitrogen fertilisation rates. However, if you want to use these higher

fertilisation rates, you will need documentary evidence such as sales receipts, or a milling contract to show that you got the higher yields or that you were growing the wheat for milling purposes.

- Where malting barley is grown under a contract to a purchaser of malting barley, an extra 20 kg N/ha may be applied where it is shown on the basis of agronomic advice that additional nitrogen is needed to address proven low protein content in the grain (**Table 16**).
- Where proof of higher yields is available, **Table 17** of the **Regulations** allows an additional 3.8 kg P/ha to be applied to cereals for each additional tonne above a reference yield of 6.5 tonnes/ha.
- You can apply 20 kg P/ha chemical fertiliser up to October 31st on winter cereals on index 1 and 2 soils which must be incorporated prior to or at sowing. This is 20 kg of the total annual allowance of chemical P and is not an extra allowance.
- The maximum allowable N and P allowances for potato and vegetable crops have been updated and are outlined in **Tables 16, 17, 18 and 19**.

Helpsheet B of this Handbook (starting on page 44) shows you how to work out whether you are below the limit of 170 kg of nitrogen to the hectare. **Helpsheet C** (starting on page 47) shows you how to work out the maximum nitrogen and phosphorus allowed for your holding.

Transitional provisions for pig manure

There are transitional provisions to help holdings producing pig manure, and also for holdings using pig manure. This rule allows you to use a combination of fertilisers (e.g. chemical and pig) and apply up to 3 kg/ha more of phosphorus on your land than your crops require, as long as the excess comes from manure produced by pigs and you do not exceed the 170 kg nitrogen limit. From 1 January 2018, that excess may not exceed 3kg / ha reducing to 0kg/ha in 2021. The concession in regard to pig manure, is only applicable where suppliers and users of such fertilisers keep adequate records (see **Section 5**, beginning on page 28.)

Phosphorus excess limits

Date	Total available phosphorus (kg/ha)
1 January 2017	3
1 January 2018	3
1 January 2019	2
1 January 2020	1
1 January 2021	0

Pig and poultry manures can be imported onto a holding after the commencement of the closed period until 31st December and will be treated as inventory for the following year. For example pig manure imported and stored on a farm will be allocated to the following year crops / fertiliser plan. This is to be recorded on “Record of Movement of Organic Fertilisers” – Record 3 Form.

Rules applying to Movement of Livestock (Cattle and Sheep) for grazing on a temporary basis

The Nitrates **Regulations** have implications for farmers moving their animals to another holding for grazing on a temporary basis. Where **cattle** are involved and no sale or purchase has taken place, farmers can obtain credit for the fertiliser produced by these cattle only if they follow one of the following procedures:

- a) cattle are officially moved under AIM by completing an NBAS31B (B&B application form)
or
- b) where there are no cattle at the other location, The Department of Agriculture, Food and the Marine, Nitrates Section, Johnstown Castle Estate, Wexford must be notified in advance of the temporary movement of the cattle by completing a **Record 4 form*** before 31st December of that year.

Where **sheep** are moved on a temporary basis onto another holding:

- c) the normal identification procedures provided for in legislation apply if there are cattle or sheep on the receiving holding (i.e. you are required to complete dispatch documents and forward to local Department of Agriculture, Food and the Marine office). Dispatch documents can be produced as documentary evidence in response to notifications of exceeding the Nitrate limits.
- d) where there are no sheep on the receiving holding, The Department of Agriculture, Food and the Marine, Nitrates Section, Johnstown Castle Estate, Wexford must be notified in advance of the temporary movement of the sheep by completing a **Record 4 form***. Where cattle/sheep are moved under b) or d) above, the change in livestock number and the type of livestock associated with this move must be taken into account, for the purpose of calculating compliance with the 170 kg/ha limit, and compliance with the maximum fertilisation rates for nitrogen and phosphorus.

*The owner of the holding from which animals move, is responsible for ensuring that a copy of the completed Record 4 (see page 33) is submitted to Nitrates Section, Department of Agriculture, Food and the Marine, Johnstown Castle, Co. Wexford prior to movement before 31st December. Record 4 form can be found on the Departments website at <https://www.agriculture.gov.ie/ruralenvironment/environmentalobligations/nitrates/nitratesrecords/>

Please note that the only acceptable proof of postage will be: Swift Post Receipt or Registered Post Receipt or email to nitrates@agriculture.gov.ie

Precautions you must take when you are applying fertilisers

In order to prevent waters from being polluted by nitrogen and phosphorus, the **Regulations** require that you must do the following:

- You must spread chemical fertilisers, livestock manure and other organic fertilisers, effluents and soiled water as accurately and as evenly as you can.
- You must not use an upward-facing splash plate or sludge irrigator on a tanker or umbilical system for spreading organic fertiliser or soiled water.
- You must not spread organic fertilisers or soiled water from a road or passageway, even if the road or passageway is on your own holding.
- You must not spread chemical fertilisers, livestock manure, soiled water or other organic fertilisers when:
 - The land is waterlogged;
 - The land is flooded, or it is likely to flood;
 - The land is frozen, or covered with snow;
 - Heavy rain is forecast within 48 hours (you must check the forecasts from **Met Éireann**).
 - The ground slopes steeply and there is a risk of water pollution, when factors such as surface run-off pathways, the presence of land drains, the absence of hedgerows to mitigate surface flow, soil condition and ground cover are taken into account.
- You must not spread chemical fertiliser on land within 2 metres of a surface watercourse.
- The following table shows the different buffer zones for different kinds of water bodies (lakes, rivers, wells etc.). You must not spread soiled water, effluents, farmyard manures or other organic fertilisers inside these buffer zones.

Buffer zones for spreading organic fertilisers	
Water body/Feature	Buffer zone
Any water supply source providing 100m ³ or more of water per day, or serving 500 or more people	200 metres (or as little as 30 metres where a local authority allows)
Any water supply source providing 10m ³ or more of water per day, or serving 50 or more people	100 metres (or as little as 30 metres where a local authority allows)
Any other water supply for human consumption	25 metres (or as little as 15 metres where a local authority allows)
Lake shoreline	20 metres
Exposed cavernous or karstified limestone features (such as swallow holes and collapse features)	15 metres
Any surface watercourse where the slope towards the watercourse exceeds 10%	10 metres
Any other surface waters	5 metres*

*The 5 metre buffer zone is increased to 10 metres for a period of two weeks preceding and two weeks following the periods when application of fertilisers to land is prohibited as set out in Schedule 4 of the **Regulations** (check the table and map on page 7). The objective of increased setback distances at the shoulders of the closed period is to help retain as much of the applied nutrient in the field as possible thereby reducing its risk of loss through overland flow.

In the case of water for human consumption, your Local Authority may vary buffer widths from those specified above, and will inform you if they do so.

Take care when you are spreading soiled water

You can spread soiled water all the year round if the weather is suitable, if the condition of the land is suitable and if you do it in the way that the **Regulations** tell you to do it. However there are some restrictions as follows:

- You must not spread more than 50,000 litres to the hectare in any six-week period.
- You must not spread more than 5 mm an hour by irrigation.

There are extra restrictions in areas that are identified, on maps produced by the Geological Survey of Ireland, as **Extreme Vulnerability Areas on Karst Limestone Aquifers**. In these areas:

- You must not spread more than 25,000 litres to the hectare in any six-week period.
- You must not spread more than 3 mm an hour by irrigation.

Storing farmyard manure in a field

You must not store farmyard manure in a field during the **prohibited spreading period** for farmyard manure (check the map and table on page 7). You can store it in a field during the spreading season, but you must store it in a compact heap and you cannot store it within the buffer zones in the following table. Farmyard manure is the only organic fertiliser that may be stored in a field during the spreading season and no organic fertiliser may be stored in the field during the **prohibited spreading period**.

Buffer zones applicable when farmyard manure is stored in a field	
Water body/Feature	Buffer zone
Any water supply source providing 100m ³ or more of water per day, or serving 500 or more people	250 metres
Any water supply source providing 10m ³ or more of water per day, or serving 50 or more people	250 metres
Any other water supply for human consumption	50 metres
Lake shoreline	20 metres
Exposed cavernous or karstified limestone features (such as swallow holes and collapse features)	50 metres
Any other surface waters	20 metres

Silage bales

Silage bales may not be stored outside of farmyards within 20 metres of waters or a drinking water abstraction point in the absence of adequate facilities for the collection and storage of any effluent that may arise.

Supplementary feeding

No supplementary feeding points may be located within 20 m of surface water or on bare rock.

No till zone

No ploughing or tilling may take place within 2 m of a watercourse (stream/river) marked on the modern 1:5000 OSI scale OSI map or better except in the case of grassland reseeding or establishment. The no till zone does not apply to field drains.

Ploughing and using non-selective herbicides

- Arable land ploughed between 1 July and 30 November must have a green cover from a sown crop within 6 weeks of ploughing.
- Grassland ploughed between 1 July and 15 October must have a green cover from a sown crop by 1 November.
- You must not plough grassland between 16 October and 30 November.
- If you use a non-selective herbicide on arable land or grassland between 1 July and 30 November, there must be green cover from a sown crop or from natural regeneration within 6 weeks from when you use the herbicide. In the case of seed crops and crops for human consumption where the contract prohibits the use of non-selective herbicide pre-harvest the requirement to provide green cover is reduced to 75% of the contract area after 15th October.
- If you provide green cover to abide by the rules in regard to ploughing or using a non-selective herbicide, you must not remove it by ploughing or by use of a non-selective herbicide before 1st December, unless a crop is sown within two weeks of removing it.



SECTION 5: Keeping Records

Under the **Regulations**, you have to keep records. You must keep the records for each calendar year and they must be finalised by **31 March** of the following year. For 2018, you are required to have records available by 31 March 2019 on area farmed, cropping regime, types of livestock and numbers, and storage facilities on farm. You will already have most of this information on your Basic Payment application, stock registers and AIM profiles. You must keep full records (including fertiliser/manure details) as set down in this Section of the Handbook. You must keep the records for five years.

These are the records you must keep:

- The total area of your holding in hectares (this is on your application form for the Basic Payment Scheme if you are an applicant).
- The eligible area of the holding in hectares (this is on your application form for the Basic Payment Scheme if you are an applicant).
- The areas of grass and any other crops on your holding (this is also in your application form for the Basic Payment Scheme).
- An estimate of how much fertiliser your holding requires for the year, and a copy of any Nutrient Management Plan (for example a GLAS plan) that might have been done for your holding (it is recommended that you do this estimate early in the year using the record of the areas of grass and any other crops on your holding). Remember to take into account fertilisers applied in autumn for autumn-sown crops.
- The numbers and type of livestock you have (see **Table 6** of the **Regulations** for a description of livestock types), as follows:
 - In the case of cattle, you do not need to keep any records additional to the Bovine Herd Register or bovine electronic herd register.
 - In the case of sheep, you do not need to keep any records additional to the Flock Register.
 - In the case of pigs and poultry, you can just write in the number of pig or poultry places.
 - You should also record the number of each livestock type other than the above types on the holding on the first day of each quarter.
- The quantities and types of chemical fertilisers moved on to or off your holding, including opening stock, records of purchase and closing stock.
- The total amount of concentrates (including cereals produced on your holding) that you fed to grazing livestock during the previous year. You should also keep a copy of all dockets showing amounts of concentrates purchased during the previous year
- Livestock manure and other organic fertilisers moved on to or off the holding including quantities, type, dates and details of exporters/importers, as the case may be.
- Completed record of movement of organic fertiliser form in the format specified (**Record 3**, page 31) must be submitted to Nitrates Section, Department of Agriculture, Food and the Marine, Johnstown Castle Estate on or before 31st December each year in respect of all exports of livestock manure (e.g. cattle manure, pig slurry, poultry litter) which occur during the year. This applies to all farmers including those with an approved Derogation.
- Details of livestock temporarily moved to, or received from, another holding for grazing including cattle/sheep types, rental period, LPIS numbers of land grazed plus name and herd number of transferor/transferee.

Record 2: Chemical fertilisers coming onto your holding (“imported”) or being sent out of it (“exported”)

Date		Type of fertiliser			Quantity (tonnes)	kg of N	kg of P
		N % (i)	P % (ii)	K %			
					(i) x (iii) x 10	(ii) x (iii) x 10	
Opening stocks							
01/01/							
Purchases/moved onto holding	Name/address of supplier						
Sales/moved off holding	Name/address of receiver						
Closing stocks							
31/12/							
Total kg of chemical nitrogen and phosphorus used (opening stock + purchases – sales – closing stock)							

Total concentrates (kg) fed to grazing livestock during the previous year: _____

RECORD 3 - RECORD OF MOVEMENT OF LIVESTOCK MANURES¹

Movement forms must be submitted before the end of each year i.e. details of exports which occur in 2018 must be submitted on this form by 31.12.2018

PLEASE COMPLETE AND RETURN FORM TO: Nitrates Section, Department of Agriculture, Food & the Marine, Johnstown Castle Estate, Wexford Y35 PN52, **OR** email to nitrates@agriculture.gov.ie (if emailing, **do not** send a copy by post). **PLEASE NOTE:** The only acceptable proof of postage will be Express Post Receipt or Registered Post Receipt.

IMPORTER(S) PLEASE NOTE: All importer details must be supplied. Importer breach of the 170kg limit N/ha/year may be liable to penalty. If the importer does not have a herd number, the area and LPIS number OR a map with adjacent LPIS number of the area question will be required.

Date of movement 2018	Type of fertiliser from Tables 7 and 8 of the Regulations (e.g. cattle or pig slurry)	Nutrient content of fertiliser (from Tables 7 or 8)		Quantity moved (m ³ , litres, gallons, kg, specify units used)	Total N kg	Total P kg	Confirmation that details of movement are correct	
		N kg/m ³	P kg/m ³				EXPORTER	IMPORTER(S) <i>(List if more than one importer)</i>
							Name: Herd No: Signature:	Name: Herd No: Signature:
							Name: Herd No: Signature:	Name: Herd No: Signature:
							Name: Herd No: Signature:	Name: Herd No: Signature:
Total N and P in Livestock Manures moved (kgs)								

¹ A copy of this record must be maintained by both the exporter and importer. The "exporter" is the farmer sending Livestock Manures out of his/her holding. The "importer" is the farmer taking it in.

RECORD OF MOVEMENT OF PIG AND/OR POULTRY MANURE DURING CLOSED PERIOD¹

Pig and Poultry Manure imported after the commencement of the closed period until 31st December will be considered inventory for the following year
IMPORTER(S) PLEASE NOTE: All importer details must be supplied. Importer breach of the 170kg limit N/ha/year may be liable to penalty. If the importer does not have a herd number, the area and LPIS number OR a map with adjacent LPIS number of the area question will be required.

Date of movement 2018	Type of fertiliser from Tables 7 and 8 of the Regulations (e.g. cattle or pig slurry)	Nutrient content of fertiliser (from Tables 7 or 8)		Quantity moved (m ³ , litres, gallons, kg, specify units used)	Total N kg	Total P kg	Confirmation that details of movement are correct	
		N kg/m ³	P kg/m ³				Name, Signature & Herd No are required for the Exporter and Importer(s) This form cannot be processed unless all details are supplied.	
							EXPORTER	IMPORTER(S) <i>(List if more than one importer)</i>
							Name: Herd No: Signature:	Name: Herd No: Signature:
							Name: Herd No: Signature:	Name: Herd No: Signature:
							Name: Herd No: Signature:	Name: Herd No: Signature:
Total N and P in Livestock Manures moved (kgs)								

¹ A copy of this record must be maintained by both the exporter and importer. The "exporter" is the farmer sending Livestock Manures out of his/her holding. The "importer" is the farmer taking it

**RECORD 4: Notification of Temporary Movement of Cattle or Sheep
(other than cattle moved under AIMS, sheep moved under normal procedures)**

The Nitrates Regulations have implications for farmers moving their animals (cattle and sheep) to another holding for grazing on a temporary basis. Farmers can obtain nitrates credit for the temporary movement of cattle and sheep by completing the Record 4. The rules applying for the notification of movement of cattle and sheep are stated overleaf.

Completed form to be forwarded to: Dept of Agriculture, Food and the Marine, Nitrates Section, Johnstown Castle Estate, Wexford Y35 PN52 on or before 31st December 2018 or emailed to nitrates@agriculture.gov.ie (if emailing, DO NOT send a copy by post). PLEASE NOTE: the only acceptable proof of postage will be Express Post Receipt or Registered Post Receipt.

Owner of holding from which animals moved:

Name: _____ Herd Number: _____

Address: _____

Owner of holding to which animals moved:

Name: _____ Herd Number: _____

Address: _____

LPIS Numbers of Land plots to which animals moved:

CATTLE Movements - Number of Cattle Moved: _____

Date of movement out: _____ Date of movement back: _____

Tag numbers of Cattle moved: (use extra sheet if necessary)

Signature of Owner/Keeper of holding from which animals moved: _____ Date: _____

Signature of Owner/Keeper of holding to which animals moved: _____ Date: _____

Record 5

Proof of 2018 Rental/Grazing Agreement (Nitrates Regulations)

Please complete and return by **31st December 2018** to: Nitrates Section, Dept of Agriculture, Food & the Marine, Johnstown Castle Estate, Wexford Y35 PN52 OR email to nitrates@agriculture.gov.ie (if emailing, **DO NOT** send a copy by post). **PLEASE NOTE:** The only acceptable proof of postage will be **Express Post Receipt or Registered Post Receipt.**

2018 Rental / Grazing Agreement Between:

Name of Land owner ("the transferor"):

Address:

Herd No:

*(NOTE: If the land owner does not have a herd number, a map of the area in question with townland name will be required showing **LPIS** Land Parcel Identification Number(s) of the land or the adjacent LPIS number).*

And

Name of Land user ("the transferee"):

Address:

Herd No:

Period of the Rental/Grazing Agreement:

Commencement date (after 31.5.2018): ____ / ____ / 2018 **End Date:** ____ / ____ / 2018

Note: A copy of the Rental/Grazing Arrangement shall be made available if requested

Location of Land Parcel(s) subject to the Agreement:

Townland(s) :

LPIS No(s)/Plot

No.

Map must be submitted

Signature of Transferor (land owner):

Signature of Transferee (land user):

Signature of Witness: **Date:**

Certification of mineral soils by FAS advisor whereby organic matter analysis is not required

The farmer should be provided with a copy of this certification of mineral soils and should retain with other records as set out in section 5 of this handbook.

Herdowner Name: _____

Herdowner address:

Herd Number: _____

LPIS parcel Numbers

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

FAS Advisor Name: _____

FAS Advisor Signature: _____

Date: _____

SECTION 6: Controls

Local Authorities are the bodies which carry primary responsibility for implementing these **Regulations** and may in this regard visit farms when undertaking their responsibilities. A person may be prosecuted for breaches of the **Regulations**.

The **Regulations** are also part of the Cross Compliance requirements under the Basic Payment Scheme and other area-based schemes. The Department of Agriculture, Food and the Marine by agreement with the Department of the Environment, Community and Local Government, has taken on responsibility for the undertaking of Cross Compliance inspections for the Basic Payment Scheme and other area-based schemes. In addition the Department carry out a proportion of farm inspections on behalf of local authorities.

Cross Compliance Inspections

Cross Compliance inspections for these **Regulations** are undertaken in conjunction with the other statutory management requirement measures applicable to each individual applicant. There is a checklist for these **Regulations** starting on page 51. This checklist is also to be found on the Departments website at www.agriculture.gov.ie Compliance infringements of a negligent nature, relating to the agricultural activity of the farmer or the agricultural area of the holding, may incur sanctions of 1%, 3% or 5% depending on the nature of the infringement. More serious breaches may incur a higher sanction. The penalty may be trebled in the case of the same infringement occurring more than once within 36 months of each other. While Local Authorities will not be undertaking Cross Compliance inspections, they are required under EU law to report breaches of these **Regulations**, which they may discover during inspections, to the Basic Payment Unit who will then determine if a sanction under the Basic Payment Scheme is appropriate.

Appeals

Farmers who are unhappy with the outcome of Cross Compliance decisions may appeal their cases to the Agriculture Appeals Office.

A breach of the **Regulations** may also put part or all of your payments under the Basic Payment Scheme and other area-based schemes at risk. If Local Authorities find farmers contravening these **Regulations**, they must report them to the Cross Compliance Unit of the Department of Agriculture, Food and the Marine.

SECTION 7: HELPSHEETS

See this Section for Helpsheets to check for yourself that you are complying with the **Regulations**.

HELPSHEET A

Have you enough storage capacity for organic fertilisers?

This Helpsheet takes you through what you need to do to work out whether you have enough storage capacity on your holding.

You need to make out a list of the kind of storage facilities you have for livestock manure and other organic fertilisers, soiled water and effluents from dungsteeds, farmyard manure pits or silage pits. You must also work out how much they can hold. Then you must work out whether you have enough storage to comply with the **Regulations**.

If you find that you have not got enough storage capacity then you must put matters right. There are a number of things you can do. Some of them are:

- building extra storage,
- renting storage capacity off your holding (exclusive access),
- reducing your livestock numbers to what you have enough storage for,
- outwintering in a way that meets the requirements of the **Regulations**.

Step 1: Working out how much slurry storage capacity you need for your livestock

Livestock type	No. of livestock during storage period ¹	Volume of slurry m ³ /week (Table 2 of Regulations)	Weeks storage required (16, 18, 20 or 22)	Total volume required m ³
	(a)	(b)	(c)	(d) = (a) x (b) x (c)
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 ²		0.03	6	
Mountain ewe ²		0.02	6	
Lamb-finishing ²		0.01	6	
Poultry - layers per 1,000 birds (30% DM)		0.81		
Breeding unit (per sow place)				
Integrated unit (per sow place)				
Finishing unit (per pig)				
Other (specify)				
Slurry storage capacity required (m ³)				A

¹ Average number of livestock over the prohibited spreading period or alternatively average number of livestock over the storage period beginning on a date nominated by the farmer between 15th October and 1st December (inclusive)

² 6 weeks storage is sufficient for sheep

Step 2: Working out how much storage capacity you require for rainfall and soiled water draining into the tank

The average net rainfall in **Table 4** of the **Regulations** is used to calculate the storage capacity required for rain falling directly (on a weekly basis) onto uncovered storage tanks and onto other surface areas draining to the storage tank.

Form 1B Storage capacity required for rainfall entering tank (m³)

Tank	Area of uncovered storage tank <i>plus</i> area of other surfaces draining to tank (m ²)	Millimetres per week	Weekly rainfall volume into storage tank (m ³)	Weeks storage required (16, 18, 20 or 22)	Additional storage required for rainfall m ³
	(a)	(b)	(c) = (a) x (b) /1000	(d)	(e) =(c x d)
Storage required for rainfall entering tank (m ³)					B

Step 3: Working out how much storage you need altogether

You can work out how much slurry storage capacity you need altogether (in m³) by adding **A** in Step 1 to **B** in Step 2. Write down the result here:

You may be able to reduce this to take account of any livestock that you have outwintered in accordance with the **Regulations**.

You must have 200mm freeboard in all covered tanks and 300mm freeboard in all uncovered tanks.

Step 4: How much slurry storage capacity have you got in covered tanks?

Tank	Length (m)	Breadth (m)	Depth – 200mm (m) ¹	Capacity m ³
	(a)	(b)	(c)	(d) = (a x b x c)
Total capacity of existing covered tanks (m ³)				C

¹ Freeboard specified for covered tanks (200mm)

Step 5: How much slurry storage capacity have you got in uncovered tanks?

Tank	Length (m)	Breadth (m)	Depth – 300mm (m) ¹	Capacity m ³
	(a)	(b)	(c)	(d) = (a x b x c)
Total capacity of existing uncovered tanks (m ³)				D

¹ Freeboard specified for uncovered tanks (300mm)

Step 6: How much slurry storage have you got in covered circular tanks?

Tank	Diameter (m)	Radius (m)	Depth – 200mm (m) ¹	Capacity m ³
	(a)	(b) = a/2	(c)	(d) = (b ² x 22/7 x c)
Total capacity of existing covered circular tanks (m ³)				E

¹ Freeboard specified for covered tanks (200mm)

Step 7: How much slurry storage have you got in uncovered circular tanks?

Tank	Diameter (m)	Radius (m)	Depth – 300mm (m) ¹	County Rainfall (m)	Nitrates zone (weeks)	Capacity m ³
	(a)	(b) = a/2	(c)	(d)	€	(f) = (b ² x 22/7 x c – (d*e))
Total capacity of existing covered circular tanks (m ³)						F

¹ Freeboard specified for uncovered tanks (300mm)

Step 8: How much slurry storage capacity have you got altogether?

You can work out the total storage capacity you have (in m³) by adding C from Step 4, D from Step 5, E from step 6 and F from step 7. Write down the result here:

Step 9: Have you got enough storage capacity?

Is the figure in the second box (Step 8 above) greater than the figure in the first box (Step 3) on page 40? If the answer is YES, then you are complying with the Regulations. If the answer is NO and you don't have any straw bedded housing which complies with the Regulations, then you do not have enough storage and you must do something about it — perhaps by building extra storage, by renting storage capacity off your own holding, by reducing your livestock numbers down to what you have enough storage for, or by outwintering in a way that meets the requirements of the Regulations.

Step 10: Have you got enough storage for dungsteads?

		Solid fraction			Seepage	
Livestock type	No. of livestock during storage period ¹	Solid fraction (m ³ /week) (Table 3 of Regulations)	Weeks storage required (16, 18, 20 or 22)	Dungstead capacity required (m ³)	Seepage fraction (m ³ /week) (Table 3 of Regulations)	Storage required (m ³) ¹
	(a)	(b)	(c)	(a x b x c)	(d)	(a x c x d)
Dairy cow		0.28			0.04	
Suckler cow		0.25			0.03	
Cattle > 2 years		0.23			0.02	
Cattle (18-24 months)		0.23			0.02	
Cattle (12-18 months)		0.13			0.01	
Cattle (6-12 months)		0.13			0.01	
Cattle (0-6 months)		0.07			0.01	
TOTAL MINIMUM CAPACITY REQUIRED (M³)						

¹Average number of livestock over the prohibited spreading period or alternatively average number of livestock over the storage period beginning on a date nominated by the farmer between 15th October and 1st December (inclusive)

Note: You must make an allowance for net rainfall (Table 4 of Regulations) during the specified storage period, for the surface area of the dungstead and also for the seepage tank if it is not covered.

HELPSHEET B

Working out whether you are within the limit of 170 kg of nitrogen to the hectare per year from livestock manure

If you follow the Steps on this Helpsheet, you can work out whether you are complying with the limit of 170 kg of organic nitrogen to the hectare per year.

Step 1: Working out the total nitrogen and phosphorus produced by grazing livestock on your holding

Grazing livestock	Annual average numbers	Nitrogen excretion (kg/year) (Table 6 of Regulations)	Total Nitrogen ¹ (kg)	Phosphorus excretion (kg/year) (Table 6 of Regulations)	Total Phosphorus ¹ (kg)
	(a)	(b)	(a x b)	(d)	(a x d)
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	
Other ³ (specify)					
Total N produced by grazing livestock			(a) ²		
Total P produced by grazing livestock					(b) ²

¹ The Annual Nitrogen and Phosphorous Statement from the Department of Agriculture, Food and the Marine will provide figures for the total amounts of nitrogen and phosphorus produced by all cattle on your holding.

² The available nitrogen or phosphorous to be taken into account as a source of such nutrients for the holding can be derived from these figures.

³ See **Table 6** of the **Regulations** for excretion rates for other livestock

Step 2: Working out the total nitrogen and phosphorus produced by non-grazing livestock on your holding

Non grazing livestock	Annual average numbers	Nitrogen excretion (kg/year) (Table 6 of Regulations)	Total Nitrogen (kg)	Phosphorus excretion (kg/year) (Table 6 of Regulations)	Total Phosphorus (kg)
	(a)	(b)	(a x b)	(d)	(a x d)
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	
Other ¹ (specify)					
Total nutrients produced by other livestock on the holding			(c)		(d)

¹ Contact the Department of Agriculture, Food and the Marine for excretion rates for other non-grazing livestock

Step 3: Are you within the 170 kg limit ?

Total N produced by grazing livestock (kg) (a from Step 1 page 44)	(e)
Total N produced by other livestock on the holding (kg) (c from Step 2 page 45)	(f)
Total N from SMC produced on the holding (kg) Based on amount of mushroom compost used	(g)
Total N produced on the holding (kg) (e + f + g)	(h)
Eligible area of the holding (ha)	(k)
Nitrogen from livestock manure produced on the holding kg/N/ha/yr (h / k)	(l)
Adjustments for import and export	
Total Nitrogen from imported livestock manure and SMC (kg) calculated from Record 3 page 31	(m)
Total Nitrogen in exported livestock manure and SMC (kg) calculated from Record 3 page 31	(n)
Total Nitrogen from livestock manure on the holding (produced on the holding and imported - exported) (h + m - n)	(o)
Nitrogen from livestock manure kg/N/ha/yr (o / k)	(p)

You have complied with the 170 kg N/ha/yr limit from livestock manure when (p) in this table is less than or equal to 170. However, if (l) is greater than 170 you must take action to achieve compliance by for example, reducing livestock numbers or taking extra land or exporting livestock manure or applying for a derogation.

HELPSHEET C

Calculating your grassland stocking rate and the maximum nitrogen and phosphorus allowed on the holding

Step 1: Working out your grassland stocking rate

Total N produced by grazing livestock (kg) [(a) from the table in Step 1 on page 44]	(a)
Eligible grassland area of the holding (ha)	(b)
Grassland stocking rate kg N/ha/year (a / b)	(c)

Step 2: Working out how much nitrogen you are allowed

To calculate the maximum available nitrogen allowance for grassland on your holding, select the appropriate fertilisation rate from **Table 12** of the **Regulations** corresponding to (c) from Step 1 above.

Grassland					
Grassland stocking rate (kg N/ha/year)	Area (ha)		Max. fertilisation rate available N (kg) (Table 12 of Regulations)		Total available N allowed (kg)
		x		=	
Maximum available nitrogen for grassland					(d)
Other Crops (including grass, cut only, no grazing livestock on holding)					
Crop	N Index (Table 10 of Regulations)	Area (ha)		Max. fertilisation rate available N (kg) (Tables 14, 16, 18, 20 of Regulations)	Total available N allowed (kg)
			x		=
			x		=
			x		=
			x		=
			x		=
			x		=
			x		=
			x		=
			x		=
			x		=
Maximum available nitrogen for crops on holding					(e)
Maximum available nitrogen for holding (d + e)					(f)

Step 3: How much available nitrogen can you bring into your holding?

<u>SOURCE OF NITROGEN</u>	Total N (kg)
<p>Available nitrogen from livestock manure other than grazing livestock and SMC produced on the holding</p> <p>(c) from Step 2 (page 45) X appropriate nitrogen availability as follows from Table 9: Pig and poultry X 0.5 SMC X 0.2</p>	(g)
<p>Maximum amount of available nitrogen (chemical and organic) that may be imported onto the holding</p> <p style="text-align: right;">(f from Step 2 on page 47) – g)</p>	(h)
Adjustments for import and export of organic fertilisers	
<p>Available nitrogen from organic fertiliser imported onto the holding</p> <p>Total N calculated from Record 3 (page 31) X appropriate nitrogen availability as follows from Table 9: Pig and poultry X 0.5 Farmyard manure X 0.3 SMC X 0.2 Cattle manure and other organic fertilisers X 0.4</p>	(i)
<p>Available nitrogen from organic fertiliser exported from the holding</p> <p>Total N calculated from Record 3 (page 31) X appropriate nitrogen availability as follows from Table 9: Pig and poultry X 0.5 Farmyard manure X 0.3 SMC X 0.2 Cattle manure and other organic fertilisers X 0.4</p>	(j)
<p>Maximum amount of nitrogen from chemical fertiliser for the holding</p> <p>(h - i + j)</p>	(k)

Step 4: Working out how much phosphorus you are allowed on your holding

To work out the maximum phosphorus allowance for grassland on your holding, select the appropriate fertilisation rate from **Table 13A or 13B if availing of P build-up of the Regulations (paying particular attention to Table footnotes)** corresponding to your grassland stocking rate (kg N/ha/yr; (c) from Step 1 on page 45).

Grassland						
Grassland stocking rate (kg N/ha/year)	P Index (Table 11 of Regulations)	Area (ha)		Max. P fertilisation rate (kg) (Table 13A and 13B of Regulations)		Total P allowed (kg)
			x		=	
			x		=	
			x		=	
			x		=	
			x		=	
			x		=	
			x		=	
Maximum phosphorus for grassland						(l)
Other Crops (including grass, cut only, no grazing livestock on holding)						
Crop	P Index (Table 11 of Regulations)	Area (ha)		Max. P fertilisation rate (kg) (Tables 15,17,19,21 of Regulations)		Total P allowed (kg)
			x		=	
			x		=	
			x		=	
			x		=	
			x		=	
			x		=	
Maximum phosphorus for crops on holding						(m)
Maximum phosphorus for holding				(l + m)		(n)

Step 5: How much phosphorus can you bring into your holding?

<i>SOURCE OF PHOSPHORUS</i>	Total P (kg)
Phosphorus from other livestock manure other than grazing livestock and SMC produced on the holding (d) from Step 2 on page 45) X appropriate phosphorus availability from Table 9²	(o)
Phosphorus from concentrated feedstuffs fed to grazing livestock on the holding during the previous year ³ . Phosphorus content is as provided by the feed supplier in the case of compound feedingstuffs, standard P value in the case of straight feedingstuffs or default P concentration of 0.5 kg P for each 100 kg fed	(p)
Total phosphorus produced on holding (o + p)	(q)
Maximum amount of phosphorus that may be imported onto the holding (n from step 4 page 49 – q)	(r)
Adjustments for import and export of organic fertilisers	
Phosphorus from organic fertiliser imported onto the holding Total P calculated from Record 3 (page 31) X appropriate phosphorus availability from Table 9²	(s)
Phosphorus in organic fertiliser exported from the holding Total P calculated from Record 3 (page 31) X appropriate phosphorus availability from Table 9²	(t)
Organic P spread from animals in form of slurry/FYM Organic P spread on index 1 and 2 soils x 0.5% availability	(u)
Maximum amount of phosphorus from chemical fertiliser for the holding (r - s + t + u)	(v)

² On phosphorus index 1 and 2 soils the phosphorus in organic fertilisers is considered to be 50% available

³ The first 300 kg concentrate used per dairy cow (or each 85 kg livestock manure N equivalent) can be discounted

Transitional provisions for the use of pig manure are outlined on page 23 of this handbook.

Cross Compliance Checklist

Minimisation of Soiled Water

- Is there evidence that clean water is not being diverted to a clean water outfall to minimise soiled water generation?

Livestock Manures and other Organic Fertilisers

- Is there visual evidence of inadequate collection of livestock manure, other organic fertilisers, soiled water or silage effluent?
- Is there visual evidence of inadequate management of the storage facilities for livestock manure, other organic fertilisers, soiled water or silage effluent?
- Is there visual evidence of structural defects in the storage facilities in use leading to direct or indirect runoff to groundwater or surface water?
- Is there evidence that farmyard manure is or has been stockpiled on land during the prohibited spreading period?
- Is the applicant availing of reduced storage through outwintering?
- Is the applicant meeting the outwintering requirements?
- Is there evidence that silage bales are stored outside of farmyards within 20m of a watercourse or drinking water abstraction point without adequate facilities for the collection and storage of effluent?
- Is there supplementary feeding of animals taking place within 20m of a watercourse or drinking water abstraction point?
- Is there supplementary feeding of animals taking place on bare rock?

Landspreading of Chemical and Organic Fertiliser

- Is there evidence that chemical fertiliser has been applied within 2 m of a surface watercourse?
- Is there evidence that organic fertiliser or soiled water has been applied within the minimum buffer zones for water extraction points as specified in the **Regulations**?
- Is there evidence that organic fertiliser or soiled water has been applied within 20 m of a lake shoreline or a turlough likely to flood?
- Is there evidence that organic fertiliser or soiled water has been applied within 15 m of exposed cavernous or karstified limestone features?
- Has organic fertiliser or soiled water has been applied within 5 m of a surface watercourse or other distances as specified in the **Regulations**?
- Has FYM, where stockpiled in a field, been stored in such a way or location that it breached the requirements of the **Regulations** including buffer zones?
- Is the holding importing/exporting organic manures?

Application Conditions of Organic Fertilisers

- Is there evidence of a poor spread pattern of livestock manure, other organic fertilisers or soiled water on the land?

- Is there evidence of the application of fertilisers or soiled water to land that is waterlogged, flooded, snow covered, frozen or when heavy rain is forecast?
- Is there evidence of the application of fertilisers or soiled water to steeply sloping ground where there is a risk of water pollution, when factors such as surface run-off pathways, the presence of land drains, the absence of hedgerows to mitigate surface flow, soil condition and ground cover are taken into account?
- Is there evidence of the application of organic fertiliser or soiled water using an upward facing splashplate, or sludge irrigator mounted on a tanker?
- Is there evidence of the application of organic fertiliser or soiled water from a road or passageway?
- Is there evidence of the application of soiled water in quantities exceeding 25,000 l/ha (3mm per hour by irrigation) in any 42 day period in extreme vulnerability areas or 50,000l/ha (5mm per hour by irrigation) in other areas?
- Is there evidence of the spreading of chemical fertiliser or organic fertiliser including farmyard manure during a prohibited period?

Ploughing and Green Cover

- Is there evidence that grassland has been ploughed between 16th October and 30th November?
- Is there evidence of insufficient emergence of green cover from a sown crop by 1st November after the ploughing of grassland between 1st July and 15th October?
- Is there evidence, where arable land has been ploughed between 1st July and 30th November, of insufficient emergence of green cover within 6 weeks of the ploughing?
- Is there evidence of insufficient emergence of green cover within 6 weeks of the application of a non-selective herbicide between 1st July and 30th November?
Note: In the case of seed crops and crops for human consumption where the contract prohibits the use of non-selective herbicide pre-harvest the requirement to provide green cover is reduced to 75% of the contract area after 15th October.
- Is there evidence of the complete removal of required green cover, which was established to comply with these **Regulations** by ploughing or the use of non-selective herbicide, before the 1st December unless a crop is sown within two weeks of its removal?
- Is there evidence of ploughing or cultivation for non-grass crops within 2m of a watercourse marked on the modern 1:5000 OSI mapping or better.

Other Issues

- Is there evidence that all required records are not being maintained correctly?
- Is there evidence of inadequate storage capacity for livestock manure and other organic fertilisers on or off the farm?
- Was the N limit from livestock manure exceeded on the holding in the relevant calendar year?
- Did the holding exceed the maximum fertilisation rate of available fertiliser in the relevant calendar year?

Nitrates derogation

Nitrates derogation allows the application of higher amounts of livestock manure than that provided for in the **Regulations** subject to certain conditions. Successful applicants will be able to apply livestock manure in excess of 170 kg N/ha in accordance with their fertiliser plan and up to a maximum of 250 kg N/ha.

Conditions of nitrates derogation:

There are a certain set of conditions that must be adhered to under the nitrates derogation which are as follows:

- An annual application for nitrates derogation must be made to the Department.
- The farm must have at least 80% grass
- Nitrates derogation is only available for farms with grazing livestock
- Nitrates derogation applicants **cannot** import livestock manure
- Soil samples must be taken as per the **Regulations** (1 sample every 5 ha and valid for 4 years)
- A fertiliser plan based on soil sample results must be in place by March 1st and must be submitted to the Department
- A farm map must be submitted indicating the location of individual fields and corresponding soil samples
- A farmyard sketch must be submitted showing manure storage facilities and livestock housing
- Fertiliser accounts must be submitted online no later than 31st March the following year

New conditions applying from 2018:

There are new requirements for derogation farmers from 2018 onwards under the 4th NAP which are as follows:

- 50% of all slurry produced on farm must be spread on or before 15th June
- Any slurry spread after 15th June must be spread using low emission slurry spreading equipment (LESS).
- All derogation farms must have sufficient storage required. If sufficient storage is not available then the nitrates derogation will be rejected