MONTGOMERY E.H.S.

PAT KENNY

NUTRIENT MANAGEMENT PLAN

FOR POULTRY WASH WATER

Submitted to Limerick County Council in respect of

Proposed Expansion of Poultry Growing Operation of Pat Kenny,
Coolanoran, Newcastle West, Co. Limerick

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Environment Safety Training Project Management

PAT KENNY

NUTRIENT MANAGEMENT PLAN

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Rev	Description	Origin	Review	Changes/Amendments	MEHS Approval	Date
1	Issue	MM	TM	Issued	Yes	23/03/12

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1.0 Introduction

This document comprises a proposed Nutrient Management Plan for the Lands in County Limerick for Pat Kenny and the following locations for the purposes of recycling of wash water for poultry houses.

The Nutrient Management Plan (NMP) has been prepared in accordance with the requirements of:

- Land spreading of Organic Waste - Guidance on Groundwater Vulnerability Assessment of Land
- The Teagasc 2004 recommendations: Nutrient and Trace Element Advice for Grassland and
- Tillage Crops, Teagasc 2004 or The REPS 3 Recommendations: Dept. of Agriculture Food and Forestry, Rural Environmental Protection Scheme.

1.1 Wash water Characteristics

The wash water all arises from cleanout of the poultry houses after the batch have been caught and transported to the poultry processing facility.

The wash water generated through the washing of the poultry houses has the following characteristics:

BOD	500 – 4000 mg/l
COD	1200 – 6500 mg/l
Suspended Solids	120 2000 mg/l
Phosphate	80 290 mg/l – P
Total nitrogen	200 3500 mg/l – N

1.2 Nutrient Management Plan?

The Nutrient Management Plan (NMP) detailed below sets out the criteria, which are used to regulate and manage the land spreading of wash water arising from the poultry operation in a way which will minimize the potential for environmental impacts.
The NMP facilitates management control over the land spreading activities for the different land banks.

The Nutrient Management Plan records the following information:

1. Area Reference Number

   The unique reference number assigned to each land spread area.

2. Name and Address

   The name and address of the landowner is recorded.

3. Map Reference

   Each land spread area is referenced to a specific map area indicating its location.

4. Soil Sample No.

   Each soil sample is given a unique reference number to enable its location on a map.

5. Area of Soil Sample

   The area in hectares from which each soil sample was collected is recorded.

6. Soil P Level collected.

7. Land Use

   The soil phosphorous level is taken to be representative of the area within which the sample was

   The land use – crop and / or livestock rates – is taken into account.

   The phosphorous requirement is derived on the basis of the soil P level and the current years land use utilising recommended factors as follows:

8. Phosphorous Requirement

   On Farm P Estimate

   An estimate should be made where possible of the quality and sources of on farm available phosphorous through manure, slurry and other external sources.

   Net P Input

On the basis of the overall input requirement and the on farm available phosphorous, the net input requirement is calculated.

9. Compost Application

On the basis of the P concentration of the compost, the total quality of compost required is calculated.

1.3 Responsibility

The Environmental Consultant is responsible for the implementation of the Nutrient Management Plan at the site.

The land spread personnel is responsible for managing the day-to-day land spreading activities, and maintain records of all landowners visited for spreading purposes.

2.0 Management, Transport of Land spreading of Compost

2.1 Traceability of product

Pat Kenny will provide for the traceable documentation, in a cradle to grave approach. Following the clean out of each house the tank will be emptied onto Pat Kenny Lands, who will log all relevant data. Pat Kenny will sign off data sheets to confirm disposal.

2.2 Method of transport, vehicle type

The wash water will be road transported with a leakproof tankers.

2.3 Land spreading & land spreading equipment

The land bank is able to accommodate the wash water. A reserve of 20% will be provided.

All land spreading equipment used will be to the highest standard. All transport container units will be of a high standard, leak-proof, clean and road-worthy.

3.0 Waste Management

The land bank has an available land spreading area of approximately 4.8 hectares spread.

Site maps for the land spread areas are included in Attachment 2.

The site operator will is responsible for the co-ordination and undertaking of the land spreading operation.

The type of farming carried out on the land bank is predominantly grass land in to addition grass coverage for silage is also included.

The wash water is drawn from the wash water tanks and applied to the land spread area.

4.0 Physical Characteristics of Land bank

The land bank comprises an available spread area of approx. 4.8 hectares, inclusive of the 5 proposed spread areas. This figure represents the total area of land, less defined buffer zones and excluded areas, and represents the actual area available for land spreading of compost.

Land Area	Field No.	Address	County	Total Area	Usable Area	Soil Index	Crop
1	1	Coolanoran	Limerick			3	Grass
1	2	Coolanoran	Limerick				Grass
1	3	Coolanoran	Limerick	4.8	4.3		Grass
1	4	Coolanoran	Limerick				Grass
1	5	Coolanoran	Limerick				Grass

5.0 Assessment of Land bank

The source and resource vulnerability assessment of the land areas carried out at Pat Kenny's concludes that "land spreading on the both land banks will not have a significant impact on groundwater, providing that it is carried out in accordance with normal good practices and all spreading takes place outside the buffer zones". The report confirms a minimum thickness of soil of >1m throughout the land bank.

As discussed with Anne Goggin, all the land within the land bank can be classified as Index 3.

The assessment of Land areas, conducted during the formulation of this Nutrient Management Plan concludes that:

- The aquifers underlying the land spread areas are classed as Minor.
- The vulnerability of the groundwater underlying the land spread areas is generally rated as Low or Low-Moderate and not above high.
- There has been no recorded impact on either ground- or surface waters in the locality.
- Taking account of the above, the potential impact on groundwater sources and resources arising from the activity will be limited.

Copies of the Geological Ireland Maps are included in Attachment 2.

6.0 Nutrient Management Plan

This Nutrient Management Plan forms an integral part of the Pat Kenny covering land spreading activities across the land banks.

The plan has as its basis, the beneficial economic effects from increased crop yields available to landowners as a result of the safe application of wash water on agricultural land. The plan is based on the sole application of wash water compost from Industrial and Local Authorities to meet crop phosphorous requirements.

The essential component of the plan is the matching of phosphorous inputs with crop requirements as a means of ensuring sustainable application over time. Spreading will not take place on lands with a soil phosphorous level greater than 10 mg/kg (Index 4 soils).

The Nutrient Management Plan records the following information (numbering corresponds to numbers used on the plan in Attachment 1).

1 Field Ref.

Reference number for each field/plot within each land area. Numbers correspond to map numbering.

2. Soil Sample Ref.

Each soil sample is given a unique reference number to enable its location on a map.

3. *Soil P Level*

The soil phosphorous level (expressed in mg/kg) is taken to be representative of the area within which the sample was collected.

4. *Soil Index*
The soil index (1 to 4) is given for each filed/plot on the basis of measured soil phosphorous levels. No spreading of compost will take place on Index 4 soils.

5. *Crop Type*
The crop type for the 2012 season is given

6. *Phosphorous Requirement*

The phosphorous requirement is derived on the basis of the soil index (4) and the current year's crop type, taking Teagasc recommended input requirements.

7. *Area of Soil Sample*

The area in hectares from which each soil sample was collected is recorded, taking account of buffer zones and other no spread areas.

8. *Net P Import*

The net input requirement is calculated on the basis of the input requirement for each filed/plot by the usable area of each filed/plot in hectares.

9. *Compost Application Quantity*

On the basis of the P concentration of the compost, the total quality of compost required is calculated.

10. *Application Rate*
The application rate is determined as the quantity of compost to be applied per hectare to meet P input requirements for each field/plot.

7.0 Proposed Land spreading Operations

The 2012 land spreading activities will be carried out in accordance with the attached Plan (Attachment 1).

Attachments

Attachment 1	**Nutrient Management Plan 2012**
Attachment 2	**Land area & GSI Maps**

Attachment 1

Nutrient Management Plan 2012

Pat Kenny

Nutrient Management Plan

Plant:	Various	**Revision:**	Mar-12
Date:	23/03/2012	**Approved:**	0
Washwater P (mg/kg):	0.29	(0.03 kg/tonne)	
Washwater N (mg/kg):	3.5	(3.5 kgs/tonne)	

Index Cat.	Soil P kg/kg rang	Cereal P Req (kg/ha)	Beets P Req (kg/ha)
Index 1	0 - 3.0	45	70
Index 2	3.1 - 6.0	35	55
Index 3	6.1 - 10.0	25	40
Index 4	>10	No Spread	No Spread

Nitrogen Application Restrictions	
Vulnerability Rating	**Max. Nitrogen Application**
Low-Moderate	250kg/ha
High	170kg/ha

Land Area	Field No.	Address	County	Total Area	Usable Area	4 Soil Index	5 Crop	6 P Requirement (kg/ha)	7 Area (ha)	8 Net P Import (kg)	9 Washwater Qty (tonnes)	10 Application Rate (tonnes/ha)	11 Total N at 10 (kg/ha)	12 Classification	13 Classification N Loading kg/ha
1	1	Coolanoran	Limerick	4.8	4.3	3	Grass	20	4.30	86	297	69	222	Low	254
	2	Coolanoran	Limerick												
	3	Coolanoran	Limerick												
	4	Coolanoran	Limerick												
	5	Coolanoran	Limerick												
			Sum	**4.8**	**4.3**	**N/A**	**0.0**	**20.0**	**4.3**	**86.0**	**296.6**	**69.0**	**221.9**	**0.0**	**254.0**

Attachment 2

Land area & GSI Maps