



Department of Environment, Food and Agriculture

Representative Sampling Guidance

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1.0 Introduction

This guidance document is designed to assist with taking representative samples in proportion to the quantity of waste.

To obtain accurate analytical results for any waste analysis it is important that representative samples are taken of the waste to ensure a reliable waste classification and hazard assessments can be conducted. It is the waste producer's responsibility to ensure that any sample sent to the laboratory for analysis is representative of the source waste.

The type of sampling and number of samples taken should be sufficient to obtain accurate results especially for non-homogenous waste streams. The integrity of the samples during sampling and transporting to the laboratory should also be maintained. Contact the analysing laboratory in advance of sampling to discuss sample size/preparation/paperwork etc.

2.0 Number of samples from stockpiles

A number of representative samples should be taken at various locations throughout the stockpile or field of waste depending on the quantity of waste present.

The larger the quantity of waste the greater number of samples need to be taken to ensure any analytical results represent the true nature of the waste.

Quantity of Waste Tonnes	Homogeneous Waste Number of samples	Heterogeneous & New Wastes Stream Number of samples
< 1	1	2
1 – 5	2	4
5 – 25	3	6
25 – 100	4	8
+100	5 (+5 per 100 tonnes)	10 (+10 per 100 tonnes)

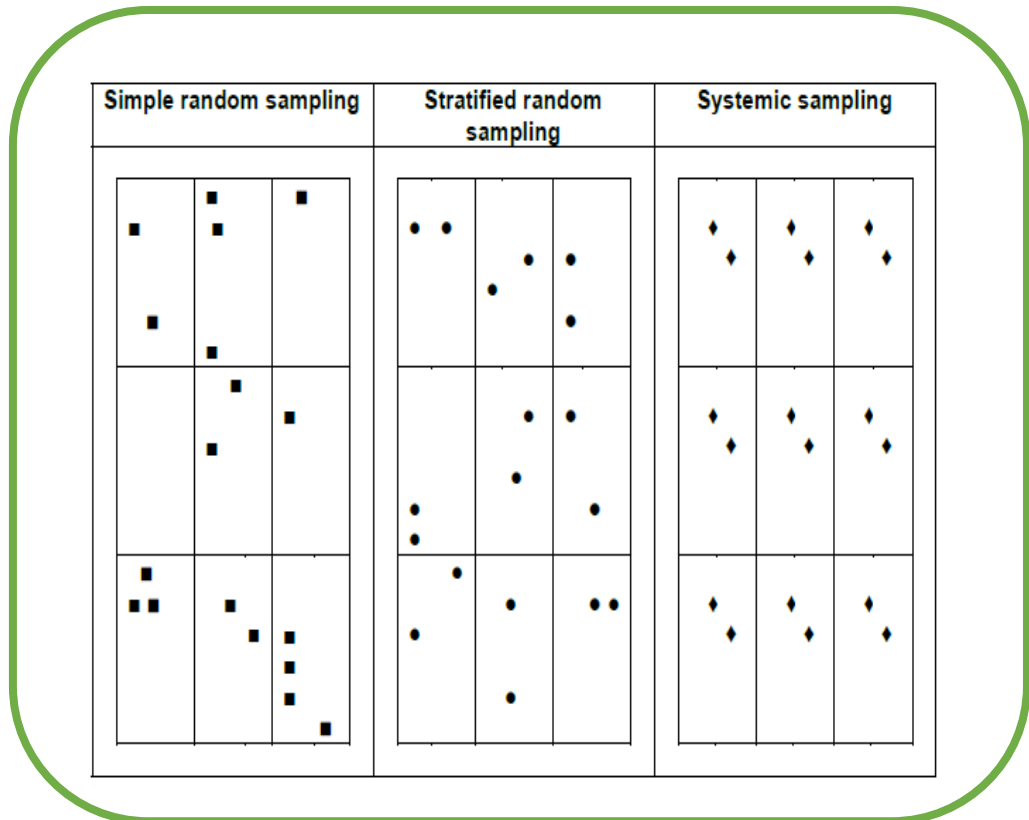
3.0 Sampling locations

3.1 Waste either stockpiled or field

The representative samples should be randomly taken from various areas of the waste stockpile or from random locations across the field of waste. It should be spread out as evenly as possible, this includes top-to-bottom of the waste stockpile and at varying depths throughout the field where the waste is layered. Samples should not be pulled just from tops of piles. Flattening the pile could assist with obtaining samples deep with a waste stockpile.

Different sampling patterns can be applied to ensure the representative composite samples are taken across the whole plane of flattered stockpiled waste or field sampling locations.

Waste stockpile or field sampling locations



3.2. Continuous waste generation

If the waste is continuously being created several samples should be taken at determined intervals throughout the waste generation process. This could be by taking samples from a conveyor belt using a dedicated sampling system. Take into account any variance in waste that could occur due to the waste generation process.



Samples may need to be taken on different days, or shifts



4.0 Sampling

4.1 Sub-sampling

Each sample taken from the waste to be representative will need to be made up from several sub-samples especially for heterogeneous waste.

At least eight (8) to ten (10) sub-samples of approximately 2kg should be obtained. These samples should be combined into a larger pile and subsequently coned and quartered until at least opposite quartering piles combined is a laboratory sized sample usually 500g. This should give a composite samples that represent the variability of the waste stream.

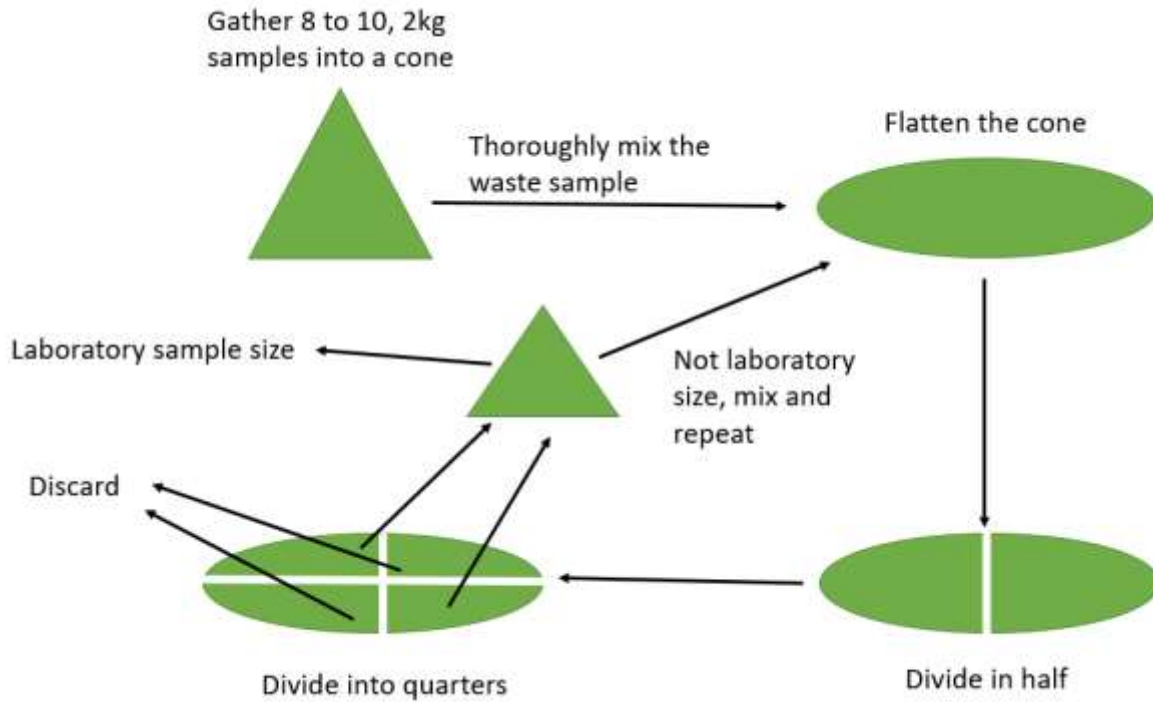
This sub-sampling should be repeated for the number of samples required as outlined in Section 2 and in the locations identified in Section 3.

4.2 Cone & Quartering

During the coning and quartering process large stones should be removed and weighed. If the number and types of large stones in the sampling process accurately reflects the whole waste stream the quantity of this inert matter should be taken into consideration in the laboratory results and in the hazard assessment. If the number of stones in the waste are numerous and large the waste may need to be sieved to remove this material before final disposal. The hazard assessment must then represent the remaining waste.

Any material discarded from the waste must be documented to justify your approach in any laboratory results correction due to the discarded material.

Cone and quartering diagram



5.0 Sampling frequency

A sampling frequency plan is required to cover the complete disposal of the waste especially if the disposal is carried out in batches over a period of time due to there being a large quantity of waste, more waste is generated or the composition of the waste changes e.g. due to weathering. The moisture content may vary seasonally which increase or decrease the concentration of hazardous substance(s) in the waste.

References & Additional Information Sources

UK Guidance on the classification and assessment of waste Technical Guidance WM3.
Available online: <https://www.gov.uk/government/publications/waste-classification-technical-guidance>

UK Waste sampling and testing for disposal to Landfill (withdrawn) Available online:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/862354/Sampling_and_testing_of_waste_for_landfill.pdf

UK Derivation and use of soil screening values for assessing ecological risks Available online:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/864078/Soil_screening_values_for_assessing_ecological_risk_report.pdf

Isle of Man Waste Regulation Home Page
<https://www.gov.im/about-the-government/departments/environment-food-and-agriculture/environment-directorate/environmental-protection-unit/waste-regulation/>

Waste Disposal Licence Register
Available online: https://www.gov.im/media/1371063/wdl_register_2021_v1.pdf

Isle of Man Waste Management Home Page
<https://www.gov.im/about-the-government/departments/infrastructure/waste-management/>

Isle of Man Waste Civic Amenity Sites Home Page
<https://www.gov.im/categories/home-and-neighbourhood/civic-amenity-sites/>

Isle of Man Import and Export of Waste Home Page
<https://www.gov.im/about-the-government/departments/environment-food-and-agriculture/environment-directorate/environmental-protection-unit/waste-regulation/import-and-export-of-waste/>