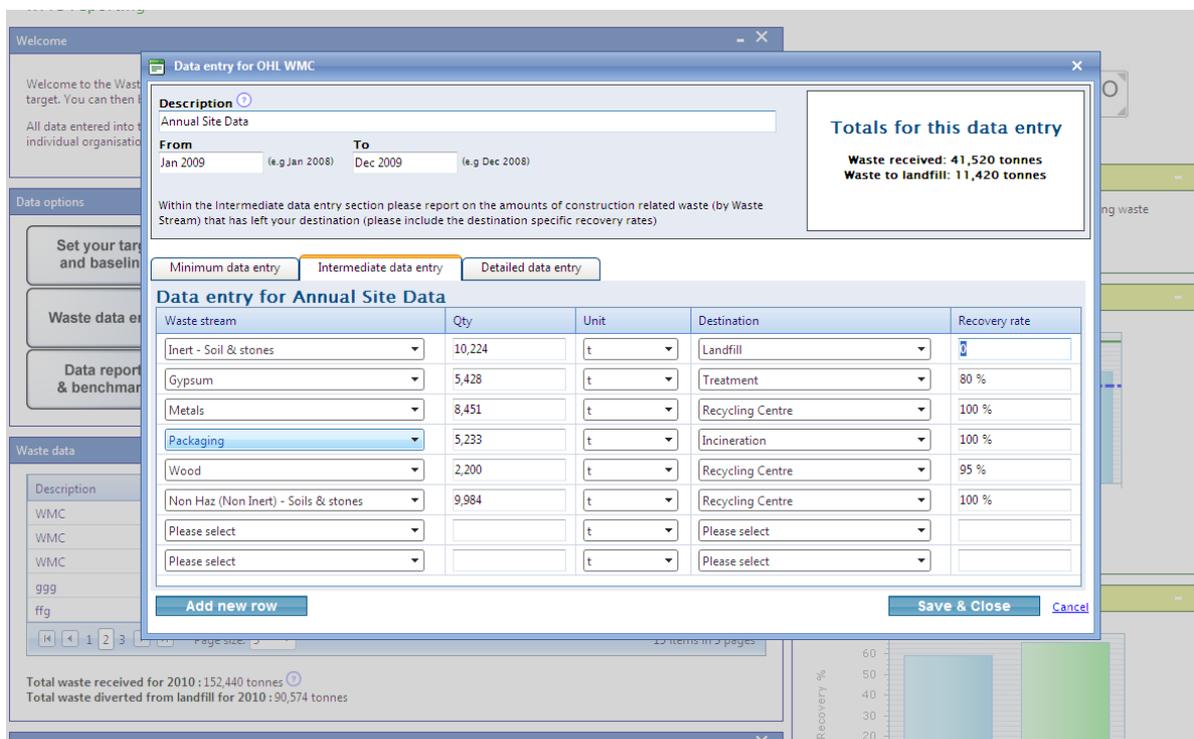


Reporting Guidance

Halving Waste to Landfill: Annual reporting guidance for waste management contractors



Guidance for waste management contractors on how to complete the annual report requirement to fulfil the Halving Waste to Landfill Commitments

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where resources are used sustainably.

We work with businesses and individuals
to help them reap the benefits of reducing
waste, develop sustainable products and
use resources in an efficient way.

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Document reference: MRF135-003. Report prepared by Oakdene Hollins Ltd for Mark Collinson, WRAP, 2010

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Front cover photography: Screen shot from the Halving Waste to Landfill Reporting Portal

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Abbreviations

CDE	construction, demolition and excavation
EWC	European Waste Catalogue
LoW	List of Wastes
m³	cubic metre(s)
PAS	Publicly Available Specification
SSWAT	Site-Specific Waste Analysis Tool
tcm	tonnes per cubic metre
WMC	waste management contractor
WRAP	Waste & Resources Action Programme

Who and what is this document for?

This document is aimed at Waste Management Contractors (WMCs) handling construction, demolition and excavation (CDE) waste and who have signed WRAP's (Waste & Resources Action Programme) Halving Waste to Landfill Commitment. One of the key pledges which you have made is to report on the amount and types of material you have recovered from the waste passing through your site(s). Your material recovery performance needs to be entered at least once a year – and preferably more often – onto WRAP's Halving Waste to Landfill Reporting Portal. This guidance document outlines how to go about doing this.

Method outline

You need to collect and report on the following performance measurements on at least an annual basis:

- **A - Total waste received**
- **B - Waste recovered – by material type***
- **C - Total waste sent to landfill**
- **D - Waste sent to landfill – by material type***

* optional.

The following sections outline how each measurement should be derived and reported.

A - Total waste received (required)

Measurement A is a single figure for the **total weight in tonnes of all wastes accepted on to your site** over 12 months. This period can represent either a calendar year or a financial year depending on what is more convenient for your company. If you operate more than one site, then you will need to aggregate these figures. Double-counting is not permitted. For example, where the same waste material passes from one site to another within your organisation then you must account for this only once. To comply with waste management good practice, all weight measurements must be obtained using a correctly calibrated and accurate weighbridge.

B - Waste recovered – by material type (optional)

Measurement B consists of a series of figures representing the **total weight in tonnes of each segregated material** which has been recovered by your site(s). Material types must be classified using European Waste Catalogue (EWC) codes, a list of which can be found in [Appendix 1](#).

In this context, 'recovered' means you have prepared the material for any disposal route which avoids landfill. This could be material which arrived on your site already in segregated form (i.e. the result of on site segregation by customers), or material which you separated yourself. Destinations may include reprocessing, reuse, remanufacture or energy generation¹. Where a recovered material is sent to more than one destination (e.g. two different plastics reprocessors), you should record the total weight of material sent to each destination. You are NOT permitted to include stockpiles of material which you intend to send for recovery but which have not yet left your site².

Again, weight measurements must be obtained using a weighbridge and aggregated for the same 12 month reporting period used above.

You should ultimately obtain a **Measurement B** for each material type you have recovered.

¹ 'Recovery' sometimes applies specifically to energy generation, but for the purposes of Halving Waste to Landfill reporting the term refers to any non-landfill fate of waste materials.

² Experience shows that stockpiled materials intended for recovery may sometimes have to be disposed of to landfill following unanticipated downturns in recycling markets.

C - Total waste sent to landfill (required)

Measurement C is a single figure for the total weight in tonnes of **all waste leaving your site(s) for landfill** disposal over the 12 month reporting period, as measured using a weighbridge.

D - Waste sent to landfill – by material type (optional)

Measurement D consists of a series of figures representing **the total weight in tonnes of each material type** leaving your site(s) for landfill over the 12 month reporting period, classified by EWC code

Unlike the previous figures, these measurements will need to be estimates because waste destined for landfill is generally sent in consignments containing mixed rather than segregated waste types, and it is impractical to separate out each material type for individual weighing.

The easiest method of obtaining **Measurement D** is based on a visual assessment of the volumes of material in each consignment. It makes use of version 1 of WRAP's Site-Specific Waste Analysis Tool (SSWAT), freely available from www.wrap.org.uk/construction/how_do_i_reduce_waste/sswat_form.html.

This method is now described below, in conjunction with the following worked example:

Example: The visual assessment of a 14 cubic yard container of materials being sent to landfill reveals that wood and soils comprise approximately 25% and 75% by volume respectively. The net weight of the materials, from weighbridge records, is **10.88 tonnes**.

Figure I. Worked example using SSWAT

SSWAT Site-Specific Waste Analysis Tool								
Customer Name : <input type="text"/>		Nominal container volume : 10.70 m ³ ← C		Total weight of contents from weighbridge : 10.88 t ← D		Select mixed or segregated waste : Mixed		
Date (dd/mm/yyyy) : <input type="text"/>				Overall waste consignment recovery : 0.0%				
Site Name : <input type="text"/>								
Ticket Number : <input type="text"/>								
Material	List of Waste Code	Estimated proportion of material (% of total volume)	Volume to weight conversion factor (t/m ³)	Calculated weight in container (t)	Proportion of this material diverted from landfill		Material in this consignment diverted from landfill (t)	
					Mixed Consignments (%)	Segregated Consignments (%)		
Major Materials	Cardboard & paper	15 01 01	0.20	0.00	0%		0.00	
	Inerts & hardcore	17 01 07	1.4	0.00	0%		0.00	
	Metal (any)	17 04 07	0.42	0.00	0%		0.00	
	Timber - not pallets	17 02 01	25 % ← A	0.34	0.90 ← E	0%		0.00
	Plasterboard & gypsum	17 08 02		0.33	0.00	0%		0.00
	Plastic - film	15 01 02		0.22	0.00	0%		0.00
	Plastic - rigid	17 02 03		0.23	0.00	0%		0.00
	Soils & stones	17 05 04	75 % ← B	1.25	9.98 ← F	0%		0.00
	Timber pallets	15 01 03		0.23	0.00	0%		0.00
	Expanded polystyrene	15 01 02		0.2	0.00	0%		0.00
Minor Materials	Paint pots etc	15 01 10	0.21	0.00	0%		0.00	
	Tyres	16 01 03	0.47	0.00	0%		0.00	
	WEEE	16 02 14	0.26	0.00	0%		0.00	
	Vehicle batteries	16 06 01	1.35	0.00	0%		0.00	
	Oil containers	16 07 08	0.19	0.00	0%		0.00	
	Glass	17 02 02	0.61	0.00	0%		0.00	
	Tar, asphalt	17 03 02	0.82	0.00	0%		0.00	
	Cables & wires	17 04 11	0.25	0.00	0%		0.00	
	Insulation	17 06 04	0.25	0.00	0%		0.00	
	Other (may include recyclables)	17 09 04	0.87	0.00	0%		0.00	
	Other (non-recyclable)	17 09 04	0.87	0.00	0%		0.00	
	Food & canteen	20 01 08	0.20	0.00	0%		0.00	
	Textiles & carpets	20 01 11	0.27	0.00	0%		0.00	
	Garden & park wastes	20 02 01	0.38	0.00	0%		0.00	
	Furniture & bulky items	20 03 07	0.18	0.00	0%		0.00	
TOTAL		100 %		10.88			0.00	

- Firstly, make a visual inspection of each consignment destined for landfill to estimate the percentage composition by volume of each material type. (Worked example: wood 25%, soils 75%). Enter these percentages into SSWAT – i.e. in the cells marked 'A' and 'B' in Figure I)
- Record the volume (m³) of the container used for the consignment of waste destined for landfill. (Worked example: The container is 14 cubic yards, equating to 10.7 m³ – see appendix B, which is entered in cell 'C' on SSWAT)
- Weigh the consignment and obtain the net weight (tonnes) of the waste (Worked example: The waste weighed 10.88 tonnes which is entered in the cell 'D' on SSWAT)
- SSWAT automatically estimates the weight of each material type using the overall consignment weight, the relative volumes of each material (a hidden calculation) and density conversion factors. (Worked example: SSWAT calculates that the weight of wood and soils in the container is 0.90 tonnes (cell 'E') and 9.98 tonnes (cell 'F'), respectively).
- Finally, sum the estimated weights for each material type sent to landfill over the 12 month reporting period to arrive at **Measurement D** for each material.

Reporting on the Waste to Landfill Portal

You can report your site's material recovery performance as frequently as you wish on WRAP's Waste to Landfill Portal so long as you do so at least once every 12 months. Reporting is straightforward once you have obtained **Measurements A+C** as described above (or **B+D** if you're reporting in greater detail).

Reporting Measurements	
A	Total waste received
B	Waste recovered – by material type
C	Total waste sent to landfill
D	Waste sent to landfill – by material type

- Log in to the Portal website: <http://reportingportal.wrap.org.uk/Home.aspx> (N.B., it is assumed you have previously registered. If not, follow the simple instructions on the Portal Homepage to do so).
- Click on 'Waste Data Entry'
- In the pop-up screen you can choose to enter data in one of three levels:
 - *minimum data entry*: At this level you are only required to enter the tonnes of waste received and the tonnes of waste sent to landfill thereby enabling calculation of the waste recovery rate.
This is sufficient for the Halving Waste to Landfill requirements.
 - *intermediate data entry*: You may choose to input more detailed data about your operation, maybe to benchmark yourself against industry or to provide detailed reports for your clients. This option enables entry of more specific information on the waste received and its destination.
 - *detailed data entry*: The same as intermediate data entry except that waste streams are assigned a specific LoW code.

- For the purposes of Halving Waste to Landfill, minimum data entry is acceptable. Here, you simply enter the total waste received by your site(s) over the 12 month reporting period - **Measurement A** described above, and the total waste you sent to landfill over the same period - **Measurement C**. *i.e.* "I took in this much waste, and sent this much to landfill". (Figure II).

Figure II Minimum data entry on the Halving Waste to Landfill Reporting Portal

- The intermediate level requires you to break down the material recovered or landfilled into 12 major material types (including 'mixed C&D waste'). An individual row for each waste type, destination and recovery rate then needs to be filled in. (Figure III).

Figure III Intermediate data entry on the Halving Waste to Landfill Reporting Portal

Waste stream	Qty	Unit	Destination	Recovery rate
Inert - mixture of concrete, bricks, tiles etc.	1,500	t	Recycling Centre	100 %
Inert - mixture of concrete, bricks, tiles etc.	500	t	Landfill	0 %
Metals	2,000	t	Recycling Centre	100 %
Wood	2,000	t	Recycling Centre	100 %
Wood	3,000	t	Landfill	0 %
Packaging	1,500	t	Landfill	0 %
Packaging	2,000	t	Recycling Centre	100 %
Inert - Soil & stones	7,500	t	Recycling Centre	100 %

- Use the drop-down menus to select each material type, and then enter the quantity of that material which went to each destination (**Measurements B & D**). Note that with intermediate (and detailed) data entry you can report material types by volume (m³) and the Portal will convert entries to weight (t). You can also add

detail on the disposal destination and the recovery rate for that particular destination³. If the same material goes to more than one destination then you should fill in a separate line for each destination. From the data you enter, the Portal automatically calculates figures for 'Waste received' (i.e. **Measurement A**) and 'Waste landfilled' (i.e. **Measurement C**).

Reporting Measurements
A Total waste received
B Waste recovered – by material type
C Total waste sent to landfill
D Waste sent to landfill – by material type

- For detailed data entry, as with intermediate data entry, you must break down the waste you recovered or sent to landfill by material type (i.e. using **Measurements B & D**) and then by destination. Detailed data entry differs in that the menu of available waste material types from which to choose is much broader and you work with LoW codes. Figure IV shows an example of detailed data entry. Here, the total waste you received (20,000 tonnes following the previous example), recovered (15,000 tonnes) and sent to landfill (5,000 tonnes) is now broken down into both material types and LoW (List of Waste) codes⁴.

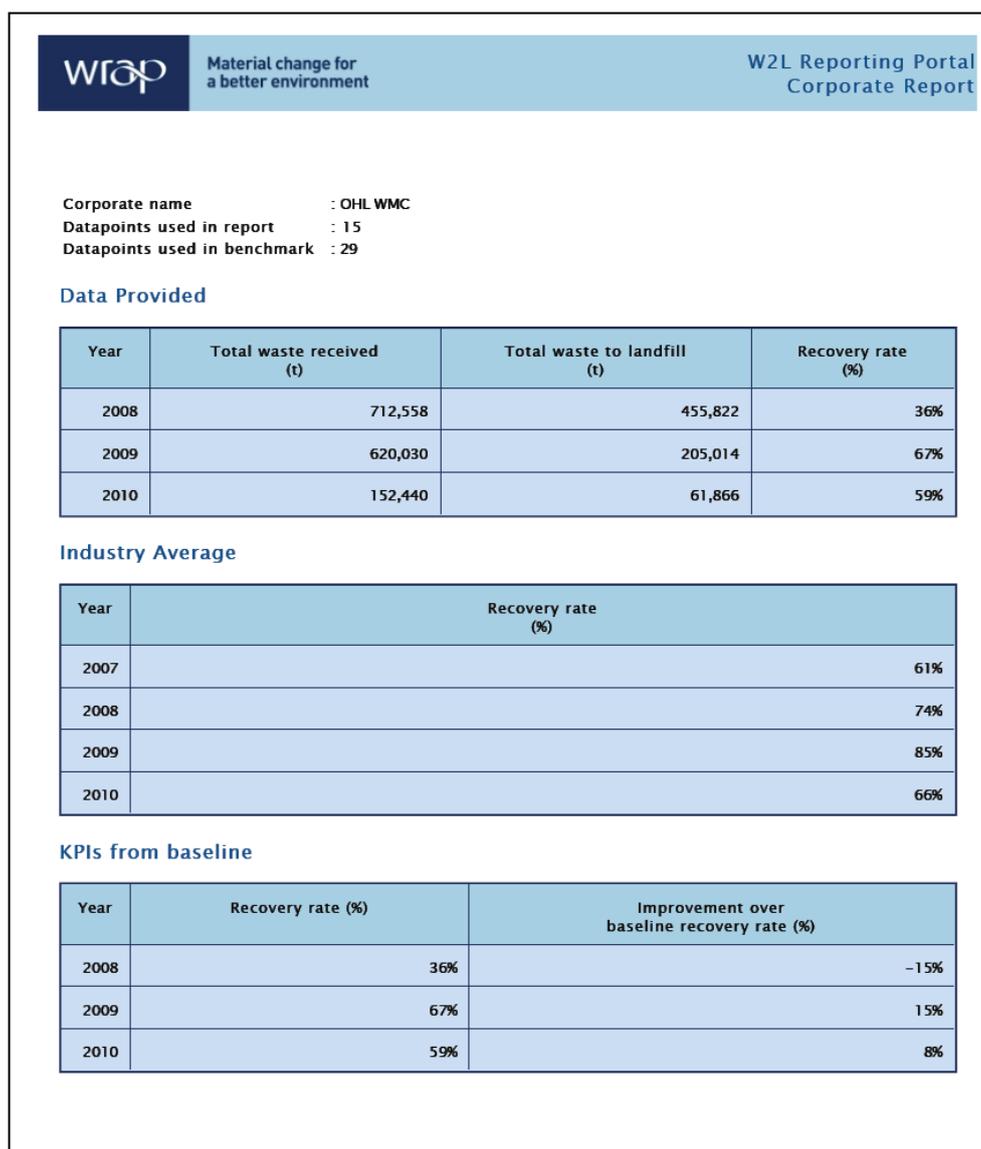
Figure IV Detailed data entry on the Halving Waste to Landfill Reporting Portal

- Once you have input your data (using minimum, intermediate or detailed data entry) click on 'Save & Close'.
- Finally, you must tell the Portal that your data entry for that 12 month period is complete using the 'Specify completed years' option. **This Data Entry record is then sufficient to be presented as the 'Annual Report'** as required by the Commitments.
- Optional: The Portal may be used to generate customised reports for your own use which filter the accumulated data by destination or by material type and which may be used to benchmark your performance with your peer group operators. Figure V shows an example of a customised report for all materials received and recovered by one company.

³ For simplicity, it is recommended that you select 'recycling centre' and '100%' for any material which is recycled, and 'incineration' and '100%' for any material sent to energy from waste facilities. Obviously, any material going to landfill will have a recovery rate of '0%'. You will notice an option for 'Transfer Station or Materials Recovery Facility'. This should NOT be selected as this represents an intermediate stage not a destination.

⁴ Note that LoW codes are the same as EWC codes

Figure V Example of customised report



Further guidance

- Further guidance on registering for, and using, the Portal is available at:
<http://reportingportal.wrap.org.uk/Downloads/User%20GuideWMC.pdf>
<http://www.wrap.org.uk/constructiontutorials>

- Guidance notes for SSWAT are available at:
<http://www.wrap.org.uk/document.rm?id=7594>

- General information on Halving Waste to Landfill is available at:
http://www.wrap.org.uk/construction/halving_waste_to_landfill/

- If you have any further queries on reporting as part of your Halving Waste to Landfill commitment, do not hesitate to contact us:
 - WRAP: The Old Academy, 21 Horse Fair, Banbury, OX16 0AH.
 - Switchboard: 01295 819 900
 - Helpline: 0808 100 2040
 - Email: helpline@wraphelpline.org.uk

Appendix I: List of Waste (European Waste Catalogue - EWC) codes for CDE waste & density factors

EWC Code	Description	Density Factor (tcm)
13	OIL WASTES AND WASTES OF LIQUID FUELS (except edible oils, and those in chapters 05, 12 and 19)	
13 01	waste hydraulic oils	
13 01 10*	mineral-based non-chlorinated hydraulic oils	0.90
13 02	waste engine, gear and lubricating oils	
13 02 04*	mineral-based chlorinated engine, gear and lubricating oils	0.90
13 02 05*	mineral-based non-chlorinated engine, gear and lubricating oils	0.90
13 02 08*	other engine, gear and lubricating oils	0.90
13 08	oil wastes not otherwise specified	
13 08 99*	wastes not otherwise specified	0.19
14	WASTE ORGANIC SOLVENTS, REFRIGERANTS AND PROPELLANTS (except 07 and 08)	
14 06	waste organic solvents, refrigerants and foam/aerosol propellants	
14 06 01*	chlorofluorocarbons, HCFC, HFC	0.00
15	WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED	
15 01	packaging (including separately collected municipal packaging waste)	
15 01 01	paper and cardboard packaging	0.20
15 01 02	plastic packaging	0.22
15 01 03	wooden packaging	0.23
15 01 04	metallic packaging	0.22
15 01 05	composite packaging	0.20
15 01 06	mixed packaging	0.21
15 01 07	glass packaging	0.33
15 01 09	textile packaging	0.18
15 01 10*	packaging containing residues of or contaminated by dangerous substances	0.21
15 01 11*	metallic packaging containing a dangerous solid porous matrix (for example asbestos), including empty pressure containers	0.17
15 02	absorbents, filter materials, wiping cloths and protective clothing	
15 02 02*	absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	0.42
15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	0.07
16	WASTES NOT OTHERWISE SPECIFIED IN THE LIST	
16 01	end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)	
16 01 03	end-of-life tyres	0.47
16 01 07*	oil filters	0.19
16 01 15	antifreeze fluids other than those mentioned in 16 01 14	0.90
16 01 17	ferrous metal	0.30
16 02	wastes from electrical and electronic equipment	
16 02 13*	discarded equipment containing hazardous components (16) other than those mentioned in 16 02 09 to 16 02 12	0.26
16 02 14	discarded equipment other than those mentioned in 16 02 09 to 16 02 13	0.26
16 02 16	components removed from discarded equipment other than those mentioned in 16 02 15	0.30

16 05	gases in pressure containers and discarded chemicals	
16 05 05	gases in pressure containers other than those mentioned in 16 05 04	0.30
16 06	batteries and accumulators	
16 06 01*	lead batteries	1.35
16 07	wastes from transport tank, storage tank and barrel cleaning (except 05 and 13)	
16 07 08*	wastes containing oil	0.19
16 10	aqueous liquid wastes destined for off-site treatment	
16 10 01*	aqueous liquid wastes containing dangerous substances	0.90
17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)	
17 01	concrete, bricks, tiles and ceramics	
17 01 01	concrete	1.27
17 01 02	bricks	1.20
17 01 03	tiles and ceramics	0.59
17 01 06*	mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing dangerous substances	1.17
17 01 07	mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	1.24
17 02	wood, glass and plastic	
17 02 01	wood	0.34
17 02 02	glass	0.61
17 02 03	plastic	0.23
17 02 04*	glass, plastic and wood containing or contaminated with dangerous substances	0.29
17 03	bituminous mixtures, coal tar and tarred products	
17 03 01*	bituminous mixtures containing coal tar	0.90
17 03 02	bituminous mixtures containing other than those mentioned in 17 03 01	0.82
17 03 03*	coal tar and tarred products	1.95
17 04	metals (including their alloys)	
17 04 01	copper, bronze, brass	0.90
17 04 02	aluminium	0.20
17 04 03	lead	0.91
17 04 04	zinc	0.90
17 04 05	iron and steel	0.41
17 04 06	tin	0.90
17 04 07	mixed metals	0.42
17 04 09*	metal waste contaminated with dangerous substances	0.46
17 04 10*	cables containing oil, coal tar and other dangerous substances	0.25
17 04 11	cables other than those mentioned in 17 04 10	0.25
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil	
17 05 03*	soil and stones containing dangerous substances	1.25
17 05 04	soil and stones other than those mentioned in 17 05 03	1.25
17 05 05*	dredging spoil containing dangerous substances	0.51
17 05 06	dredging spoil other than those mentioned 17 05 05	0.51
17 05 07*	track ballast containing dangerous substances	1.09
17 05 08	track ballast other than those mentioned in 17 05 07	1.09
17 06	insulation materials and asbestos-containing construction materials	
17 06 01*	insulation materials containing asbestos	0.28
17 06 03*	other insulation materials consisting of or containing dangerous substances	0.20
17 06 04	insulation materials other than those mentioned in 17 06 01 and 17 06 03	0.25
17 06 05*	construction materials containing asbestos (18)	0.31
17 08	gypsum-based construction material	
17 08 01*	gypsum-based construction materials contaminated with dangerous substances	0.33
17 08 02	gypsum-based construction materials other than those mentioned in 17 08 01	0.33
17 09	other construction and demolition waste	
17 09 01*	construction and demolition wastes containing mercury	0.87

17 09 02*	construction and demolition wastes containing pcb (for example pcb-containing sealants, pcb-containing resin-based floorings, pcb-containing sealed glazing units, pcb-containing capacitors)	0.87
17 09 03*	other construction and demolition wastes (including mixed wastes) containing dangerous substances	0.87
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	0.87
18	WASTES FROM HUMAN OR ANIMAL HEALTH CARE AND/OR RELATED RESEARCH (except kitchen and restaurant wastes not arising from immediate health care)	
18 01	wastes from natal care, diagnosis, treatment or prevention of disease in humans	
18 01 04	wastes whose collection and disposal is not subject to special requirements in order to prevent infection (for example dressings, plaster casts, linen, disposable clothing, diapers)	0.21
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE	
19 13	wastes from soil and groundwater remediation	
19 13 01*	solid wastes from soil remediation containing dangerous substances	1.17
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS	
20 01	separately collected fractions (except 15 01)	
20 01 01	paper and cardboard	0.21
20 01 08	biodegradable kitchen and canteen waste	0.20
20 01 10	clothes	0.20
20 01 11	textiles	0.27
20 01 13*	solvents	0.81
20 01 19*	pesticides	0.90
20 01 21*	fluorescent tubes and other mercury-containing waste	0.19
20 01 23*	discarded equipment containing chlorofluorocarbons	0.30
20 01 26*	oil and fat other than those mentioned in 20 01 25	0.57
20 01 27*	paint, inks, adhesives and resins containing dangerous substances	0.57
20 01 28	paint, inks, adhesives and resins other than those mentioned in 20 01 27	0.57
20 01 30	detergents other than those mentioned in 20 01 29	0.90
20 01 33*	batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries	1.35
20 01 34	batteries and accumulators other than those mentioned in 20 01 33	1.35
20 01 36	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	0.25
20 01 39	plastics	0.23
20 01 40	metals	0.42
20 02	garden and park wastes (including cemetery waste)	
20 02 01	biodegradable waste	0.38
20 03	other municipal wastes	
20 03 01	mixed municipal waste	0.21
20 03 03	street-cleaning residues	0.47
20 03 04	septic tank sludge	0.92
20 03 06	waste from sewage cleaning	0.92
20 03 07	bulky waste	0.18

Note: The density factors shown in this Appendix are those currently used in all WRAP CDE tools. They are based on standard conversion factors used by the Environment Agency. However, further analysis of conversion factors, undertaken by Environment Agency Wales in 'Building the future: A survey on the arising and management of construction and demolition waste in Wales (2005-06)', provided some updated density factors which are used in preference to the EA figures.

Appendix II: Conversion table for typical waste container sizes

Container	Nominal Volume	Volume (cubic metres)
Plastic bag	30 litre	0.03
	60 litre	0.06
Wheeled bin	240 litre	0.24
	360 litre	0.36
	660 litre	0.66
	1,100 litre	1.10
Front end loader	4 cubic yards	3.1
	6 cubic yards	4.6
	8 cubic yards	6.1
	10 cubic yards	7.6
Skip	6 cubic yards	4.6
	8 cubic yards	6.1
	12 cubic yards	9.2
	14 cubic yards	10.7
Rear end loader	6 cubic yards	4.6
	8 cubic yards	6.1
	10 cubic yards	7.6
	12 cubic yards	9.2
	14 cubic yards	10.7
Roll on/off	15 cubic yards	11.5
	20 cubic yards	15.3
	25 cubic yards	19.1
	40 cubic yards	30.6

**Waste & Resources
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