

For Northern Ireland farmers on the requirements of the Nitrates Directive Derogation from the livestock manure limit of 170kg Nitrogen per hectare per year.



Department of
**Agriculture and
Rural Development**

www.dardni.gov.uk

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Agency**
www.ni-environment.gov.uk

Introduction

In Northern Ireland the Nitrates Directive is implemented through the Nitrates Action Programme Regulations (Northern Ireland) 2006 (NAP Regulations). These Regulations include a limit on the amount of nitrogen from livestock manure that can be applied to land of 170kg N/ha/year on all farms.

In 2007 Northern Ireland was successful in securing a derogation (Commission Decision 2007/863/EC) to permit the land application of up to 250kg N/ha/year from grazing livestock manure under certain conditions. This derogation, introduced through the Nitrates Action Programme (Amendment) Regulations (2008), was underpinned by scientific justification showing that this fertilisation amount will not compromise the achievement of protecting and improving water quality on the basis that the following objective criteria apply to Northern Ireland:

- long growing seasons;
- crops with high nitrogen uptake;
- high net precipitation; and
- soils with exceptionally high denitrification capacity.

The derogation applies in tandem with the NAP Regulations. The derogation is granted for the period 2007-2010 and is dependent on the continued implementation of the NAP Regulations.

This Derogation Guidance Booklet provides details of what you are required to do under derogation. It is only applicable if you have received approval from Northern Ireland Environment Agency (NIEA) to operate under derogation, otherwise the livestock manure limit of 170kg N/ha/year under the NAP Regulations apply.

Cross-Compliance

The Nitrates Directive is one of the Cross-Compliance Statutory Management Requirements. Therefore, farmers with an approved derogation are required to comply with both the NAP and the Regulations as amended.

All farmers received a Nitrates Action Programme Guidance Booklet, as shown, in March 2007.



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Summary of measures required to comply with the Nitrates Action Programme and Nitrates Derogation

Verifiable standards	Key measures	
	Nitrates Action Programme Requirements for ALL farmers	Additional action required on derogated farms
Closed spreading periods	<p>Organic manure closed spreading period applies from the date at which required storage capacity is in place (31 December 2008 at the latest).</p> <ul style="list-style-type: none"> ■ Chemical nitrogen (N) fertiliser must not be applied between 15 September to 31 January. ■ Organic manures, excluding farmyard manure and dirty water, must not be applied between 15 October to 31 January. 	<ul style="list-style-type: none"> ■ Where the fertilisation plan indicates a proposal to disturb soil as part of grass cultivation, for example ploughing, there must be no application to that parcel of land of any organic manures, including farmyard manure and dirty water between 15 October in any year and 31 January of the following year.
Land application restrictions	<ul style="list-style-type: none"> ■ All fertilisers, chemical and organic, must not be applied: <ul style="list-style-type: none"> ● on waterlogged soils, flooded land or land liable to flood; ● on frozen ground or snow covered ground; ● if heavy rain is forecast; ● on steep slopes where other significant risks of water pollution exist. ■ Prevent entry of fertilisers to waters and ensure application is accurate, uniform and not in a location or manner likely to cause entry to waters. ■ Chemical fertilisers must not be applied within 1.5m of any waterway. 	

(continued)

Summary of measures required to comply with the Nitrates Action Programme and Nitrates Derogation

Verifiable standards	Key measures	
	Nitrates Action Programme Requirements for ALL farmers	Additional action required on derogated farms
Land application restrictions (continued)	<ul style="list-style-type: none"> ■ Organic manures including dirty water must not be applied within: <ul style="list-style-type: none"> ● 20m of lakes; ● 50m of a borehole, spring or well; ● 250m of a borehole used for a public water supply; ● 15m of exposed cavernous or karstified limestone features; ● 10m of a waterway other than lakes. This distance may be reduced to 3m where the slope is less than 10% towards the waterway and where organic manures are spread by bandspreaders, trailing shoe, trailing hose or soil injection or where adjoining area is less than one hectare in size or not more than 50m in width. ■ Application rates: <ul style="list-style-type: none"> ● No more than 50m³/ha (4500 gal/ac) or 50 tonnes/ha (20 t/ac) of organic manures to be applied at one time with a minimum of three weeks between applications; ● No more than 50m³/ha (4500 gal/ac) of dirty water to be applied at one time with a minimum of two weeks between applications. ■ Slurry can only be spread by inverted splashplate, bandspreaders, trailing shoe, trailing hose or soil injection. ■ Dirty water to be spread by same methods as slurry and by irrigation. ■ Sludgigators must not be used. 	

Summary of measures required to comply with the Nitrates Action Programme and Nitrates Derogation

Verifiable standards	Key measures			
	Nitrates Action Programme Requirements for ALL farmers			Additional action required on derogated farms
Nitrogen (N) fertiliser crop requirement	Maximum kg N/ha on grassland			
	Year	2007	2009	2010
	Dairy farms*	289 (8 ³ / ₄ bags/ac)**	281 (8 ¹ / ₂ bags/ac)	272 (8 ¹ / ₄ bags /ac)
	Other farms	239 (7 ¹ / ₄ bags/ac)	231 (7 bags/ac)	222 (6 ³ / ₄ bags/ac)
	<p>(N from organic manures other than livestock must be subtracted from these limits.)</p> <p>* More than 50% of N in livestock manure comes from dairy cattle</p> <p>** Approximate number of 50kg bags of a 27% N type fertiliser</p> <p>For non-grassland crops, the crop requirement as determined by RB209, must not be exceeded.</p>			
	<ul style="list-style-type: none"> Derogated farms must not exceed 272kg N/ha/year (8¹/₄ bags/ac) from chemical fertiliser on grassland on dairy farms. Other derogated livestock farms must not exceed 222kg N/ha/year (6³/₄ bags/ac) from chemical fertiliser on grassland. <p>(N from organic manures other than livestock must be subtracted from these limits.)</p>			
Nitrogen livestock manure limits	<ul style="list-style-type: none"> 170kgN/ha/year farm limit. 			<ul style="list-style-type: none"> Derogated farms must operate below 250kg N/ha/year from grazing livestock manure (cattle, excluding veal calves, sheep, deer, goats and horses). All other livestock must operate below 170kg N/ha/year.

Summary of measures required to comply with the Nitrates Action Programme and Nitrates Derogation

Verifiable standards	Key measures	
	Nitrates Action Programme Requirements for ALL farmers	Additional action required on derogated farms
Livestock manure storage requirements (continued)	<p>Required storage capacity must be in place by 31 December 2008 at the latest.</p> <ul style="list-style-type: none"> ■ 26 weeks for pig and poultry enterprises. ■ 22 weeks for other enterprises. ■ Provided certain criteria are met there are allowances for out-wintering, animals in bedded accommodation, separated cattle slurry, renting additional tanks and exporting slurry to approved outlets. ■ Storage must be maintained to prevent seepage or run-off. ■ New or substantially enlarged or reconstructed stores must comply with Silage, Slurry and Agricultural Fuel Oil (SSAFO) (Northern Ireland) Regulations, 2003. ■ Farmyard manure and poultry litter can be stored in fields where the next application is to take place but for no longer than 180 days. It must not be stored in the same location of the field year after year. Poultry litter must be covered with an impermeable membrane within 24 hours of placement in the field. The storage of poultry litter to be reviewed by 31 December 2008. Heaps must not be stored within: <ul style="list-style-type: none"> ● 50m of lakes; ● 20m of a waterway; ● 50m of a borehole, spring or well; 	

(continued)

Summary of measures required to comply with the Nitrates Action Programme and Nitrates Derogation

Verifiable standards	Key measures	
	Nitrates Action Programme Requirements for ALL farmers	Additional action required on derogated farms
Livestock manure storage requirements	<ul style="list-style-type: none"> ● 250m of a borehole used for a public water supply; ● 50m of exposed cavernous or karstified limestone features. ■ Provide storage for dirty water during periods when conditions for land application are unsuitable. 	
Land management	<ul style="list-style-type: none"> ■ Crop and soil management to minimise soil erosion and nutrient run off. 	<ul style="list-style-type: none"> ■ At least 80% of controlled agricultural area must be grassland. <p>In addition a controller of a derogated farm must ensure that:</p> <ul style="list-style-type: none"> ■ temporary grassland is only ploughed in spring; ■ ploughed grass is followed immediately by a crop with a high nitrogen demand; ■ crop rotation does not include leguminous or other plants fixing nitrogen except for grassland with less than 50% clover and to areas with cereals and peas undersown with grass.

Summary of measures required to comply with the Nitrates Action Programme and Nitrates Derogation

Verifiable standards	Key measures	
	Nitrates Action Programme Requirements for ALL farmers	Additional action required on derogated farms
Record keeping	<ul style="list-style-type: none"> ■ Agricultural area, field size and location. ■ Cropping regimes and areas, Soil Nitrogen Supply (SNS) index for crops other than grassland. ■ Livestock numbers, type, species and time kept. ■ Organic and chemical fertiliser details including imports and exports. ■ Storage capacity and where applicable associated evidence to support allowances to reduce capacity. ■ Evidence of right to graze common land. ■ Records to be ready by 30 June each year for period 1 January to 31 December of previous year. ■ Records from previous five calendar years to be retained for inspection. <p>Note that many of the records already exist on farms, for example, IACS, herd and flock records and fertiliser receipts.</p>	<p>To become a derogated farm a controller must apply to NIEA by the 7 July 2008 for the 2008 year, 1 March 2009 for 2009 year and 1 March 2010 for 2010.</p> <p>A controller of a derogated farm must:</p> <p>Prepare and have available on-farm a fertilisation plan by 9 June 2008 for 2008 and 1 March for 2009 and/or 2010. It must include:</p> <ul style="list-style-type: none"> - planned average stock numbers for the year; - description of housing and storage system; - volume of livestock manure storage; - planned livestock manure N and P to be produced on the farm; - planned areas of grass and other crops to be grown and area noted on farm map; - N and P requirements of crop to be grown; - soil analysis results when available. - organic manure to be imported or exported;

(continued)

Summary of measures required to comply with the Nitrates Action Programme and Nitrates Derogation

Verifiable standards	Key measures	
	Nitrates Action Programme Requirements for ALL farmers	Additional action required on derogated farms
Record keeping (continued)		<ul style="list-style-type: none"> - planned N and P applications from livestock manure over each uniform area of soil type and crop; and - planned N and P to be applied from chemical and other organic manures over each uniform area of soil type and crop. <p>Plans to be revised no later than seven days detailing any changes in agricultural practices.</p> <p>Prepare and submit a fertilisation account to NIEA each year by 1 March for the previous calendar year. It must include:</p> <ul style="list-style-type: none"> - N requirement of crops grown; - N chemical fertiliser usage; - type and number of livestock; - quantity and type of organic manure imported and exported; - the amount of P in agricultural products entering and leaving the farm, for example, concentrates, milk, livestock, eggs, livestock manures, fertilisers, forages and crops; and - how dirty water is managed.

Summary of measures required to comply with the Nitrates Action Programme and Nitrates Derogation

Verifiable standards	Key measures	
	Nitrates Action Programme Requirements for ALL farmers	Additional action required on derogated farms
Phosphorus balance	Not applicable	Derogated farms must not exceed a surplus of 10kg phosphorus per hectare per year on a derogated holding.
Compliance with notices	Any notice served under the NAP Regulations must be complied with.	Any notice served under the NAP Regulations must be complied with.

Definitions

Grassland farms - holdings where 80% or more of the agricultural area available for manure application is grass.

Grazing livestock - cattle (with the exclusion of veal calves), sheep, deer, goats and horses.

Grass - permanent grassland or temporary grassland (temporary implying leys of less than four years).

Throughout this booklet for example purposes the following farm scenario is used:

61ha agricultural area controlled

56.78ha of grassland controlled

100 dairy cows

5 cattle over 2 years

30 cattle 1-2 year olds

30 cattle under 1 year

1 broiler house finishing 132,000 birds per annum

Exports 100 tonnes of broiler litter off-farm

Control

The controller of the land is responsible for complying with the rules. The owner of land is assumed to be the controller and responsible for the land from 1 January to 31 December unless evidence can be provided to the contrary. This evidence can either be if you are claiming Single Farm Payment (SFP) on the land for that period, or there is a written agreement between you and the

owner, establishing control of that land. This agreement should clearly identify the two parties, the exact location and area of the land and the calendar year(s) to which it applies. A written agreement should transfer the responsibility for compliance with the NAP and Phosphorus Regulations 2006 only and does not affect other SFP obligations.

Example Scenarios:

	Controlled by land owner	Controlled by tenant
No claims of SFP on land	✓	
Land owner claims SFP on owned land	✓	
Land owner not claiming SFP lets land out and tenant claims SFP		✓
Land owner claiming SFP but with a written agreement can transfer control to tenant		✓

There can be only one controller in the year. If land is farmed by farmers other than the controller it still remains the responsibility of the controller to ensure compliance. For example, if the controller allows another farmer to grow winter cereals on the land, the controller must ensure that the farmer growing the winter cereals complies with the Regulations.

For claimants of SFP remember that all land farmed must be included on the IACS form.

Applying for a derogation

When must I apply for a derogation?

In 2008 farmers have until **7 July** to apply. In 2009 and 2010 farmers who want to benefit from a derogation must submit an application to NIEA each year by the 1 March.

When can I expect a decision on my application?

Within 28 days of receipt of application. Applications received after the 1 March or incomplete applications cannot be accepted.

If my application is refused what can I do?

You must adjust your management of your farm to comply with the 170kg N/ha/year limit.

You also have the right to appeal against an NIEA decision to refuse your application for derogation. You can do this by contacting the Water Appeals Commission within 28 days of the refusal. The appeal should contain, or be accompanied by, a statement of the grounds of appeal. The Water Appeals Commission has powers to overturn the refusal or dismiss the appeal.

Farmers may wish to consider taking legal advice before making an appeal. Legal advice would be sought at your own expense. Any queries on the legal interpretation of the regulations and on their enforcement should be made to NIEA.

Completing the application form

Further information can be found in the Nitrates Action Programme Guidance Booklet. Page references mentioned throughout are from this Booklet.

Both boxes in Section B must be filled in or the application will be considered incomplete. Where boxes in Sections C and D are left blank it will be assumed that there is nothing to declare. If subsequently it becomes apparent that something should have been declared in boxes that are left blank this will be considered a false declaration and may affect your derogation approval.

To be eligible for derogation, 80% or more of the agricultural area of your holding under your control must be grassland. Only land that you own is assumed to be under your control unless evidence can be proved to the contrary.

1. i. Agricultural area of your holding under your control this year (hectares):

State the agricultural area of your holding under your control this year in hectares.

ii. Grassland area of your holding under your control this year (hectares):

State the area in hectares of grassland area only under your control this year. (Definition of grassland, Page 41 of the Nitrates Action Programme Guidance Booklet 2007). This area will be determined based on the crop grown for the majority of the year.

Applying for a derogation

Sample form



Northern Ireland
Env
Agency

DATE STAMP
(For official use only)

File Reference
(For official use only)

Example of the Nitrates Derogation Application Form 2009

SECTION A

Name: _____ JOHN SMITH _____
Address: _1 BIGFARM ROAD _____
_____ BALLYHOME _____

Post Code _ BT2 7AG _____

DARD Business Ref No.: _675256
Telephone: _028 2365 8253 _____
Mobile: _____ 07412 345678 _____
E-mail: _____

Write your name, address, DARD business reference number and contact information. Please complete in **BLOCK CAPITALS**.

Sample form

SECTION B: AGRICULTURAL AREA DETAILS

1.
 - i. Agricultural area of your holding under your control in 2009 (hectares)
 - ii. Grassland area of your holding under your control in 2009 (hectares)

61 (A)

56.78 (B)

Applying for a derogation

You cannot apply more than 250kg nitrogen/ha/year from grazing livestock manure to land. This includes application by the animal itself. Grazing livestock means cattle (with the exception of veal calves), sheep, deer, goats and horses. You may apply for derogation in respect of grazing livestock only, so this figure should not include nitrogen produced from non-grazing livestock such as pigs or poultry. If your **grazing livestock** stocking rate is greater than 250kg nitrogen/ha/year, you will have to make alternative arrangements to deal with the surplus. (Method to calculate your livestock manure nitrogen loading can be found on Pages 17 and 47-58 of the Nitrates Action Programme Guidance Booklet and also the online calculator at www.ruralni.gov.uk).

2. Estimated nitrogen produced from grazing livestock manure on your holding this year (kgs).

State the nitrogen that you predict will be produced from grazing livestock only on your holding this year. Use the amount recorded in the previous year unless you anticipate any substantial change in stocking levels this year.

3. How much nitrogen from grazing livestock manure do you intend to import onto your holding this year (kgs)?

State any nitrogen from grazing livestock manure in kilograms that you predict will be imported onto your holding this year. Remember all farmers in Northern Ireland must keep records of imported manures (Page 33 and 94 of the Nitrates Action Programme Guidance Booklet). If you do not intend to import any grazing livestock manure onto your holding this year **put a line through this box.**

4. How much nitrogen from grazing livestock manure do you intend to export from your holding this year (kgs)?

You may choose to export surplus grazing livestock manure in which case state any surplus of nitrogen to be exported in kilograms this year. Remember all farmers in Northern Ireland must keep records of exported manures (Page 33 and 94 of Nitrates Action Programme Guidance Booklet). If you do not intend to export any grazing livestock manure from your holding this year **put a line through this box.**

Applying for a derogation

Sample form

SECTION C: GRAZING LIVESTOCK MANURE DETAILS

2. Estimated Nitrogen produced from grazing livestock manure on your holding in 2009 (kgs)
3. How much Nitrogen from grazing livestock manure do you intend to import onto your holding in 2009 (kgs)?
4. How much Nitrogen from grazing livestock manure do you intend to export from your holding in 2009 (kgs)?

Applying for a derogation

You cannot apply more than 170kg Nitrogen/ha/year from non-grazing livestock manure to land. This includes application by the animal itself. Grazing livestock means cattle (with the exception of veal calves), sheep, deer, goats and horses. Non-grazing livestock should include all other livestock such as pigs and poultry. You must have sufficient land to meet both these limits. If your non-grazing livestock stocking rate is greater than 170kg Nitrogen/ha/year, you will have to make alternative arrangements to deal with the surplus. (Method to calculate your livestock manure nitrogen loading can be found on Pages 17 and 47-58 of the Nitrates Action Programme Guidance Booklet and also the online calculator at www.ruralni.gov.uk). However, it should be noted that all of the farm will be subject to all of the conditions of the derogation.

5 Estimated nitrogen produced from non-grazing livestock manure on your holding this year (kgs):

State the nitrogen that you predict will be produced from non grazing livestock only on your holding this year. Use the amount recorded in the previous year unless you anticipate any substantial change in stocking levels this year. If you do not have non-grazing livestock **put a line through this box.**

6 How much nitrogen from non-grazing livestock manure do you intend to import onto your holding this year (kgs)?:

State any nitrogen from non-grazing livestock manure in kilograms that you predict will be imported onto your holding this year. Remember all farmers in Northern Ireland must keep records of imported manures (Page 33 and 94 of the Nitrates Action Programme Guidance Booklet). If you do not intend to import any non-grazing livestock manure onto your holding this year **put a line through this box.**

7 How much nitrogen from non-grazing livestock manure do you intend to export from your holding this year (kgs)?:

You may choose to export surplus non-grazing livestock manure in which case state any surplus of Nitrogen to be exported in kilograms this year. Remember all farmers in Northern Ireland must keep records of exported manures (Page 33 and 94 of the Nitrates Action Programme Guidance Booklet). If you do not intend to export any non-grazing livestock manure from your holding this year **put a line through this box.**

You should read the leaflet on terms and conditions carefully before signing the declaration/undertaking. By signing this declaration and submitting your application to NIEA, you are accepting that you have understood the conditions attached to the granting of a derogation, that you are eligible to obtain a derogation and that you will meet the terms and conditions relating to the derogation this year.

Applying for a derogation

Sample form

SECTION D: NON-GRAZING LIVESTOCK MANURE DETAILS

5. Estimated Nitrogen produced from non-grazing livestock manure on your holding in 2009 (kgs)
6. How much Nitrogen from non-grazing livestock manure do you intend to import onto your holding in 2009 (kgs)?
7. How much Nitrogen from non-grazing livestock manure do you intend to export from your holding in 2009? (kgs)?

Sample form

SECTION E: DECLARATION/UNDERTAKING TO BE COMPLETED BY APPLICANT

I declare that, to the best of my knowledge, the particulars given by me in this form are correct at this time and that I undertake to comply with all the derogation conditions set out in the summary of the measures attached.

SIGNED: _____ DATE: _____

Completed application forms to be submitted on or before **1 March 2009** to
NIEA–Water Management Unit, Agricultural Regulation Team, 17 Antrim Road, Lisburn, BT28 3AL

Applying for a derogation

Checking the eligibility of your application

Ensure that nitrogen from grazing and non-grazing livestock manure does not exceed the 250kg N/ha/yr and 170kg N/ha/yr limits.

Using an example of a farm with 100 dairy cows and followers, and a 20,000 broiler unit selling 132,000 birds per annum and exporting 100 tonnes of litter off the farm.

Land requirements for grazing livestock manure:

$$C + D - E \text{ divided by } 250\text{kg N/ha/year}$$

$$(11,350 + 0 - 0 \text{ divided by } 250\text{kg N/ha/year equals a land requirement of } 45.4\text{ha})$$

Land requirements for non-grazing livestock:

$$F + G - H \text{ divided by } 170\text{kg N/ha/year}$$

$$(5095 + 0 - 3000 \text{ divided by } 170\text{kg N/ha/year equals a land requirement of } 12.3\text{ha})$$

Minimum land requirement for the farm to comply with derogation equals the land requirement for grazing and non-grazing livestock manure ($45.4 + 12.3 = 57.7\text{ha}$)

Agricultural area of the example farm is 61ha and therefore can comply.

If the land area requirement is greater than the actual agricultural area of the farm then steps must be taken to reduce the livestock manure nitrogen.

What happens if the figures in my application form change? Do I have to notify NIEA?

No. However you must ensure that you continue to comply with the terms of the derogation including having 80% grassland and operating at below 250kg grazing livestock manure N and below 170kg non-grazing livestock manure N per hectare per year.

What must I do to comply

Are there any phosphorus controls?

Yes. Every farm must not exceed a phosphorus (P) balance of 10kg phosphorus per hectare per year.

(To convert kg of phosphate to kg of phosphorus multiply by 0.436)

What is a P balance and how do I calculate it?

A P balance is the difference between the amount of P entering and leaving the farm expressed over the agricultural area.

It is calculated by subtracting the kg of P leaving the farm in product (for example, milk, cull cows, calves, pigs, broilers) from the kg of P entering the farm in inputs (for example, concentrates or fertiliser) then dividing the difference by the agricultural area in hectares (ha).

The balance includes all inputs and exports from all enterprises on the farm.

The P content of inputs and outputs are found in Annex C Page 55 and a full example in Annex D Page 58. For further assistance in calculating a P balance for your farm see www.ruralni.gov.uk.

What is a fertilisation plan?

A fertilisation plan must be kept on the farm. This plan is not submitted to NIEA. It must be prepared and made available for inspection by 1 March on farms in each calendar year.

The fertilisation plan must include the following:

- (1) planned average stock numbers for the year;
- (2) description of housing and storage system;
- (3) volume of livestock manure storage;
- (4) planned livestock manure N and P to be produced on the farm;
- (5) planned areas of grass and other crops to be grown and area noted on farm map;
- (6) N and P requirements of crop to be grown;
- (7) soil analysis results when available;
- (8) amount and type of organic manure to be imported or exported;
- (9) planned N and P applications from manure over each uniform area of soil type and crop; and
- (10) planned N and P to be applied from chemical and other organic manures over each uniform area of soil type and crop.

An example of a fertilisation plan is found in Annex A Page 25.

What must I do to comply

What if my management differs from my plan?

Plans must be revised no later than seven days following any changes in agricultural practices to ensure consistency between plans and actual agricultural practices. Always ensure that any change in management does not cause a breach of the derogation and the NAP Regulations as amended. NIEA do not need to be contacted if changes are made.

If you do not intend to make significant changes to your farm practice the records for the previous year may form the basis of next year's plan.

What is a fertilisation account?

The fertilisation account is primarily a summary of the fertiliser used in the previous calendar year. A fertilisation account must be prepared and submitted to NIEA each year by 1 March for the previous calendar year. It must include:

- N requirement of crops grown;
- N chemical fertiliser usage;
- type and number of livestock;
- quantity and type of organic manure imported and exported;
- the amount of P in agricultural products entering and leaving the farm, for example, concentrates, milk, livestock, eggs, livestock manures, fertilisers, forages and crops; and
- how dirty water is managed.

An example of a fertilisation account is found in Annex B Page 48.

What limits are there on the application of nitrogen fertiliser to grassland?

The maximum amount of nitrogen from chemical fertiliser and organic manure other than livestock manures that can be applied on the grassland area depends on the type of livestock on the farm. When calculating the livestock manure loading, if more than 50% of the annual total nitrogen in livestock manures comes from dairy cows and dairy heifer replacements, use the dairy farm nitrogen limit. All other livestock farms must use the other livestock farm nitrogen limit.

Under the derogation the limits are as follows:

	Maximum kg N/ha
Dairy Farms*	272 (8 ¹ / ₄ bags /acre**)
Other Livestock Farms	222 (6 ³ / ₄ bags/acre**)

*More than 50% of N in livestock manure comes from dairy cattle

** Approximate number of 50kg bags of a 27% N type fertiliser

The maximum amount of nitrogen fertiliser for grassland takes into consideration the application of livestock manures regardless of type. Therefore livestock manures applied to grassland should not be subtracted from the grassland limits.

If organic manures other than livestock manures for example, sewage sludge are applied the nitrogen from this manure must be subtracted. (You should be aware that most of these organic manures fall within the scope of waste legislation when applied to land for agricultural benefit. In such cases, an exemption from

What must I do to comply

waste management licensing is required from Northern Ireland Environment Agency (NIEA). The application of these manures is restricted to grass/crop requirement for both nitrogen and phosphorus, and the farmer must provide evidence of the nitrogen and phosphorus content).

The nitrogen limits are maximum nitrogen limits for the whole area of grassland and not individual fields.

What limits are there on the application of nitrogen fertiliser for crops?

Please refer to Page 19 of the Nitrates Action Programme Guidance Booklet.

What limits are there on the application of chemical phosphorus fertiliser?

Please refer to Page 20 of the Nitrates Action Programme Guidance Booklet.

Application of manure and fertilisers

Is soil sampling required?

P analysis must be performed at least every four years for each uniform area of the farm, with regard to crop rotation and soil characteristics. At least one analysis per four hectares of farmland is required.

Taking a soil sample for laboratory testing for nitrogen is not required as the limit for grassland takes into consideration the amount in the soil. Similarly in the case of crops the Soil Nitrogen Supply (SNS) indicates the amount of nitrogen in soil. (Refer to Annex H Pages 65–66 in the Nitrates Action Programme Guidance Booklet).

Land management

Can I apply manure in the autumn before ploughing grass?

Ploughing grass swards after a manure application can lead to poor nutrient uptake from the resulting reseed. To minimise the loss of nutrients, manure should be applied after ploughing only. This means that on a derogated holding, where the fertilisation plan indicates a proposal to disturb soil as part of grass cultivation, for example ploughing, there must be no application to that parcel of land of any organic manures, including farmyard manure and dirty water, between 15 October in any year and 31 January of the following year.

What must I do to comply

Can I plough grassland at any time of the year?

No. To minimise the potential for nitrogen leaching, grass swards less than four years old can only be ploughed in spring.

Ploughed grass on all soil types must be followed immediately by a crop with a high nitrogen requirement. This prohibits crops such as peas or beans which have no nitrogen requirement.

Can I grow leguminous or other plants fixing atmospheric nitrogen?

Growing nitrogen fixing plants may result in an excessive amount of nitrogen being applied to grass or crops. Therefore these plants, for example, beans and lucerne, must not be grown. However grassland with less than 50% clover and cereals and peas undersown with grass is allowed.

Inspection and enforcement

Who will be responsible for inspection and enforcement?

As with the Nitrates Action Programme Regulations, NIEA (formerly Environment and Heritage Service), an agency within the Department of the Environment (DOE), is responsible for carrying out inspection and enforcement of the derogation. NIEA will operate under the guidelines as explained in Section 2 Pages 36-40 of the Nitrates Action Programme Guidance Booklet.

Who will be inspected?

It is a requirement of the EC Decision that all farms operating under the derogation will be subject to administrative control. NIEA will carry out these checks on the application form and fertiliser accounts submitted to them by every farmer under the derogation.

At least 3% of farms who have been granted a derogation will be inspected. Farms will be selected on the basis of risk. NIEA will carry out a risk assessment to identify a list of farmers who will be visited under Cross-Compliance.

What happens if my farm is non-compliant?

NIEA will seek to work co-operatively with farmers to secure improved practice on the farm. NIEA acknowledges, however, that unfortunately enforcement action will need to be taken in some cases to ensure compliance. Any enforcement action will be in accordance with the NIEA Enforcement and Prosecution Policy for Environmental Protection which can be found on www.ni-environment.gov.uk or you can contact NIEA. See Annex E, page 59.

Compliance with the terms of the derogation under the Nitrates Directive is a Statutory Management Requirement under Cross-Compliance. Non-compliance with the terms of the derogation may therefore result in a reduction of your Single Farm Payment.

Further information on inspections and enforcement can be found in Section 2 of the Nitrates Action Programme Guidance Booklet.

Annex A

The following pages are an example format of a **fertilisation plan**.

The information can be presented in other formats if preferred.

1 Planned average stock numbers and livestock manure N and P produced on-farm

Livestock manure N and P to be produced by dairy cattle per year.

Only complete this table if you keep these livestock.

1. Multiply the planned number of livestock in column (A) by the N produced / head / year column (B). Enter total in column (C).
2. Multiply the planned number of livestock in column (A) by the P produced / head / year column (D). Enter total in column (E).
3. Total the N produced/year in column (C).
4. Total the P produced/year in column (E).

Livestock type	Planned average per year	N produced/ head/year (kg N)	Total N produced (kg/year)	P produced/ head/year (kg P)	Total P produced (kg/year)
Dairy cattle	(A)	(B)	(C) (A)x(B)	(D)	(E) (A)x(D)
Dairy cow	100	91	9100	16.6	1660
Dairy heifer (over 2 years)	5	54	270	10.1	50.5
Dairy heifer (1-2 years)	30	47	1410	7.9	237
Breeding bull		54		10.1	
Heifer calves 6-12 months	30	12	360	3.0	90
Heifer calves 0-6 months	30	7	210	1.7	51
		Total N produced from dairy cattle	= 11,350	Total P produced from dairy cattle	= 2088.5

Livestock Manure N and P to be produced by beef cattle per year.

Only complete this table if you keep these livestock.

1. Multiply the planned number of livestock in column (A) by the N produced / head / year column (B). Enter total in column (C).
2. Multiply the planned number of livestock in column (A) by the P produced / head / year column (D). Enter total in column (E).
3. Total the N produced/year in column (C).
4. Total the P produced/year in column (E).

Livestock type	Planned average per year	N produced/ head/year (kg N)	Total N produced (kg/year)	P produced/ head/year (kg P)	Total P produced (kg/year)
Beef cattle	(A)	(B)	(C) (A)x(B)	(D)	(E) (A)x(D)
Suckler cows		54		10.1	
Cattle (over 2 years)		54		10.1	
Cattle (1-2 years)		47		7.9	
Breeding bull		54		10.1	
Bull beef 6-13 months		23		5.8	
Cattle 6-12 months		12		3.0	
Cattle 0-6 months		7		1.7	
		Total N produced from beef cattle	=	Total P produced from beef cattle	=

Note: This list is not exhaustive - refer to Regulations for other categories of livestock type

Livestock manure N and P to be produced by sheep per year.

Only complete this table if you keep these livestock.

1. Multiply the planned number of livestock in column (A) by the N produced / head / year column (B) enter total in column (C).
2. Multiply the planned number of livestock in column (A) by the P produced / head / year column (D) enter total in column (E).
3. Total the N produced in column (C).
4. Total the P produced in column (E).

Livestock type	Planned average per year	N produced/ head/year (kg N)	Total N produced (kg/year)	P produced/ head/year (kg P)	Total P produced (kg/year)
Sheep	(A)	(B)	(C) (A)x(B)	(D)	(E) (A)x(D)
Ewe (over 1 year)		9		1.0	
Ram (over 1 year)		9		1.0	
Lamb (6-12 months)		3.2		0.3	
Lambs (0-6 months)		1.2		0.3	
		Total N produced from sheep	=	Total P produced from sheep	=

Livestock manure N and P to be produced by deer/goats or other grazing livestock per year.

Only complete this table if you keep these livestock.

1. Multiply the planned number of livestock in column (A) by the N produced / head / year column (B). Enter total in column (C).
2. Multiply the planned number of livestock in column (A) by the P produced / head / year column (D). Enter total in column (E).
3. Total the N produced / year in column (C).
4. Total the P produced / year in column (E).

Livestock type	Planned average per year	N produced/ head/year (kg N)	Total N produced (kg/year)	P produced/ head/year (kg P)	Total P produced (kg/year)
Deer	(A)	(B)	(C) (A)x(B)	(D)	(E) (A)x(D)
Deer (red) over 2 years		25		4	
Deer (red) 6 months – 2 years		13		2	
Deer (fallow) over 2 years		13		2	
Deer (fallow) 6 months – 2 years		7		1	
Deer (sika) over 2 years		10		2	
Deer (sika) 6 months – 2 years		6		1	
Goats					
Goats		9		1	
Other livestock					
		Total N produced from deer/goats or other grazing livestock	=	Total P produced from deer/goats or other grazing livestock	=

Note: This list is not exhaustive - refer to Regulations for other categories of livestock type

Livestock manure N and P to be produced by horses per year.

Only complete this table if you keep these livestock.

1. Multiply the planned number of livestock in column (A) by the N produced / head / year column (B). Enter total in column (C)
2. Multiply the planned number of livestock in column (A) by the P produced / head / year column (D). Enter total in column (E)
3. Total the N produced / year in column (C).
4. Total the P produced / year in column (E).

Livestock type	Planned average per year	N produced/ head/year (kg N)	Total N produced (kg/year)	P produced/ head/year (kg P)	Total P produced (kg/year)
Horses	(A)	(B)	(C) (A)x(B)	(D)	(E) (A)x(D)
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	
		Total N produced from horses	=	Total P produced from horses	=

Planned livestock numbers and livestock manure N and P to be produced by pigs per year.

Only complete if you keep these livestock.

1. Select from either Breeding and rearing; or growing and finishing, depending on the system on your farm.
2. Enter the planned number of pigs on the farm for the year in column A, and calculate the total number of pigs planned to be sold in column F.
3. Calculate the total number of pigs planned to be sold per year and select the N and P figure for your rearing system.
4. Multiply the planned average number per year by the N and P produced per head.
5. Total the N produced/year in column (C). Total the P produced/year in column (E).

Livestock type	Breeding and rearing farms ONLY						
	Planned average per year	N produced/ head/year (kg N)	Total N produced (kg/year)	P produced/ head/year (kg P)	Total P produced (kg/year)		
Pigs	(A)	(B)	(C) (A)x(B)	(D)	(E) (A)x(D)		
Boars ²		16		4.2			
Maiden Gilts ²		13		5.7			
Breeding sows ² (and piglets to weaning)		19.5		8.7			
		Total N		Total P			
Use the table below to calculate total number of pigs sold per year and calculate the N and P produced from these pigs.							
Pigs sold per year	Average no. sows	Planned average no. pigs sold per sow/year (F)	Planned total no. pigs sold per year	N produced/ head (kg N) * Select	Total N produced per year (kg N)	P produced/ head/year (kg P)	Total N produced (kg P/year)
				Total N		Total P	

Add the total N and total P from breeding and pigs sold together.

(continued)

Notes: ² Average number on the unit at any one time and not the total number entering the herd.

* Select the Nitrogen figure depending on the weaning age and sale weight of pigs on your unit.

	Sale weight	N produced/head (kg N)	P produced /head (kg P)
Weaned at 3- 4 weeks	18kg (7 ¹ / ₂ weeks)	0.26	0.08
	35kg (11 weeks)	0.71	0.23
	105kg (23 weeks)	3.40	1.09
Weaned at 7 weeks	35kg (11 weeks)	0.46	0.15
	105kg (23 weeks)	3.15	1.00

Example:

Select 3.40 (kg N) and 1.09 (kg P) if the weaning age is four weeks and sale weight approximately 105kg.

Growing and finishing farms only – select the weight range for your finishing system

Livestock type	Growing and finishing farms ONLY				
	Planned average per year	N produced/ head/year (kg N)	Total N produced (kg/year)	P produced/ head/year (kg P)	Total P produced (kg/year)
Pigs	A	B	(C) (A)x(B)	(D)	(E) (A)x(D)
18kg-35kg		0.46		0.15	
18kg – 105kg		3.15		1.00	
35kg – 105kg		2.69		0.85	
		Total N from growing and finishing pig farms		Total P from growing and finishing pig farms	

Livestock manure N and P to be produced by poultry per year.

Only complete this table if you keep these livestock.

1. Depending on the poultry type, enter either the number on your farm throughout the calendar year or the capacity of the unit in column A.
2. Multiply the number of birds by the N and P produced per 1000 birds.
3. Total the N produced / year in the appropriate column.
4. Total the P produced / year in the appropriate column.

Livestock type	Planned no. of birds produced per year	N produced/ 1000 birds (kg N)	Total N produced (kg/year)	P produced/ 1000 birds (kg P)	Total P produced (kg/year)
Poultry	(A)	(B)	(C) (A)x(B)	(D)	(E) (A)x(D)
Broilers (1000s) ³	132	38.6	5095.2	28.7	3788.4
Male turkeys (1000s) ⁴		611		254	
Female turkeys (1000s) ⁵		363		104	
Fattening ducks (1000s) ⁶		139		65	
		Total N kg from poultry	= 5095.2	Total P kg from poultry	= 3788.4

(continued)

Notes

³ Broilers (1000), data based on 255kg N/year, output per 6.6 crops /year, 40 day cycle (73% occupancy).

⁴ Male turkeys (1000), data based on 1284kg N/year, output per 2.1 crops/year, 140 day cycle (80% occupancy).

⁵ Female turkeys (1000), data based on 871kg N/year, output per 2.4 crops/year, 120 day cycle (80% occupancy).

⁶ Fattening ducks (1000), data based on 834kg N/year, output per 6 crops, 50 day cycle (85% occupancy).

Livestock type	Unit capacity (no. of birds)	Planned no. weeks occupancy per year	N produced/ 1000 birds per week (kg N)	Total N produced (kg/year)	P produced 1000 birds per week (kg P)	Total P produced (kg/year)
Poultry	(A)	(B)	(C)	(D) (A)x(B)x(C)	(E)	(F) (A)x(B)x(E)
Broiler breeders ⁷ (1000s) 0-18 wks			5.9		2.1	
Broiler breeders ⁸ (1000s) 18-60 wks			20.8		7.6	
Broiler breeders ⁹ (1000s) 0-60 wks			18.6		6.8	
Pullets (1000s) ¹⁰			5.7		2.1	
Layers (1000s) ¹¹			11.7		4.6	
			Total N from poultry		Total P from poultry	

Notes

⁷ Broiler breeders (1000), 0 – 18 weeks data based on 142kg N/year, output per 18 week cycle (46% occupancy).

⁸ Broiler breeders (1000), 18 – 60 weeks data based on 945 N/year, output per 42 week cycle (87.5% occupancy).

⁹ Broiler breeders (1000), 0 – 60 weeks data based on 878kg N/year, output per 60 week cycle (91% occupancy).

¹⁰ Pullets (1000), data based on 113kg N/year, output per 17 week cycle (38% occupancy).

¹¹ Layers (1000), data based on 607kg N/year, 98% occupancy.

N and P produced from livestock manure.

Transferring the answers from the relevant pages enter the amount of livestock manure N and P from each of the enterprises on your farm.

	N produced (kg/year)	P produced (kg/year)
Dairy cattle livestock manure (total from page 26)	11,350	2,088.5
Beef cattle livestock manure (total from page 27)	+	+
Sheep livestock manure (total from page 28)	+	+
Deer and goat livestock manure (total from page 29)	+	+
Horse livestock manure (total from page 30)	+	+
Pig livestock manure (total from page 31 and 32)	+	+
Poultry livestock manure (total from page 33 and 34)	+ 5,095.2	+ 3,788.4
	= 16,445.2	= 5,876.9
Total for all enterprises	(Total N produced kg/year)	(Total P produced kg/year)

2 Organic manure planned to be imported and exported

1. Only complete this part if manure is to be imported/exported to or from your farm.
2. Select the type of slurry/manure and dry matter (DM) and insert the volume. Typical DM is 6% for cattle slurry and 4% for pig slurry.

Slurry type	Imported volume (m ³)	Exported volume (m ³)
Beef cattle slurry – 2%DM		
Beef cattle slurry – 6%DM		
Beef cattle slurry – 10%DM		
Dairy cattle slurry – 2%DM		
Dairy cattle slurry – 6%DM		
Dairy cattle slurry – 10%DM		
Pig slurry – 2%DM		
Pig slurry – 4%DM		
Pig slurry – 6%DM		
Separated slurry		
Other		

Manure type	Imported quantity (tonnes)	Exported quantity (tonnes)
Broiler/turkey manure – 60%DM		100
Cattle FYM – 25% DM		
Duck manure – 25% DM		
Layer manure – 30% DM		
Pig FYM – 25% DM		
Other		

1m³= 220 gallons

3 Map of farm

Provide a farm map which shows the following:

- the field areas;
- crops grown in each field;
- Previous crop grown for crops other than grass;
- SNS level for crops other than grass (Refer to the Nitrates Action Programme Guidance Booklet page 65-66).

or alternatively a table as below could be completed along with the farm map.

Farm Survey Number	Field Number	Field Area (ha)	Previous crop	Soil Nitrogen Status (arable fields only)	Crop grown
7/1/526	1	3.06	Grass	-	Grass
7/1/526	2	4.00	Grass	-	Grass
7/1/526	3	2.89	Grass	-	Grass
7/1/526	4	2.68	Grass	-	Grass
7/1/526	5	3.80	Grass	-	Grass
7/1/526	6	2.61	Grass	-	Grass
7/1/526	7	2.50	Grass	-	Grass
7/1/526	8	2.90	Grass	-	Grass
7/1/526	9	2.96	Maize	-	Grass
7/1/526	10	3.82	Barley	-	Grass

(continued)

Annex A

Map of farm (continued)

Farm Survey Number	Field Number	Field Area (ha)	Previous crop (arable fields only)	Soil Nitrogen Status	Crop grown
7/1/526	11	4.10	Grass	-	Grass
7/1/526	13	3.22	Winter Wheat	-	Grass
7/1/526	14	6.53	Grass	-	Grass
7/1/526	15	3.56	Grass	-	Grass
7/1/526	16	3.15	Grass	-	Grass
7/1/526	17	4.22	Grass	3	Winter Wheat
7/1/526	18	2.3	Grass	-	Grass
7/1/526	19	2.7	Grass	-	Grass

4 Planning the amount of nitrogen to be applied to grassland

This will estimate the amount of N you are likely to apply to the grassland area over the year.
If in practice this changes plans should be amended within seven days.

Planning the Nitrogen Application for the Grassland Area

Column (A)	Enter the total area of grassland.
Column (B)	Enter the maximum nitrogen (N) requirement for your grassland area.
Column (C)	Enter the type(s) of organic manure to be applied, do not include livestock manure .
Column (D)	Enter in the amount of this organic manure to be applied to the grassland area.
Column (E)	Enter the available nitrogen content of these organic manures (the total N content can be derived from the import licence) by calculating the % availability that is 30%, 35%, 40% according to the year applied. (Nitrates Action Programme Guidance Booklet Page 61). For example, sewage sludge with a total nitrogen of 3kg of N per m ³ has 0.9kg N available nitrogen per m ³ .
Column (F)	Multiply columns D and E to give total available nitrogen to be applied in organic manures.
Column (G)	Enter the type(s) of fertiliser to be sown on grassland during the year.
Column (H)	Enter the total amount of fertiliser product to be applied for each fertiliser type(s).
Column (I)	Calculate the amount of N to be applied for all type(s) of fertiliser. For example if 25,000 kgs of 27:0:0 is to be applied, Kg of N to be applied = $27 \times 25,000 \div 100 = 6750$ kg of nitrogen.
Column (J)	Add column (F) and (I) to give total nitrogen to be applied.
Column (K)	Divide total in (J) by whole area of grassland (A). Application to be less than requirement in column (B)

(continued)

4 Planning the amount of nitrogen to be applied to grassland (continued)

Nitrogen planning sheet for grassland										
Crop details		Organic manure excluding livestock manures (for example sewage sludge)				Chemical N fertiliser			Organic and Chemical N fertiliser	Total N to be applied per ha (kg) (J) divided by (A)
Area of grassland on the farm (ha)	N requirement of grassland (kg/ha) (As per page 21)	Type of manure	Total amount of manure to be applied to <u>whole</u> area of grassland (m ³ or t)	Amount of available N per m ³ or t Annex E*	Total amount of N available to <u>whole</u> area of grass (kg) (D) x (E)	Type of N fertiliser to be applied	Total amount of fertiliser product to be applied to <u>whole</u> area (kg)	Total amount of N to be applied to <u>whole</u> area (kg)	Total amount of N to be applied over <u>whole</u> area (kg) (F) + (I)	
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(L)
56.78	272	None	None	None	None	27:0:0	25,000	6,750	6,750	
						27:6:12	1,600	432	432	
						46:0:0	10,000	4,600	4,600	
Total									11,782	208

Annex E* refers to Annex E in the Nitrates Action Programme Guidance Booklet Page 61.

5 Planning the amount of nitrogen to be applied to crops other than grass

In contrast to grassland all organic manures must be taken into consideration including livestock manures.

Column (A)	Enter crop type from Annex I Page 67 of the Nitrates Action Programme Guidance Booklet.
Column (B)	Enter the whole area for this crop on the farm.
Column (C)	Enter the maximum nitrogen requirement for your crop (Annex I, page 67 of the Nitrates Action Programme Guidance Booklet) taking into consideration Soil Nitrogen Supply (Annex H page 65)
Column (D)	Enter the type(s) of organic manure to be applied (including livestock manure).
Column (E)	Enter in the amount of manure to be applied to the whole area of crop.
Column (F)	Enter the amount of nitrogen available in m ³ or tonnes of the manure to be applied (Annex E Page 61 of the Nitrates Action Programme Guidance Booklet).
Column (G)	Multiply columns E and F to give total available nitrogen to be applied in organic manures.
Column (H)	Enter the type(s) of fertiliser to be sown.
Column (I)	Enter the total amount of fertiliser product to be applied for each fertiliser type(s)
Column (J)	Total up the amount of nitrogen to be applied for all type(s) of fertiliser applied. For example if 1600kg of 27:0:0 is to be applied, Kg of N to be applied = $27 \times 1600 \div 100 = 432$ kg of nitrogen.
Column (K)	Add column (G) and (J) to give total nitrogen to be applied to the whole crop area.
Column (L)	Divide total in (K) by whole area of crop (B). Application to be less than requirement in column (C).

(continued)

5 Planning the amount of Nitrogen to be applied on crops other than grass (continued)

Nitrogen planning sheet for crops											
Crop details			Organic manure Including livestock manure				Chemical N fertiliser			Organic and Chemical N fertiliser	Total N to be applied per ha (kg)
Crop	Total Area of crop (ha)	Crop N requirement (kg/ha) Annex I*	Type	Total amount of manure to be applied to <u>whole</u> area of crop (m ³ or t)	Amount of N available in m ³ or t Annex E*	Total amount of N available to <u>whole</u> area of crop (kg) (E) x (F)	Type of N fertiliser to be applied	Total amount of fertiliser product to be applied to <u>whole</u> area (kg)	Total amount of fertiliser N to be applied to <u>whole</u> area (kg)	Total amount of N to be applied over <u>whole</u> area (kg) (G) + (J)	Total (K) divided by (B)
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
Winter Wheat	4.22	150	Cattle FYM	75t	1.2	90	46:0:0	400	184	274	65
							27:6:12	300	81	81	19
									Total	355	84

* refers to Annexes I and E in the Nitrates Action Programme Guidance Booklet

6 Planning the amount of phosphorus to be applied

In contrast to grassland all organic manures must be taken into consideration including livestock manures.

Column (A)	Identify the crop to be grown. A list of the main crops and their requirements are listed in Annex K page 73 of the Nitrates Action Programme Guidance.
Column (B)	Enter area of field.
Column (C)	Enter Soil P index from soil analysis if available. (If not available then assume an index of 4).
Column (D)	According to the soil index found on soil analysis results enter the phosphorus requirement in kg/ha from Annex K, Pages 73 of the Nitrates Action Programme Guidance Booklet.
Column (E)	Enter the type(s) of livestock manure to be applied to these areas as per Annex E Page 61 of the Nitrates Action Programme Guidance Booklet.
Column (F)	Enter in the amount of manure to be applied after soil sample taken in m ³ or tonnes.
Column (G)	Enter the P (P ₂ O ₅) content of the manure to be applied from Annex E Page 61 of the Nitrates Action Programme Guidance Booklet.
Column (H)	Multiply columns (F) and (G) to give total P (P ₂ O ₅) to be applied in organic manures.
Column (I)	Enter the type of fertiliser to be applied.
Column (J)	Enter the amount of fertiliser to be applied per ha.
Column (K)	Enter the amount of chemical phosphorus to be applied. For example type of fertiliser to be applied was 27:6:12, this contains 6% P (P ₂ O ₅). If 300kg is to applied per ha then the amount of P (P ₂ O ₅) would be $6 \times 300 \div 100 = 18\text{kg}$ per ha.
Column (L)	Add column (H) and (K) to give total phosphorus to be applied per ha and divide by the area of the field (B) to calculate the application rate per ha.

(continued)

6 Planning the amount of phosphorus to be applied (continued)

Planning phosphorus sheet												
Grass / Crop details				Organic manure (includes livestock manures)					Chemical P fertiliser			Total P (P ₂ O ₅) to be applied per ha ((H)+(K)) divided by (B)
Field No.	Crop	Area of crop (ha)	Soil index (from analysis)	P (P ₂ O ₅) requirement by crop kg/ha according to soil index Annex K*	Type of organic manure to be applied after soil sample taken Annex E*	Total amount of organic manure to be applied (m ³ or t)	P (P ₂ O ₅) content of organic manure to be applied (kg/m ³ or kg/t) Annex E*	Total amount of P (P ₂ O ₅) supplied to crop in organic manure (F) x (G)	Type of fertiliser product to be applied	Total amount of fertiliser product to be applied (kg)	Total amount of P (P ₂ O ₅) to be applied (I) x (J)	
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
1,3,4,5,6,7,9	Grazing	20.5	Soil analysis not available	No requirement	None	None	None	None	None	None	None	-
2	Grazing	4	1	40	Cow slurry	35m ³	1.2	42	None	None	None	11
8,10,11,13,14,15,16	1st Cut silage	27.28	Soil analysis not available	No requirement	Broiler	80 t	25	2000	None	None	None	73

(continued)

Planning the amount of Phosphorus to be applied (continued)

Planning phosphorus sheet												
Grass / Crop details				Organic manure (includes livestock manures)					Chemical P fertiliser			Total P (P ₂ O ₅) to be applied per ha ((H)+(K)) divided by (B)
Field No.	Crop	Area of crop (ha)	Soil index (from analysis)	P (P ₂ O ₅) requirement by crop kg/ha according to soil index Annex K*	Type of organic manure to be applied after soil sample taken Annex E*	Total amount of organic manure to be applied (m ³ or t)	P (P ₂ O ₅) content of organic manure to be applied (kg/m ³ or kg/t) Annex E*	Total amount of P (P ₂ O ₅) supplied to crop in organic manure (F) x (G)	Type of fertiliser product to be applied	Total amount of fertiliser product to be applied (kg)	Total amount of P (P ₂ O ₅) to be applied (I) x (J)	
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)
8,10, 11,13, 14,15 16	2nd Cut silage	27.28	Soil analysis not available	No requirement	Cow Slurry	800m ³	1.2	960	None	None	None	35
17	Winter Wheat	4.22	2	70	Cattle slurry	150m ³	1.2	180	27:6:12	300	18	47

m³ = 220 gallons

1 hectare=2.47 acres

* refers to Annexes K and E in the Nitrates Action Programme Guidance Booklet

NOTE: Where no chemical P fertiliser has been applied, there is no legal requirement to demonstrate a crop requirement for phosphorus from livestock manures.

When applying nutrients to grass or crops remember to consider all nutrients such as potash and sulphur.

7 Description of animal housing

What type of animal housing is on your farm?

Slurry based

Straw bedded

If other please specify

8 Description and volume of manure storage

Storage capacity of rectangular tanks/lagoons/middens

Tank	Description	Length l (m)	Breadth b (m)	Adjusted Depth d (m) (Depth – freeboard) ⁽ⁱ⁾	Volume of facilities (l x b x d) (m ³)
1	Main Cow house	25	4	1.8	180
2	Feeding area	25	8	1.8	360
3	Heifer house	15	4	1.8	108
4	Silo tank	8	3	1.5	36
5	Far yard	30	4	2.1	252
6	Midden	15	8	1.8	216
Total capacity of rectangular tanks and lagoons/ middens					1152m ³

Storage capacity of above ground stores

Tank	Description	Radius rad (m)	Adjusted height h (m) (Height – freeboard) ⁽ⁱ⁾	Volume of facilities for slurry $= 3.14 \times \text{rad} \times \text{rad} \times h$ (m ³)
1	Yard	7	3	462m ³
2				
Total capacity of above ground circular stores				462m ³

⁽ⁱ⁾ Freeboard is the term given to the unfilled depth (safety margin) at the top of a slurry or effluent tank or compound. Freeboard allowances are 750mm for earth bank lagoons and 300mm for all other structures. Freeboard is not a legal requirement for structures which are exempt under the SSAFO Regulations (structures completed before 1 December 2003, unless substantially reconstructed). It is, however, considered best management practice to adhere to freeboard requirements in all structures.

Annex B

The following pages are an example format of a **fertilisation account**.

The information can be presented in other formats if preferred.

1 Area of crops

Please refer to farm map from previous year's fertilisation plan noting crop areas.

Crop Grown	Area Grown (ha)	N Requirement (Kg/ha)
Grassland	56.78	272
Winter wheat	4.22	150

2 Livestock numbers

Please refer to livestock numbers from previous year's fertilisation plan.

Stock type as per fertilisation plan	Average number for previous year
Dairy cows	100
0-1 cattle	30
1-2 cattle	30
Cattle over 2 years	5
Broilers	132,000 sold per year

* if keeping calves/lambs for part year use either 0-6 or 6-12 month categories.

3 Imported and exported organic manures (from previous year's fertilisation plan)

Please refer to previous year's fertilisation plan.

Slurry type/ Solid manure	Imported volume or quantity (m ³ or t)	Exported volume or quantity (m ³ or t)
Broiler litter		100t

4 Chemical fertiliser details

The tonnage and N and P content of all chemical fertiliser stocks on 1 January and 31 December. The tonnage and N and P content of chemical fertiliser imported in and exported off the farm during the calendar year.

Chemical fertilisers 1 January 2008

Fertiliser type for example 25:5:5	Quantity (tonnes)
46:0:0	1.0

Chemical fertilisers (purchased/imported and sold/exported)

Date	NPK Content	Amount purchased or imported on to farm (tonnes)	Amount sold or exported off farm (tonnes)
9/2/2008	27:0:0	25.0	
11/3/2008	46:0:0	10.4	
12/3/2008	27:6:12	1.9	

Chemical fertilisers 31 December 2008

Fertiliser type for example 25:5:5	Quantity (tonnes)
46:0:0	1.0

5 Dirty water management

How is your dirty water managed?

Stored with slurry

Stored separately

If other please specify _____

6 Agricultural products that contain P imported on and exported off the farm

List any agricultural products containing P that are imported on to and/or exported off the farm.

Agricultural products containing P	Amount imported on to farm (please state units kg, t or l)	Amount exported off farm (please state units kg, t or l)
Milk		600,000
Dropped calves		50
Cattle 500 kg		30
Cattle 600kg	5	
27:6:12 fertiliser	1.9t	
Dairy concentrates	185t	
Heifer concentrates	30t	
Poultry concentrates	475t	
Poultry litter		100t

Agricultural product	Recommended record source
Milk	Milk cheque details
Livestock Cattle	Herd record details
Livestock sheep	Flock record details
Livestock Pig	Herd register/management records
Livestock Poultry	Industry flock records
Fertiliser	Fertiliser invoices/fertiliser account
Concentrates	Invoices. (Documentation showing P content if deviating from standard figures)
Imported/ exported manures	Amounts and P content of manures imported and exported
Crop products such as hay, straw, potatoes	Invoices from seller or purchaser

A P balance does not have to be calculated but to ensure compliance it is advisable for farmers to calculate their own position. A list of agricultural products, their P contents and an example of how a P balance is calculated is now outlined.

In addition a Phosphate Balance Calculator is available on the website www.ruralni.gov.uk

1 P Content for some agricultural products

	P content (kg per unit)
1t Concentrates (or use actual declared figures)	5.8
1t Fertiliser	Multiply the %P content by 4.36
1 litre milk	0.001
Dropped calf	0.33
Cattle 100kg	0.66
Cattle 200kg	1.32
Cattle 300kg	1.98
Cattle 400kg	2.64
Cattle 500kg	3.30
Cattle 600kg	3.96
Cattle 700kg	4.62
Cattle 800kg	5.28
Cattle 900kg	5.94
Cattle 1000kg	6.60
Pigs/sows per 100kg	0.5
Lambs/sheep per 100kg	0.54
Wool/tonne	0.4
Eggs from 1000 layers (including eggs)	42.48

(continued)

1 P Content for some agricultural products (continued)

	P content (kg per unit)
*1000 broilers	12.0
*1000 broiler breeders 0-18 weeks	11.4
*1000 broiler breeders 18-60 weeks (eggs included)	33.5
*1000 broiler breeders 0-60 weeks (eggs included)	44.9
*1000 turkeys male	34.6
*1000 turkeys female	31.7
*1000 ducks	11.4
*1000 pullets	7.9
1 tonne of silage	0.6
1 tonne of hay	3.0
1 tonne of straw	1.0
1 tonne of barley	3.4
1 tonne potatoes	4.10
1m ³ Dairy slurry 2% DM	0.26
1m ³ Dairy slurry 6% DM (typical)	0.52
1m ³ Dairy slurry 10% DM	0.87
1m ³ Beef slurry 2% DM	0.26
1m ³ Beef slurry 6% DM (typical)	0.52

(continued)

1 P Content for some agricultural products (continued)

	P content (kg per unit)
1m ³ Beef slurry 10% DM	0.87
1m ³ Pig slurry 2% DM	0.44
1m ³ Pig slurry 4% DM (typical)	0.87
1m ³ Pig slurry 6% DM	1.31
1t Broiler/turkey litter	10.91
1t Layer manure	5.67
1t Cattle FYM	1.53
1t Sheep FYM	0.87
1t Pig FYM	3.05
1t Duck manure	2.40

* Figures take into consideration the P in stock entering and leaving the farm.

1 Example of calculated P balance (For a 60ha, 100 cow dairy farm with 132,000 broilers per year)

	Amount	P content (kg per unit)	Kg P In (P bought or imported)	Kg P Out (P sold or exported)
Fertiliser type				
Fertiliser 27:6*:12	1.9t	26.16 (6 X 4.36)	(1.9 x 26.16) = 50kg	
Concentrates**				
Concentrates dairy cow	220t	5.8	(220 x 5.8) = 1,276kg	
Concentrates heifer	30t	5.8	(30 x 5.8) = 174kg	
Concentrates broilers	460t	5.5	(460 x 5.5) = 2,530kg	
Other products				
Litres of milk sold	660,000l	0.001	-	(660,000 X 0.001) = 660kg
Dropped calves sold	50	0.33	-	(50 x 0.33) = 17kg
Cattle 500 kg sold	30	3.33	-	(30 x 3.33) = 100kg
Dairy cows 600 kg bought	5	3.96	(5 x 3.96) = 20kg	
Broilers (1000)	132	12		(132 X 12)= 1584kg
Exported broiler litter	100t	10.91		(100x 10.91) = 1091kg
		Totals	4,050kg A	3,452kg B
		P balance (A- B)	+598kg (4050kg – 3451kg)	
P Balance per ha (P Balance / controlled agricultural area)			+ 9.8kg (599kg/61ha)	

*(multiply P₂O₅ % level on fertiliser bag by 4.36 to convert to kg P in 1 tonne)

** (every 0.1% P in a ration equates to 1kg P/t)

This is below the P balance limit of +10kg/ha/year therefore compliant with this aspect of the derogation.

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Nitrates Regulations

028 9262 3184

SSAFO Regulations

028 9262 3102

Groundwater Authorisations

028 9262 3279

Sewage Sludge to Land

028 9263 3345

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