

**THE CONTROL OF POLLUTION**  
**(SILAGE, SLURRY AND**  
**AGRICULTURAL FUEL OIL)**  
**REGULATIONS 1991 AND AS**  
**AMENDED 1997**

**GUIDANCE NOTES FOR FARMERS**

Department of the Environment

Welsh Office

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# THE CONTROL OF POLLUTION

## (SILAGE, SLURRY AND AGRICULTURAL FUEL OIL)

### REGULATIONS 1991 AND AS AMENDED 1997

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# GENERAL INTRODUCTION

1. These Guidance Notes provide background information and guidance on the interpretation of the Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations 1991 and as amended in 1997. These Regulations were made under Section 92 of the Water Resources Act 1991. The Regulations set standards from 1<sup>st</sup> March 1991 and came fully into force on 1<sup>st</sup> September 1991. The amending Regulations came into force on 1<sup>st</sup> April 1997. The Environment Agency (the Agency) are responsible for enforcing these Regulations.
2. The Guidance Notes are divided into 4 parts:
  - Introduction
  - General Requirements
  - Specific Requirements covering:
    - Silage Making and Storage
    - Slurry Stores
    - Agricultural Fuel Oil Stores
  - Appendix: Revised version of the regulations
3. The Notes aim to explain in simple terms some of the main points in the Regulations. They should not be regarded as a substitute for the Statutory Instrument, and are not intended to have legal force. The appendix to these notes sets out a revised version of the regulations reflecting the changes made by the amending regulations. This is purely illustrative and no reliance should be placed upon it for the purposes of legal interpretation.
4. The Regulations set minimum legal standards; they do not change other legislation under which it is an offence to cause water pollution. There is a duty both to avoid causing pollution and to comply with the Regulations. Variations in local conditions may mean that on some farms more stringent standards are needed to prevent pollution. You must make sure that your installations do not cause pollution.
5. The Agency is ready and willing to offer help and guidance on complying with the Regulations, or otherwise preventing pollution. The Agency has produced national guidelines to ensure that the Regulations are implemented consistently and fairly across the country. Technical advice on constructing installations, including advice on appropriate materials, is also available from the suppliers and other agricultural consultants. The Agency has also produced a series of forms, available from local offices, that you can use to help you provide the required information to the Agency in order to comply with the Regulations. The Agency considers these Regulations are important in tackling the problem of agricultural pollution and that success will require the co-operation and commitment of all concerned.

6. If a pollution incident does occur, it is in everyone's interest that the Agency should be contacted immediately: the Agency's **Emergency Hotline** telephone number is **0800 807060** or their local emergency number can be found in the telephone book. Quick notification helps reduce the impact of the pollution, and the cost of cleaning it up.

## **THE REGULATIONS**

7. The Regulations apply to:
- **silage making and storage**, including baled silage (bagged and wrapped) and field silage (field heaps and non-baled, bagged silage);
  - **slurry storage systems**, including stores for dilute effluent such as dirty yard water, run-off from solid manure stores in yards, washings from buildings or yards used by livestock, reception pits and associated pipes and channels.
  - **agricultural fuel oil stores.**
8. The Regulations do not apply to:
- residues from fish farms;
  - solid manure stores that are away from the farm yard;
  - tower silos which comply with BS 5061; and
  - underground, or mobile, or domestic fuel stores.
9. The Regulations as amended in 1997 allows farmers to make and store silage in a field without a constructed base and effluent containment system provided they have a suitable site. However, to comply with the Regulations, you must tell the Agency at least fourteen days beforehand of the exact site that you propose to use to make field silage (field heaps and non-baled, bagged silage) or to store silage made elsewhere (See Specific Requirements in paragraphs 32, 40, 41, 42, 43, 44).

## **THE APPROACH ADOPTED IN THE REGULATIONS**

10. The objective of these Regulations is to set out what is required from those who are in control of silage, slurry and agricultural fuel oil to minimise the risk of water pollution from these substances. They do not, in general, specify the means to be adopted to meet these requirements. Provided that minimum standards are met, you can exercise discretion in constructing installations. Installations which comply with the current British Standards will generally meet the requirements, but it is wise in all cases to check with the requirements set out in the Regulations.

# **GENERAL REQUIREMENTS**

## **DURABILITY LIFE**

11. The Regulations require all new installations to be constructed with a durability life of 20 years. This means that the installation is expected to last – with proper maintenance – for 20 years without causing, or being at risk of causing, pollution.

## **MAINTENANCE**

12. When in use, installations must at all times meet the performance standards laid down: for example, a requirement for impermeable bases must be met whenever an installation subject to the Regulations is used. Frequently inspecting your installations will ensure that potential defects are found and corrected before causing problems. Regular inspection and proper maintenance are key to ensuring that installations do not cause pollution.

## **SAFETY ZONE**

13. Installations should not be constructed, and field silage must not be made or stored, within 10 metres of any controlled waters which any silage effluent, slurry or agricultural fuel oil could enter. This includes rivers, lakes, reservoirs and smaller watercourses such as streams and ditches as well as perforated drainage pipes. The full definition is given in Section 104 of the Water Resources Act 1991.
14. Additionally field silage (field heaps and non-baled, bagged silage) must not be made or stored within 50 metres of a protected water supply source. Such sources are where water is abstracted for human consumption or for use in farm dairies or the preparation of human food. This applies both to abstractions licensed under Part II of the Water Resources Act 1991 and to those unlicensed sources which are known to the silage maker before silage making or storage began (see also paragraphs 32, 40, 41, 42, 43, 44). In cases where, once silage making has begun, a further relevant abstraction point is identified, there is no need to stop or alter silage making on that site for that season. However, for the next season the siting of any field silage should take into account the newly identified abstraction point.
15. There is no prohibition on impermeable drains and sealed pipes (including sealed pipes transporting slurry) within 10 metres of an installation, or inland or coastal waters. The use of perforated drainage pipes within 10 metres of any slurry store or reception pit to move groundwater away may be allowed, subject to approval on a case by case basis by the Agency (see paragraph 55).

## **RESPONSIBILITY FOR COMPLYING WITH THE REGULATIONS**

16. The Regulations require the person with custody or control of an installation to take action. It is this person that the Agency would serve with a notice. Disputes about who has custody or control would need to be resolved ultimately by the courts. But the Government consider that the term would normally be understood as the person who has the *right* to control the installation.

## **EXEMPT STRUCTURES (REGULATION 6)**

17. The Regulations apply to all installations constructed, substantially reconstructed, or substantially enlarged after September 1991. Installations that were in use or built before March 1991 or where a contract for construction was entered into before March and completed before September 1991 can normally be used without alteration, and are referred to as "exempt structures". However, under certain circumstances, the Agency may require exempt structures to be improved to bring them up to an acceptable standard (see paragraphs 19, 20).

## **LOSS OF EXEMPTION (REGULATION 8)**

18. When a structure has been substantially enlarged or substantially reconstructed the Regulations apply to the **whole** structure and not just the newly extended or reconstructed part. However this would not necessarily mean that, for example, changes to a reception pit or channels would cause a slurry storage tank to lose its exemption. "Substantially reconstructed" or "substantially enlarged" will often mean requiring significant structural alterations. You would be well advised to tell the Agency of your plans before starting work.

## **NOTICE REQUIRING WORKS (REGULATION 9)**

19. The Regulations give powers to the Agency enabling them to serve notice requiring action to improve existing installations (including field silage sites) where they consider that there is a significant polluting risk to controlled waters, in order to reduce such risk to a minimum. These powers can be used to serve notices requiring action to improve any facilities installed which are used for the custody or control of a substance to which the regulations apply.
20. The minimum period of compliance following such notice is 28 days following the date of the service of the notice. The Agency may extend this minimum period to take into account, for example, the time needed to obtain planning permission, or to arrange for contractors to do the work, or prevailing weather or site conditions. In issuing a notice the Agency will specify the improvements required to bring an installation up to an acceptable standard. For previously exempt structures the notice will require work to be undertaken so that an installation meets all or some of the standards applying to new installations.

## **APPEALS (REGULATION 10)**

21. The Regulations include a provision which allows a farmer to appeal to the Secretary of State against a notice served by the Agency.
22. If a farmer wishes to appeal against a notice served on her/him by the Agency it must be done in writing within 28 days from the date on which the notice was served. Appeals in England should be addressed to the Secretary of State for the Environment and Rural Affairs, The Planning Inspectorate, Room 4/19, Eagle Wing, Temple Quay House, 2 The Square, Temple Quay, Bristol BS1 6PN. Appeals in Wales should be addressed to the Secretary of State for Wales, Room 2/012, Welsh Office, Cathays Park, Cardiff CF91 3NQ.
23. The appeal must contain a full statement of the grounds of appeal and it should also include the following documents:
  - (a) a copy of the notice served on the farmer;
  - (b) any relevant correspondence;
  - (c) a plan of the farm, showing the installation in question and its relation to watercourses and drains, and;
  - (d) a statement that the appellant is the farmer on whom the notice was served, or a statement from the farmer authorising someone to act on his/her behalf.

## **NOTICE OF CONSTRUCTION (REGULATION 11)**

24. You must notify your local Agency area office in writing about a new, or substantially enlarged, or substantially reconstructed, installation at least 14 days before it is used. This includes substantial enlargements and substantial reconstructions to exempt installations. You must set out in this letter:
  - the type of structure, and;
  - where it is situated.

The Agency can provide a form to help you to do this.

## **OFFENCES AND PENALTIES (REGULATION 12)**

25. Anyone breaching the Regulations will be guilty of a criminal offence. This includes failure to inform the Agency at the proper time. The maximum penalty for failing to notify the Agency of new, substantially enlarged or substantially reconstructed installations is currently £500. On conviction in a Magistrates' Court a person breaching other parts of the Regulations would be liable to a fine of up to £5,000. If the case is heard in the Crown Court the penalty could be an unlimited fine.

# **SPECIFIC REQUIREMENTS**

## **SILAGE PRODUCTION & STORAGE: REGULATION 3 AND SCHEDULE 1**

### *Silage making and storage of silage affected by the Regulations: Regulation 3*

26. The Regulations cover installations used to make and store silage in bulk. Tower silos which meet the design and construction standards of the current British Standard (BS 5061: 1974) are outside the scope of the Regulations. All other silage installations which are newly constructed, substantially enlarge or substantially reconstructed after September 1991 must be built in accordance with the construction standards set out in Schedule 1 (this includes silos in hillsides). The table (p11) lists the different methods of silage making and whether the Regulations apply.
27. The standards set out in the Regulations also cover the storage of silage made elsewhere. Made silage that is removed from where it was ensiled may be stored as follows:
  - (a) in a structure which meets the requirements of Schedule 1;
  - (b) in an “exempt” structure (see paragraph 17);
  - (c) in a field heap and therefore subject to the minimum 14 days notification (see paragraphs 32, 40, 41, 42, 43, 44);
28. Where silage is not in a field or in a silo complying with the full requirements of Schedule 1, you must have the approval of the Agency before using such facilities. The regulations allow for cases where the full silo requirements would be more than is required to minimise the polluting risk effectively and a more simple structure would be adequate. In these cases, the Environment Agency – having weighed up the costs and benefits of different options in the light of the requirements set out in Schedule 1 and the pollution risk posed – may relax the Schedule 1 requirements for that particular silo. Where the Agency is satisfied that a structure, which does not fulfil the standards set out in the Regulations, is sufficient to store silage that has been made elsewhere, they can relax the requirements of the Regulations by written notification before the structure is used. This notice may specify which aspects of Schedule 1 are relaxed and may also specify certain conditions that must be met before the structure is used.
29. The Regulations do not apply to silage whilst it is being transported. Silage which has been removed from a silo in small amounts for regular feeding of animals is not subject to the storage requirements and may in any case be kept on open land in unbaled form provided that the minimum requirements of the regulations covering the storage of silage on open land are observed.

30. Existing silos, constructed before March (or, in some cases) September 1991, may still be used without alteration as long as they qualify as an “exempt structure” (see paragraphs 19, 20 and Regulation 6), unless the Agency specify further works to be undertaken.
31. You do not need to store baled silage (wrapped or bagged) on a specially constructed base, but you must ensure that if it is stored directly on the ground it does not leak effluent. Bales must not be stored or opened within 10 metres of any inland or coastal waters. Care must be taken to collect and dispose of any silage effluent without causing pollution.
32. Silage making in field heaps or non-baled bags is allowed, without the need for an impermeable base, provided the site is suitable and subject to notifying the Agency at least 14 days before first using the site.

<b>Method of Making Silage</b>	<b>Facilities in Use Before 1<sup>st</sup> September 1991</b>	<b>New Facilities After 1<sup>st</sup> September 1991</b>
Tower Silo <sup>a</sup>	not covered by Regulations	not covered by Regulations
Clamp/bunker/silo	exempt <sup>b</sup>	Must meet standards in Schedule 1
Hillside clamp/bunker/silo	exempt <sup>c</sup>	Must meet standards in Schedule 1
Field Heaps	allowed if registered	Allowed, subject to notification <sup>d</sup>
Baled & wrapped/bagged	allowed <sup>e</sup>	allowed <sup>f</sup>
Non-baled bagged	allowed if registered	allowed, subject to notification <sup>g</sup>

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<sup>a</sup> Must comply with BS 5061 to be outside scope of Regulations

<sup>b</sup> See paragraphs 19, 20 on exempt structures

<sup>c</sup> See paragraph 19, 20 on exempt structures

<sup>d</sup> See paragraph 43 for conditions on field silage field heaps and non-baled, bagged silage)

<sup>e</sup> See paragraphs 6, 10 on 10m safety zone

<sup>f</sup> See paragraphs 6, 10 on 10m safety zone

<sup>g</sup> See paragraph 43 for conditions on field silage (field heaps and non –baled, bagged silage)

*Construction standards for silage stores: Schedule 1*

33. Apart from field silage, silage must be made on an impermeable base which includes perimeter drains flowing into an effluent tank. The drain and base must be resistant to corrosion by silage and silage effluent. Walls are optional. Where there are walls, however, they must be resistant to corrosion by silage and silage effluent and there must be drains outside the walls.
34. The Code of Good Agricultural Practice (COGAP) for the Protection of Water, issued by MAFF and Welsh Office Agriculture Department, gives guidance on how these systems may be operated. The Construction Industry Research and Information Association (CIRIA) Report 126 “Farm Waste Storage: Guidelines for Construction”<sup>h</sup> gives technical guidance on how these requirements may be met. Any walls must be capable of withstanding the loading specified in the current British Standard (BS 5502: part 22 1987). It is likely that farmers will need to seek professional advice in order to ensure that the required standards are met. Installations will need to meet the durability life requirement of 20 years.
35. Effluent collection systems to catch any liquor produced are returned. The minimum capacity of such systems must correspond to the silo capacity as shown in the table below.

<b>Silo Capacity</b>	<b>Minimum Effluent Tank Capacity</b>
Less than 1500 <sup>3</sup>	20 litres for every 1m <sup>3</sup> silo capacity
1500 <sup>3</sup> or more	30,000 litres plus 6.7 litres for every 1m <sup>3</sup> silo capacity in excess of 1500 <sup>3</sup>

36. This means, for example that a 1000m<sup>3</sup> silo would need effluent tanks with a capacity of at least 20,000 litres. A 2000m<sup>3</sup> silo would need to have effluent tank capacity of 33,350 litres (i.e. 30,000 litres + [500 x 6.7 litres])
37. In the majority of cases these capacities should provide at least two days storage at peak flow. However, if the effluent tank provides inadequate storage and pollution occurs this would still be an offence. Effluent tank capacities are unlikely to be sufficient for 2 days storage for unwilted silage or silage made in an unroofed silo. You should check and empty your tanks as often as is necessary in the light of your own circumstances and experience.
38. If the base of the tank is below ground, the tank should be either prefabricated in one piece or of an alternative construction capable of meeting the requirement of being impermeable and resisting silage effluent for 20 years without maintenance. If you intend to opt for the latter, you should discuss your proposals with the Agency at the planning stage; as the Agency will require written confirmation that these requirements have been met. The Agency can provide a form to help you provide this confirmation.

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<sup>h</sup> ISBN 0 86017 352 6, ISSN 0305 408X; published by the Construction Industry Research and Information Association, 6 Storey’s Gate, Warminster, London SW1P 3AU.

39. In some instances you may wish to store silage effluent and slurry in the same

tank. If this method of storage is used then the storage container must be designed to withstand both types of neat effluent and, of course, have sufficient capacity to satisfy the requirements of both Schedules 1 and 2.

### *Field Silage*

40. Field silage for these purposes only include unbaled silage made on open ground. There should be no form of excavation works, nor floors nor walls on the site. If there are then the full requirements of Schedule 1 may be applied.
41. Making and storing field silage in field heaps or in large bags (non-baled) without an impermeable base or walls is allowed provided the site is suitable. You should choose a level site and make a careful assessment of the potential polluting risk to controlled waters. Proposals should be discussed with the Agency well in advance of silage making and, in any event, the Agency must be notified of the proposed site at least 14 days before it is first used. The Agency can provide a standard form for you to use in making this notification.
42. In considering site suitability, the Agency will take into account slope, soil permeability, soil compaction, degree of soil cracking and fissuring, and the risk of causing pollution of underground and surface water. Other factors include the proximity of roads and farm tracks (which may increase the risk of run-off reaching surface waters) or the existence of sensitive sites such as Sites of Special Scientific Interests (SSSIs).
43. Field silage sites have to meet the requirements of the Regulations. These include:
  - (a) Notifying the Agency of the proposed site at least 14 days before that site is first used. Provided the site is acceptable to the Agency, no further notifications are required unless there is an expansion of that site or new sites need to be considered.
  - (b) Siting at least 10 metres away from watercourses, ditches or land drains.
  - (c) Siting at least 50 metres away from water sources (springs, wells or boreholes) that supply water either for human consumption or used in farm dairies or in preparing human food. Water sources may be located on neighbouring property and you should investigate thoroughly such a possibility if your proposed site is within 50 metres of the boundary of neighbouring property.
44. Farmers who make field silage on a site not previously notified to the Agency or to the National Rivers Authority or on a site disallowed by the Agency, contravene the Regulations, and will be liable to prosecution. The penalties set out in Regulation 12 apply.

## **STORAGE OF SLURRY: REGULATION 4 AND SCHEDULE 2**

### *Slurry stores affected by the Regulations: Regulation 4*

45. The Regulations apply to all types of slurry storage systems including those constructed of earth. The Regulations do not apply to slurry stored temporarily in a mobile container with a capacity not larger than 18,000 litres. All other slurry stores including earth banked compounds which are newly constructed, substantially enlarged or substantially reconstructed after September 1991 must be built in accordance with the construction standards set out in Schedule 2. Earth-banked compounds should be regarded as slurry storage tanks for the purposes of the current British Standard (BS 5502: part 50 1993).
46. Existing slurry stores, constructed before September 1991, can still be used without alteration as long as they qualify as an “exempt structure” (see paragraph 7 and Regulation 6) unless the Agency specify further works to be undertaken.
47. Run-off from solid manure stores associated with a farmyard counts as slurry, for the purpose of these Regulations. It must be collected and stored either independently or in the main slurry disposal system.

### *Construction standards for slurry stores and reception pits: Schedule 2*

48. There are general requirements for the walls and bases of all slurry tanks, associated tanks, pipes and channels to meet the standards of impermeability and to be protected against corrosion as set out in the current British Standard (BS 5502: part 50 1993). The base and walls of the slurry tank and any associated reception pit must be capable of withstanding the loadings specified in BS 5502: part 50 1993. Further technical advice is contained in the guidance documents mentioned in paragraph 34. The need to comply with these design requirements means that professional advice will almost certainly be needed for the design and construction of all slurry installations including earth-banked compounds. All installations need to meet the durability life requirement of 20 years with maintenance.
49. In addition, for weeping-wall stores the base must extend beyond its walls and must include perimeter drains to an effluent tank to catch any escaped slurry.
50. When calculating the minimum size of any slurry installation, you must include provision for the likely quantities of rainwater falling directly on to the store and on areas which drain into the store (NB: The definition of “slurry” includes rainwater and yard washings mixed with excreta). You must also allow for an additional capacity over and above the expected quantity of slurry by including a minimum freeboard of 750mm for earth-banked compound above the specified level. Check the level of slurry in all installations regularly and make arrangements for the safe disposal of slurry before the tank is full. Particular care must be taken to ensure that lagoons or stores do not overflow: overfilling could lead to prosecution for pollution.

51. Where slurry is spread on the land, there is a requirement for a normal minimum of four months' storage capacity for slurry. In some cases more storage will be needed and in others less:
- Farmers who consider they have a safe year round slurry spreading system, which means that less than 4 months' storage is required, must consult the Agency to discuss their plans, as they will need to demonstrate to the Agency that this system is safe. The Agency in this event will probably need to see evidence, such as an appropriate farm waste management plan.
  - Farms in some areas, particularly those with above average rainfall, will require considerably more than 4 months' slurry storage capacity. Although this is not set out in these Regulations, farmers are advised to provide this extra capacity, to avoid the risk of causing water pollution and of subsequent prosecution under the general provisions of the Water Resources Act 1991.
52. Your local Agency area office will provide general guidance on where more than 4 months storage is likely to be required. However farmers will often find it useful to take additional professional advice on their storage requirements.
53. In calculating the size of any facilities used for the temporary storage of slurry, such as reception pits and associated channels, the guiding principle is that the system should be capable of being left for 2 days without overflowing. For example:
- Where the flow of slurry into the reception pit is controlled by a sluice, the reception pit must be sufficiently large to contain the maximum amount of slurry that could be released by opening any sluice. Channels leading to the sluice must be adequate to store two days' production of slurry.
  - Where there is no sluice, and the tops of the channels are the same height as the top of any reception pit, the capacity of the collection channels plus the reception pit must together be sufficient for at least 2 days' production of slurry.
  - Where there is no sluice, and the channels are higher than the reception pit, the capacity of the reception pit alone must be sufficient for at least 2 days' production of slurry.
  - Where there are no channels leading to the reception pit, the reception pit must have the capacity to contain at least 2 days' production of slurry.
  - Where channels discharge directly into a slurry storage tank the channels need not comply with the minimum storage capacity requirement.

- Where the amount of slurry collected is influenced by rainfall, the Agency often use data for the worst rainfall event in any 48 hour period which might happen every 5 years (known as 48 hour M5) to estimate the 2 day volume. However, a lower rainfall allowance and thence a smaller capacity for the reception pit may be agreed for installations where there is a minimal risk of causing pollution and where appropriate safeguards are put into place. Guidance and approval must be sought from the Agency who will assess individual cases with regard to design, construction and contingency arrangements in the event of system failure.
54. Outlet drainage pipes on slurry stores must have two valves in series; each capable of shutting off the flow of slurry and each kept locked shut when not in use. The requirement for two valves is a safety precaution: the second valve acts as a guard valve against failure of the first. The Regulations do not stipulate a minimum (or maximum) distance between each valve. The design and positioning of the valves must, however, take into account the possibility that one piece of debris could obstruct both valves if they are positioned too closely together. Each valve should be designed so that sufficient force can be exerted to break through accumulations of bedding material that may regularly pass through the system. Other drainage pipes do not need to have valves, if they drain into another tank which has sufficient capacity to prevent overflow in the event of a release of slurry. This part of the Regulations does not apply to a slurry storage tank or settlement tank which overflows through a pipe into another storage tank or settlement tank.
55. On some sites the best position for slurry stores and reception pits may be in an area affected by high ground water, which might cause the installations to float unless additional measures are undertaken. To overcome such difficulties, correctly designed pressure relief drainage may provide a safe method for removing excess water from the site. These 'clean' water drains are likely both to be within 10 metres of the structure and to have outfalls to a watercourse. Guidance and approval must be sought from the Agency who will assess individual cases with regard to design, construction and contingency arrangements in the event of system failure and may also ask you to seek professional advice to support your application.

## **AGRICULTURAL FUEL STORES: REGULATION 5 AND SCHEDULE 3**

### *Fuel stores affected by the Regulations: Regulation 5*

56. The Regulations apply to storage of fuel oil over 1500 litres in total quantity. Domestic fuel oil which is stored separately is not included in the 1500 litres. All agricultural fuel oil stores which are newly constructed, substantially enlarged or substantially reconstructed after September 1991 must be built in accordance with the construction standards set out in Schedule 3. Underground tanks and temporary storage in mobile fuel tanks are outside the scope of the Regulations. Where some, or all, of the fuel oil which is subject to these Regulations is stored in drums, these must be kept in a storage area which complies with the requirements of Schedule 3.
57. Existing fuel stores, constructed before September 1991, may still be used without alteration as long as they qualify as an “exempt structure” (see paragraph 17 and Regulation 6) unless the Agency specify further works to be undertaken.

### *Requirements for fuel oil storage areas: Schedule 3*

58. Fuel stores must be surrounded by barriers to stop oil escaping (bunds). The bund and the base of the storage area must be impermeable and likely to remain so with proper maintenance for at least 20 years: the bund must not contain any gaps or holes, nor can it have a drain.
59. As the bund will contain no outlet or drain it will be necessary to have a method of removing rain water and spilt oil. Ideally, the storage area should be roofed over to prevent rain getting into the bund. If fuel oil, or a mixture of fuel oil and water, collects in a bund, the farmer will be responsible for removing the liquid and disposing of it safely and without causing pollution.
60. There are different minimum volumes for bunds where fuel oil is stored in drums, barrels or tanks, and where larger tanks or containers are used. The table on the following page illustrates these different cases.

<b>Storage Type</b>	<b>Minimum Volume of Bund</b>
Single tanks	110% of capacity of the tank
Several tanks	110% of the capacity of the largest tank; or 25% of the total volume of oil which could be stored at any one time whichever is greater
All other cases; eg. Drums, barrels or several small tanks	At least 25% of the total volume of oil which could be stored at any one time.

61. There are a number of package systems available, incorporating both a storage tank and a bunding system. Some of these may not fully satisfy the requirements of these regulations. It is therefore advisable to obtain written confirmation from the supplier that the requirements are met. The Agency is also conducting some studies into the suitability of such systems and intends to make these findings publicly available.
62. When oil is stored in tanks with taps and valves it is important to ensure that any leak or discharge of oil from any part of the tank is trapped within the bund. There is a requirement that all such taps and valves should be designed so as to discharge downwards, and permanently fixed taps and valves must be located within the bund. Valves must be locked shut when not in use.
63. The discharge pipe from the tank must be fitted with a nozzle with an automatic shut-off device. This pipe must be locked within the banded area when not in use. When not in use, all valves and filling devices should be switched off and locked shut.
64. Although not a requirement of the Regulations, the use of sight glasses on fuel tanks (which would enable operators to see the level of oil in the tank) and the use of alarms (which would alert operators to possible overfilling) is recommended.

*Composite version of*

**THE CONTROL OF POLLUTION (SILAGE, SLURRY AND  
AGRICULTURAL FUEL OIL) REGULATIONS 1991 AND AS  
AMENDED 1997**

*This is not an authoritative legal text. No reliance should be placed upon it  
For the purposes of legal interpretation*

**Interpretation**

2. In these Regulations, unless the context otherwise requires –

“construct” includes install and cognate expressions shall be construed accordingly;

“fuel oil” means oil intended for use as a fuel for the production of heat or power but does not include oil intended for use exclusively as a fuel for heating a farmhouse or other residential premises on a farm and stored separately from other oil;

“livestock” means –

- (a) any animals kept for the production of food or wool; or
- (b) any birds kept for the production of food;

“reception pit” means a pit used for the collection of slurry before it is transferred into a slurry storage tank or for the collection of slurry discharged from such a tank;

[“relevant substance” means slurry, fuel oil, a crop being made into silage or silage which is being stored;

“silage effluent” means effluent from silage or a crop being made into silage;

“silo” means any structure used for making or storing silage;]

“slurry” means –

- (a) excreta produced by livestock whilst in a yard or building; or
- (b) a mixture consisting wholly or mainly of such excreta, bedding, rainwater and washings from a building or yard used by livestock or any combination of these,

of a consistency that allows it to be pumped or discharged by gravity at any stage in the handling process;

“slurry storage system” means –

- (a) a slurry storage tank;
- (b) any reception pit and any effluent tank used in connection with the slurry storage tank;  
and
- (c) any channels and pipes used in connection with the slurry storage tank, any reception pit or any effluent tank; and

“slurry storage tank” includes a lagoon, pit (other than a reception pit) or tower used for the storage of slurry.

### **Making of silage**

3. (1) [Subject to paragraph (1A) below,] no person shall have custody or control of any crop which is being made into silage [or any silage which is being stored] unless –
- (a) [subject to paragraph (1B) below,] it is kept in a silo in relation to which the requirements of Schedule 1 are satisfied or which is an exempt structure by virtue of regulation 6 below; or
  - (b) it is compressed in the form of bales which are wrapped and sealed within impermeable membranes (or are enclosed in impermeable bags) and are stored at least 10 metres from any [inland freshwaters or coastal waters] which effluent escaping from the bales could enter; [or
  - (c) it is a crop being made into field silage or silage which is being stored on open land and –
    - (i) the Agency is given notice of the place where the silage is to be made or stored at least 14 days before it is first used for that purpose; and
    - (ii) the place is at least 10 metres from any inland freshwaters or coastal waters, and at least the specified distance <sup>(a)</sup> from any protected water supply source <sup>(b)</sup>, which silage effluent could enter if it escaped.]

[(1A) Paragraph (1) above shall not apply to silage whilst it is stored temporarily in a container, trailer or vehicle in connection with its transport about the farm or elsewhere.

(1B) The Agency may relax by notice the requirements of paragraph (1)(a) above subject to such conditions (if any) as are specified in the notice, where a silo is used solely for the purpose of storing silage made elsewhere if it is satisfied that there is no significant risk of pollution of controlled waters from that use of the silo.

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(a) See regulation 3(1D).

(b) See regulation 3(1C).

- (1C) A water supply source is a protected water supply source if –
- (a) any relevant abstraction from the source is licensed under Part II of the Water Resources Act 1991; or
  - (b) any relevant abstraction from the source is not so licensed but the person making or storing the silage was aware of the source’s location before making of the silage began or, in the case of silage made elsewhere, before it was stored on the land in question.

(1D) The specified distance in relation to a protected water supply source is 50 metres from the nearest relevant abstraction point].

(2) No person having custody or control of any crop which is being, or has been, made into silage in the manner described in paragraph (1)(b) above shall open or remove the wrapping of any bales unless he does so at a place at least 10 metres from any [inland freshwaters or coastal waters] which silage effluent could enter as a result.

[(3) In this regulation –

“field silage” means silage made on open land by a method which is different from that described in paragraph (1) (b) above;

“relevant abstraction” means the abstraction of water from inland freshwaters or ground waters for use for –

- (a) human consumption or other domestic purposes within the meaning of section 218 of the Water Industry Act 1991<sup>(a)</sup>; or
- (b) for manufacturing food or drink for human consumption;

“water supply source” means inland freshwaters or ground waters from which any relevant abstraction is made or licensed to be made].

### **Storage of slurry**

4. (1) Subject to paragraph (2) below, a person having custody or control of slurry shall store it only in a slurry storage system in relation to which the requirements of Schedule 2 are satisfied or which is an exempt structure by virtue of regulation 6 below.

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(a) 1991 c.56

- (2) Paragraph (1) above shall not apply to slurry whilst it is stored temporarily in a tanker with a capacity not exceeding 18,000 litres which is used for transporting slurry on roads or about a farm.

### **Storage of fuel oil on farms**

5. (1) Subject to paragraph (2) below, no person shall have custody or control of fuel oil on a farm unless it is stored –
- (a) in a fuel storage tank within a storage area in relation to which the requirements of Schedule 3 are satisfied;
  - (b) in drums within such a storage area;
  - (c) temporarily in a tanker used for transporting fuel oil on roads or about the farm;
  - (d) in a fuel storage tank which is an exempt structure by virtue of regulation 6 below; or
  - (e) in an underground fuel storage tank.
- (2) Paragraph (1) above shall not apply if the total quantity of fuel stored on the farm does not exceed 1500 litres.

### **Exemptions**

6. A silo, slurry storage system or fuel storage tank is for the time being an exempt structure if –
- (a) it was used before 1<sup>st</sup> March 1991 for the purpose of making silage, storing slurry or, as the case may be, storing fuel oil;
  - (b) where it was not used before 1<sup>st</sup> March 1991 for that purpose, it was constructed before that date for such use; or
  - (c) a contract for its construction was entered into before 1<sup>st</sup> March 1991 or its construction was commenced before that date and in either case was completed before 1<sup>st</sup> September 1991, and it has not ceased to be an exempt structure by virtue of regulation 8(1) below.

[.....]

### **Loss of exemption**

8. (1) A structure which is an exempt structure by virtue of regulation 6 above shall cease to be an exempt structure if:
- (a) any requirement of a notice under regulation 9 below is not complied with within the period stated in the notice; or

- (b) at any time on or after 1<sup>st</sup> March 1991 it is substantially enlarged or substantially reconstructed unless a contract for the work was entered into or the work was commenced before that date and in either case the work was completed before 1<sup>st</sup> September 1991.

[.....]

- (3) Any reference in [paragraph (1) above] to the period stated in a notice is to that period as extended if it has been extended under regulation 9(4) below or by virtue of regulation 10(5) below; and any reference in those paragraphs to a requirement of a notice is to that requirement as modified if it has been modified under regulation 9(4) below.

**Notice requiring works etc.**

- 9. [(1)The Agency may serve notice on any person, who has custody or control of any relevant substance in circumstances in which these Regulations apply, requiring him to carry out such works, take such precautions or such other steps as are specified in the notice and which, in the opinion of the Agency, are appropriate, having regard to any requirements of these Regulations in relation to that substance, for reducing to a minimum any significant risk of pollution of controlled waters arising from the custody or control of that substance.]
- (2) The notice shall specify or describe the works, precautions or other steps which the person is required to carry out or take, state the period within which any such requirement is to be complied with and inform him of the effect in relation to the notice of regulation 10 below.
- (3) The period for compliance stated in the notice shall be such period as is reasonable in the circumstances and shall not in any case be less than 28 days.
- (4) The [Agency] may at any time –
  - (a) withdraw the notice;
  - (b) extend the period for compliance with any requirement of the notice;
  - (c) with the consent of the person on whom the notice is served, modify the requirements of the notice,and shall do so if so directed by the Secretary of State under regulation 10(4) below.

### **Appeals against notices requiring works etc.**

10. (1) A person served with a notice under regulation 9 above may within the period of 28 days beginning with the day on which that notice is served (or within such longer period as the Secretary of State may allow) appeal to the Secretary of State against the notice.
- (2) An appeal under this regulation shall be made by the appellant serving notice on the Secretary of State and the notice shall contain or be accompanied by a statement of the grounds of appeal.
- (3) Before determining an appeal under this regulation the Secretary of State shall, if requested to do so by the appellant or the [Agency], afford them an opportunity of appearing before and being heard by a person appointed by the Secretary of State for the purpose.
- (4) On determining an appeal under this regulation the Secretary of State shall have power to direct the [Agency] to withdraw the notice under regulation 9 above, to modify any of its requirements, to extend the period for compliance with any requirement or to dismiss the appeal.
- (5) The period for compliance with a notice under regulation 9 above shall, subject to any direction under paragraph (4) above, be extended [so that it expires] on the date on which the Secretary of State finally determines the appeal or, if the appeal is withdrawn, the date on which it is withdrawn.

### **Notice of construction etc.**

11. A person who proposes to have custody or control of any relevant substance which is to be kept or stored on a farm in a silo, slurry storage system or, as the case may be, fuel storage area constructed, substantially enlarged or substantially reconstructed on or after 1<sup>st</sup> September 1991 shall serve notice on the [Agency] specifying the type of structure to be used and its location at least 14 days before it is to be used for such keeping or storage.

### **Criminal offences**

12. (1) A person who contravenes regulation 3(1) or (2), 4(1) or 5(1) above shall be guilty of an offence and liable –
  - (a) on summary conviction, to a fine not exceeding the statutory maximum;
  - (b) on conviction on indictment, to a fine.
- (2) A person who contravenes regulation 11 above shall be guilty of an offence and liable on summary conviction to a fine not exceeding level 2 on the standard scale.

## **SCHEDULE 1**

## **Regulation 3(1)a**

### **REQUIREMENTS FOR SILOS**

1. The requirements which have to be satisfied in relation to a silo are that –
  - (a) it complies with the following provisions of this Schedule; or
  - (b) it is designed and constructed in accordance with the standard on cylindrical forage tower silos published by the British Standards Institution and numbered BS 5061: 1974.
2. The base of the silo shall extend beyond any walls of the silo and shall be provided as its perimeter with channels designed and constructed so as to collect any silage effluent which may escape from the silo and adequate provision shall be made for the drainage of that effluent from those channels to an effluent tank through a channel or pipe.
3. The capacity of the effluent tank –
  - (a) in the case of a silo with a capacity of less than 1500 cubic metres, shall be not less than 20 litres for each cubic metre of silo capacity; and
  - (b) in the case of a silo with a capacity of 1500 cubic metres or more, shall be not less than 30 cubic metres plus 6.7 litres for each cubic metre of silo capacity in excess of 1500 cubic metres.
4. The base of the silo, the base and walls of its effluent tank and channels and the walls of any pipes shall be impermeable.
5. The base and any walls of the silo, its effluent tank and channels and the walls of any pipes shall, so far as reasonably practicable, be resistant to attack by silage effluent.
6. No part of the silo, its effluent tank or channels or any pipes shall be situated within 10 metres of any [inland freshwaters or coastal waters] which silage effluent could enter if it were to escape.
7. If the silo has retaining walls –
  - (a) the retaining walls shall be capable of withstanding minimum wall loadings calculated on the assumptions and in the manner indicated by paragraphs 13.9.1 to 13.9.9 of the code of practice on buildings and structures for agriculture published by the British Standards Institution and numbered BS 5502: Part 22: 1993
  - (b) the silo shall at no time be loaded to a depth exceeding the maximum depth consistent with the design assumption made in respect of the loadings of the retaining walls; and
  - (c) notices shall be displayed on the retaining walls in accordance with paragraph 13.9.9 of that code of practice.

8. Subject to paragraph 9 below, the silo, its effluent tank and channels and any pipes shall be designed and constructed so that with proper maintenance they are likely to satisfy the requirements of paragraphs 2 and 5 and, if applicable, 7(a) above for a period of at least 20 years.
9. Where any part of an effluent tank is installed below ground level, the tank shall be designed and constructed so that without maintenance it is likely to satisfy the requirements of paragraphs 4 and 5 above for a period of at least 20 years.

## **SCHEDULE 2**

### **Regulation 4(1)**

#### **REQUIREMENTS FOR SLURRY STORAGE SYSTEMS**

1. The requirements which have to be satisfied in relation to a slurry storage system are as follows:
2. The base of the slurry storage tank, the base and walls of any effluent tank, channels and reception pit and the walls of any pipes shall be impermeable.
3. The base and walls of the slurry storage tank, any effluent tank, channels and reception pit and the walls of any pipes shall be protected against corrosion in accordance with paragraph 7.2 of the code of practice on buildings and structures for agriculture published by the British Standards Institution and numbered BS 5502: Part 50: 1993.
4. The base and walls of the slurry storage tank and of any reception pit shall be capable of withstanding characteristic loads calculated on the assumptions and in the manner indicated by paragraph 5 of that code of practice.
5. (1) Any facilities used for the temporary storage of slurry before it is transferred to a slurry storage tank shall have adequate capacity to store the maximum quantity of slurry which (disregarding any slurry which will be transferred directly into a slurry storage tank) is likely to be produced on the premises in any two day period [or such smaller capacity as the Agency may agree in writing is adequate to avoid any significant risk of pollution of controlled waters].  
  
(2) Where slurry flows into a channel before discharging into a reception pit and the flow of slurry out of the channel is controlled by means of a sluice, the capacity of the reception pit shall be adequate to store the maximum quantity of slurry which can be released by opening the sluice.
6. (1) Subject to sub-paragraph (2) below, the slurry storage tank shall have adequate storage capacity for the likely quantities of slurry produced from time to time on the premises in question having regard to –  
  
(a) the proposed method of disposal of the slurry (including the likely rates and times of disposal); and

- (b) the matters mentioned in sub-paragraph (3) below.
- (2) Where it is proposed to dispose of the slurry on the premises by spreading it on the land nothing in sub-paragraph (1) above shall require the tank to have a greater storage capacity than is adequate, having regard to the matters mentioned in sub-paragraph (3) below, to store the maximum quantity of slurry which is likely to be produced in any continuous for month period.
- (3) The matters to which regard is to be had under sub-paragraphs (1) and (2) above are –
- (a) the storage capacity of any other storage tank on the premises in question;
  - (b) the likely quantities of rainfall (including any fall of snow, hail or sleet) which may fall or drain into the slurry storage tank during the likely maximum storage period; and
  - (c) the need to make provision for not less than 750 millimetres of freeboard in the case of a tank with walls made of earth and 300 millimetres of freeboard in all other cases.
7. No part of the slurry storage tank or any effluent tank, channels or reception pit shall be situated within 10 metres of any [inland freshwaters or coastal waters] which slurry could enter if it were to escape [unless such precautions are taken as the Agency may agree in writing are adequate to avoid any significant risk of pollution of controlled waters].
8. The slurry storage tank and any effluent tank, channels, pipes and reception pit shall be designed and constructed so that with proper maintenance they are likely to satisfy the requirements of paragraphs 2 to 4 above for a period of at least 20 years.
9. Where the walls of the slurry storage tank are not impermeable, the base of the tank shall extend beyond its walls and shall be provided with channels designed and constructed so as to collect any slurry which may escape from the tank and adequate provision shall be made for the drainage of the slurry from those channels to an effluent tank through a channel or pipe.
10. (1) Subject to sub-paragraph (2) below, where the slurry storage tank, any effluent tank or reception pit is fitted with a drainage pipe there shall be two valves in series on the pipe and each valve shall be capable of shutting off the flow of slurry through the pipe and shall be kept shut and locked in that position when not in use.
- (2) Sub-paragraph (1) above does not apply in relation to slurry storage tank which drains through the pipe into another slurry storage tank of equal or greater capacity or where the tops of the tanks are at the same level.
11. In the case of a slurry storage tank with walls which are made of earth the tank shall not be filled to a level which allows less than 750 millimetres of freeboard.

### **SCHEDULE 3**

### **Regulation 5(1)(a)**

#### **REQUIREMENTS FOR FUEL OIL STORAGE AREAS**

1. The requirements which have to be satisfied in relation to a fuel oil storage area are as follows:
2. The fuel storage area shall be surrounded by a bund capable of retaining within the area –
  - (a) in a case where there is only one fuel storage tank within the fuel storage area and fuel oil is not otherwise stored there, a volume of fuel oil not less than 110 per cent of the capacity of the tank;
  - (b) in a case where there is more than one fuel storage tank within the fuel storage area and fuel oil is not otherwise stored there, a volume of fuel oil not less than whichever is the greater of :-
    - (i) 110 per cent of the capacity of the largest tank within the storage area; and
    - (ii) 25 per cent of the total volume of such oil which could be stored in the tanks within the area;
  - (c) in a case where there is no fuel storage tank within the fuel storage area, a volume of fuel oil not less than 25 per cent of the total of such oil at any time stored within the area;
  - (d) in any other case, a volume of fuel oil not less than any of the following:-
    - (i) 110 per cent of the capacity of the fuel storage tank or, as the case may be, of the largest tank within the fuel storage area;
    - (ii) 25 per cent of the total volume of such oil at any time stored within the area.
3. The bund and the base of the storage area shall be impermeable and shall be designed and constructed so that with proper maintenance they are likely to remain so for a period of at least 20 years.
4. Every part of any fuel storage tank shall be within the bund.
5. Any tap or valve permanently fixed to the tank through which fuel oil can be discharged to the open shall also be within the bund, shall be so arranged as to discharge vertically downwards and shall be shut and locked in that position when not in use.

6. Where fuel from the tank is delivered through a flexible pipe which is permanently attached to the tank –
  - (a) it shall be fitted with a tap or valve at its end which closes automatically when not in use; and
  - (b) it shall be locked in a way which ensures that it is kept within the bund when not in use.
  
7. No part of the fuel storage area or the bund enclosing it shall be situated within 10 metres of any [inland freshwaters or coastal waters] which fuel oil could enter if it were to escape.