MR & MRS E DONALDSON
THREAPTHWAITE FARM
CLEATOR MOOR
CUMBRIA
CA25 5JE

ODOUR MANAGEMENT PLAN

Prepared by:

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Incident Hotline

You should use the incident hotline to report an incident, such as pollution.
Tel: 0800 807060

Introduction

This Plan has been prepared as part of a planning application as there are sensitive receptors (neighbouring dwelling houses) within 160 metres of the proposed installation.

The purpose of this Plan is to:

- Establish the likely sources of odour arising from a typical dairy unit.
- Set out the procedures followed at Threapthwaite Farm in order to prevent or minimise odour levels.
- To formalise the procedures for dealing with any odour complaints.

Background

Threapthwaite Farm has been a dairy farm since the 1940s and was established by Mr Donaldson's parents. Mr and Mrs Donaldson run the farm in conjunction with their daughter and are investing heavily in the property in order to ensure that it is a viable business going forwards and to ensure that the farm has the highest environmental credentials to protect the environment around the property.

The current slurry storage capacity at Threapthwaite Farm is not appropriate for modern requirements and the desire to build new storage is to allow the ability to store slurry in order that it is supplied in a timely fashion to the agricultural land when it will both do its optimal best for the agricultural operations and also ensure the protection of a natural environment.

Present Storage

The present storage facility is a slurry lagoon (shown on the map in yellow) and is currently located approximately 160 metres from the nearest property being Rheda Terrace. The existing facility has been sufficient for the enterprise until recent years when regulations have come in restricting when manure can be spread.

Present Procedure

The present procedure is for the slurry to drain in to the current lagoon and this is then jetted into the slurry tower. This is then circulated at least 1 day prior to the emptying of the storage facility. Due to the small size of the storage facility this has to be emptied between 8 and 10 times per annum. This necessitates the emptying of the facility during the winter months when the slurry does not incorporate into the soil swiftly due to the there being no growing crops on the land when the slurry is spread.

New Storage Facilities

The new storage facility (shown in red) will be a 50m x 50m slurry lagoon of an earth bank construction. This will be sufficient to provide enough storage to ensure that slurry is only spread at the appropriate times of year to maximise effectiveness and ensure no damage is done to the environment.

New Procedure

The slurry will be pumped from the existing buildings and stored in the lagoon to ensure there is enough capacity within the lagoon for all of the winter months without the need to empty the lagoon. The slurry will be pumped into the lagoon by way of a pipe which drops the slurry into the store without breaking the crust which will form on top of the slurry and this will help to eliminate a percentage of the odour emitting from it. Due to the considerably larger storage capacity of the proposed new lagoon, this will eliminate the number of times that slurry needs to be spread and therefore again, minimising the occasions when odours are released. See the following Environment Agency advice:

"*Any form of agitation or turbulence from pumping or stirring will increase the odour from the surface of an open tank. Bottom filling will minimise surface emissions. Formation of a crust may provide a degree of protection against odour emissions but turbulence from stirring can break the crust. It is recognised that slurry mixing may be necessary to produce a suitable material for land application, but generally the preceding measure will reduce emissions of ammonia and odour. The frequency of stirring should be minimised".*

The new facility will have slurry pumped into it directly and this will ensure that the crust on the top of the lagoon will remain intact. The new store will only need to be emptied 3 times per annum, which will be done in March/ April (when ground conditions permit), June and August, and therefore will be spread on the ground at times of year when there are growing crops which will utilise the slurry and break it down far quicker than when it is spread on land at times of year when there are no growing crops.

Contributing Factors

Wind

North-west England is one of the more exposed parts of the UK being relatively close to the Atlantic and containing large upland areas. The strongest winds are associated with the passage of deep areas of low pressure close to or across the UK. The frequency and strength of these depressions is greatest in the Winter half of the year, especially from December to February and this is when wind speeds and gusts are at their strongest.

Another measure of wind exposure if the number of days when gale force is reached. If the wind reaches a mean speed of 34 knots or more over any ten consecutive minutes, then that day is classed as having a gale. Wind speed is sensitive to altitude and local topographic effects. Over the mainland in the north-west, gales occur on 5-10 days along the coast on average in any year.

There have been several noteworthy gales affecting north-west England accompanied by property damage and disruption to travel and power supplies. Examples include 2nd January 1976 when a depression moving eastwards across Scotland to the North Sea brought storm force winds with a gust of 79 knots at Fleetwood in Lancashire. The 'Burns Day storm' of 25th January 1990 when gusts of 60-70 knots were recorded widely and on 8th January 2005 when a deep depression resulted in a gust of 88 knots at St. Bees Head, Cumbria.

The direction of the wind is defined as the direction from which the wind is blowing. As Atlantic depressions pass the UK, the wind typically starts blowing from the south or south-west but later comes from the west or north-west as the depression moves away. The range of directions between south and north-west accounts for the majority of the occasions and the strongest winds nearly always blow from this range of directions. Spring time tends to have a maximum frequency of winds from the north-east due to a build of high pressure over Scandinavia at this time of year. Summer can have a greater incidence of north or west winds associated with the sea breezes.

Location

At the end of this report is a plan showing the location of the present and new storage facilities which lie to the north and north-west of Rheda Terrace residential properties. This location should ensure that due to the average prevailing wind direction, the wind will blow odours away from the residential areas.

Mixing / Stirring / Spreading

Present Method

The present method of spreading slurry involves the manure being jetted in to the slurry tower and then mixed the day before spreading, the slurry is then spread and this happens between 8 and 10 times per annum, meaning that odour is created for a minimum of 2 days per annum, a minimum of 8 times per year.

New Method

The new method of storage will still necessitate the slurry being mixed before spreading but this will only have to happen 3 times per annum which is less than 1/3rd of the occasions that are presently required.

Typical Odour Sources and Action Taken to Minimise Odours

Potential Risks and Problems Actions Taken to Minimise Odour & Odour Risks at Threapthwaite Farm						
What do you do that can harm and what could be harmed?			**Managing the Risk**		**Assessing the Risk**	
Hazard	**Receptor**	**Pathway**	**Risk Management**	**Probability of Exposure**	**Consequence**	**What is the overall Risk?**
Odour from slurry	Neighbouring dwellings	Air	Measures as described in IPPC SRG 6.02	Unlikely	Odour annoyance	Not significant if managed
Flies on slurry store could move off site and affect nearby residents	Neighbouring dwellings	Air	Slurry store is regularly inspected to check for maggots and flies. Treat store with pesticide, if necessary	Unlikely	Flies are a vector of pollution that can harm human health. Concerns about this pollution can cause offence and affect amenity	Not significant if managed
Mixing of slurry in store – releasing odours and sprays	Neighbouring dwellings	Air	Utilise only professional contractors or trained staff and check wind direction during process	Unlikely	Odour and spray annoyance	Not significant if managed
Transportation / spreading of slurry – release of odours or pathway contaminations	Neighbouring dwellings	Air	Utilise only professional contractors or trained staff transport in sealed tankers or via umbilical	Unlikely	Odour and spray annoyance	Not significant if managed

Odour Complaint Procedures

Any odour complaint received will be dealt with by the operator Messrs Donaldson of the farm.

- If a complaint is made, the Odour Complaint Form will be completed and this will be available for inspection by the Environment Agency.
- Information will normally be collected by visiting the complainant, although in some cases, contact may be made by telephone.
- After details of the complaint have been compiled, the cause(s) will be investigated, with reference to:
  - The activities taking place on the farm at the time.
  - The timing of the complaint and whether weekday, weekend etc.
  - The weather conditions at the time.
  - The likely reasons for the complaint will be added to the form and the complainant will be contacted as appropriate.
  - The feasibility of making changes to the activities responsible for the complaint will be considered. If changes are made, the Odour Management Plan will be amended accordingly.

Odour Monitoring Form (sniff testing)

The use of this form is not mandatory. The information may be recorded in any form.

You may need to carry out an assessment either to work out whether you are complying with your OMP, or as a part of an investigation into a complaint.

You can use routine assessments to build up a picture of the impact the odour has on the surrounding environment over time. You can develop 'worst case' scenarios by doing assessments during adverse weather conditions or during particularly odorous cycles of an operation. Ideally, you should use the same methodology to follow up complaints.

Please note:

- Staff normally exposed to the odours may not be able to detect or reasonably judge the intensity of odours off-site. You might be better off using office staff or people who have not recently been working on the site to do this.

- Anyone who has a cold, sinusitis or a sore throat, is likely to underestimate the odours.

- To improve (or to check) data quality, you can get two people to do the test independently at the same time.

• Those doing the assessment should avoid strong food or drinks, including coffee, for at least half an hour beforehand. They should also avoid strongly scented toiletries and deodorisers in the vehicle used during the assessment.

Where you test will depend on:
• whether you are responding to a complaint;
• whether you are checking your state of compliance at sensitive receptors;
• whether you are trying to establish the source of an odour;
• wind direction.

The assessment may involve someone walking along a route that you have selected either because of these factors, or in response to the conditions they found when they got there. Another option is to choose fixed points so that you can evaluate the changing situation over several weeks or months. Or the test points may vary from test to test according to local conditions, which would help you identify worst case conditions.

You should also keep a note of any external activities (such as agricultural practices) that could be either be the source of the odour, contribute to the odour, or be a confounding factor. Remember that an odour will become diluted and may change character as this happens.

Odour Complaint Report Form

Odour Complaint Report Form	
Time and date of complaint	Name and address of complainant
Telephone number of complainant	
Date of odour	
Time of odour	
Location of odour	
Weather conditions (i.e. dry, rain, snow etc)	
Temperature (very warm, warm, mild or degrees if known)	
Wind strength (none, light, steady, strong, gusting)	
Wind direction (e.g. from NE)	
Complainant's description of odour	
What does it smell like	
Intensity	

Duration				
Constant or intermittent during this period				
Any other comments from complainant				
Any other relevant information				
Do you accept that the odour s likely to be from your activities				
What was happening on site at the time the odour occurred				
Operating conditions at the time the odour occurred (e.g., flow rates, mixing etc)				
Actions taken				
Form completed by		Date		Signed

Intensity

0- No odour
1- Very faint odour
2- Faint odour
3 - Distinct odour
4 - Strong odour
5 - Very strong odour
6 - Extremely strong odour

Odour Monitoring Report

Odour Monitoring Form				
Location				
Date of odour				
Time of odour				
Weather conditions (i.e. dry, rain, snow etc)				
Temperature (very warm, warm, mild or degrees if known)				
Wind strength (none, light, steady, strong, gusting)				
Wind direction (e.g. from NE)				
What does it smell like? Do you consider it offensive?				
Intensity (see 1 to 5 below)				
Duration				
Constant or intermittent during this period				
What do you believe the source to be				

Actions taken / comments				
Form completed by				
Date				
Signed				

Intensity

0- No odour
1- Very faint odour
3 - Distinct odour
4 - Strong odour
6 - Extremely strong odour

Plan of Farm Steading and location of Slurry Storage Facilities

Threapthwaite Farm, Cleator Moor