

Environment & Heritage Service

# **Survey of Arisings and Use of Construction, Demolition and Excavation Waste as Aggregate in Northern Ireland in 2004/05 & 2005/06**

Final Report June 2006



**Environment &  
Heritage Service**  
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(S/14404/05/05)**

Final Report to EHS

June 2006

From Capita Symonds Ltd  
In association with WRc plc

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### ANNEX 1: THE SURVEY FORMS

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This report is for the use of EHS, and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

## EXECUTIVE SUMMARY

A survey of arisings and use of construction, demolition and excavation waste (CDEW) was carried out for the Northern Ireland Environment & Heritage Service (EHS) by Capita Symonds Ltd (in association with WRc plc) between February and June 2006. The survey covered the inert fraction of CDEW suitable for recycling or re-use as aggregate or soil, but not other materials such as wood, glass, metals and plastics.

Mailing lists were assembled, and surveys were carried out, covering the full populations of three separate groups, namely:

- 119 owners and potential users of mobile crushers and/or screens (these machines being the main way in which demolition rubble is recycled into aggregate);
- 68 licensed landfills; and
- 88 sites which had been registered with EHS as exempt from waste management licensing to permit the spreading of waste soil, rock and similar inert waste materials.

All three survey populations were stratified into groups with common characteristics which were expected to affect the amount of CDEW that they had managed. This process of stratification was based, as far as possible, on objective criteria. The purpose of the process of stratification was to improve the precision of the subsequent grossing up process. In all three surveys, the average returns from different groups proved to be clearly different, confirming that this approach was worthwhile.

The survey forms asked respondents how much CDEW they had recycled, re-used or disposed of during both 2004/05 and 2005/06. The forms and the questions were very similar to forms previously (and subsequently) used elsewhere in the UK.

The response rate for the highest priority group of potential recyclers was 50.0 %, while the overall rate for potential recyclers was 20.2 %. The overall response rates for landfills and exempt sites were 39.7 % and 33.0 % respectively.

Based on the survey returns, the estimate for arisings of CDEW in Northern Ireland in 2004/05 was 1.8 million tonnes of CDEW, comprising:

- 390,000 tonnes of recycled aggregate and soil recovered by crushing and/or screening ( $\pm 55$  % at a confidence level of 90 %);
- 915,000 tonnes of (mainly) soil used or disposed of in licensed landfills ( $\pm 52$  % at a confidence level of 90 %); and
- 480,000 tonnes of (mainly soil) used on registered exempt sites ( $\pm 22$  % at a confidence level of 90 %).

The equivalent overall estimate for 2005/06 was 1.7 million tonnes, comprising:

- 590,000 tonnes of recycled aggregate and soil recovered by crushing and/or screening ( $\pm 43$  % at a confidence level of 90 %);
- 650,000 tonnes of (mainly) soil used or disposed of in licensed landfills ( $\pm 42$  % at a confidence level of 90 %); and
- 480,000 tonnes of (mainly soil) used on registered exempt sites ( $\pm 22$  % at a confidence level of 90 %).

Evidence of some temporary stockpiling of clean excavation waste suggests that the true figure for arisings in 2005/06 may be higher than the above estimate, which is based on the amounts of such materials reported by respondents to be either used or finally landfilled.

The report includes a recommendation that EHS should look into ways of collecting comparable information in future through the licensing and permitting processes applicable to mobile crushers, landfills and exempt sites, in order to avoid the need for voluntary surveys.

## 1. INTRODUCTION

- 1.1 This is the Final Report from Capita Symonds Ltd, in association with WRc plc, to the Northern Ireland Environment & Heritage Service (EHS). It presents the results of Project S/14404/05/05: the 'Survey of Arisings and Use of Construction, Demolition and Excavations Waste as Aggregate in Northern Ireland in 2004/05 & 2005/06'. The project started in early February 2006 and ended in June. Information was provided at the end of May, as a contribution to EHS' overall report on waste arisings and use.
- 1.2 The survey focused on the inert fraction of construction, demolition and excavation waste (CDEW), and was based on the premise that **arisings of CDEW are estimated by adding together the tonnage of materials that are recovered by crushing and/or screening, the tonnage of CDEW that is used with little or no processing, and the tonnage that is disposed of as waste**. In effect, these are the bottlenecks through which CDEW must pass, irrespective of its point of physical origin.
- 1.3 The project did not attempt to estimate the extent of fly tipping, which is unsuited to conventional survey techniques. Nor did it seek to estimate arisings of other wastes generated on construction and demolition sites, such as wood, glass, metals, plastics, packaging, waste oil etc.
- 1.4 There were three very distinct surveys:
- (i) a survey of all identifiable operators of mobile mechanical crushers and/or screens which are suitable for processing concrete and brick, because these are the people who recycle demolition rubble into recycled aggregate (and some secondary materials into secondary aggregates);
  - (ii) a survey of the operators of all (not just inert) licensed landfills permitted by EHS, because some of the non-inert sites use CDEW (generally without further processing, for daily cover and site engineering), as well as being responsible for disposing of other unrecovered waste; and
  - (iii) a survey of operators of selected sites which have been registered with EHS as exempt from waste management licensing (namely all sites where the description of proposed activities agreed with the applicant included reference to the spreading of waste soil, rock and similar inert waste materials, whether for land reclamation, land improvement or construction).
- 1.5 The Project Specification identified various deliverables. Following discussions between Capita Symonds and EHS these were amended, as follows:
- (i) a digital database of the companies who were surveyed;
  - (ii) a full set of tables summarising all of the data collected through the three surveys together with grossed-up estimates of CDEW arisings and use, and an accompanying commentary, (to be provided as part of the Final Report);
  - (iii) ten copies of the printed Final Report, with an Executive Summary which can either be read as part of the report or on its own, detailing the nature of the research undertaken, the methodology and analysis used, the findings, and with relevant conclusions and recommendations;
  - (iv) electronic versions of the Final Report and Executive Summary in an industry standard print ready format suitable for publishing / downloading via the internet.

## 2. KEY CONCEPTS

2.1 Most of the key concepts and terms used in this report are consistent with those that have been used in reports on the same topic in the rest of the UK over the period 2000-06. The most important are as follows:

- (i) 'construction, demolition and excavation waste' (CDEW) means waste materials which arise from the construction or demolition of buildings and/or civil engineering infrastructure, including hard C&D waste and excavation waste, whether segregated or mixed;
- (ii) 'hard C&D waste' means either segregated or mixed unprocessed / uncrushed materials (particularly concrete, masonry, bricks, tiles, 'blacktop' etc: see Figure 2.1A);
- (iii) 'excavation waste' means naturally occurring soil, stone, rock and similar materials (whether clean or contaminated) which have been excavated as a result of site preparation activities (see Figure 2.1B);
- (iv) 'mixed hard C&D and excavation waste' (mixed CDEW) means a physical mixture of the two previous categories (see Figure 2.1C);
- (v) 'crushing' is a mechanical process of breaking concrete, bricks, blocks, tiles and similar hard materials into a more regular aggregate or similar material with a specified distribution of particle sizes;
- (vi) 'screening' is a general term covering all systems (including hand picking) for sorting, separating and sizing mixed materials, but primarily refers to the use of powered screens or riddles which are not attached to a crusher;
- (vii) 'registered exempt sites' are sites which are notified by the site operator as being exempt from waste management licensing (though not exempt from waste regulation) and where this exemption has been placed on the public register by EHS;
- (viii) 'recycling' involves an active processing of the material concerned (such as crushing or screening in the case of recycled aggregates), as opposed to its simple re-use.

2.2 In this report, and as set out above, the term 'exempt' refers primarily to sites registered by EHS as exempt from waste management licensing. Unless stated to the contrary, it does not refer to materials (and areas within landfill sites) which have been agreed with HM Revenue & Customs to be exempt from Landfill Tax, or to materials which are exempt from the Aggregates Levy.

**Figure 2.1: Different categories of CDEW illustrated**

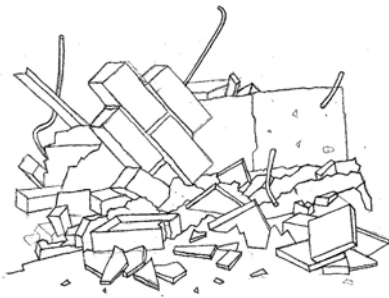


Figure 2.1A: Hard C&D waste

Either segregated or mixed unprocessed/ uncrushed materials (particularly concrete, masonry, bricks, tiles, 'blacktop' etc).



Figure 2.1B: Excavation waste

Naturally occurring soil, stone, rock and similar materials (whether clean or contaminated) which have been excavated as a result of site preparation activities.



Figure 2.1C: Mixed CDEW

A physical mixture of the two categories above.

### 3. PREPARING THE SURVEY POPULATION DATABASES

#### Introduction

- 3.1 One of the most important preparatory activities was the assembly of the survey populations. This started with initial meetings between EHS and Capita Symonds on 8 and 10 February, in which information was provided by EHS covering:
- (i) authorisations to own and operate mobile concrete crushers issued by both EHS and Local Authorities throughout Northern Ireland;
  - (ii) all current and recent operators of licensed landfills in Northern Ireland, and the type of licences that they hold; and
  - (iii) all operators of relevant registered exempt sites.
- 3.2 In addition, various other sources were used in order to add the names and addresses of potential users of rented recycling crushers and screens and fixed equipment authorised through other mechanisms to the list of potential recyclers. These sources included QPA Northern Ireland, the Northern Ireland Demolition Association (NIDA), the on-line database of the Construction Employers Federation of Northern Ireland (CEFNI), the 4NI website, Yellow Pages and the Yell.com website.
- 3.3 This resulted in three separate address lists in spreadsheet format, which have been provided in electronic format to EHS. In these spreadsheets the operator or facility is assigned to a 'home' district and to a 'home' waste management area, using the three established areas of:
- (i) arc21 (further sub-divided into urban and rural components, the arc21 Urban component being made up of Belfast, Carrickfergus, Castlereagh, Lisburn, Newtownabbey and North Down, and the arc21 Rural component being made up of Antrim, Ards, Ballymena, Down and Larne);
  - (ii) North West Region Waste Management Group (NWRWMG) area (comprising the districts of Ballymoney, Coleraine, Derry, Limavady, Magherafelt, Moyle and Strabane); and
  - (iii) the Southern Waste Management Partnership (SWaMP) area (comprising the districts of Armagh, Banbridge, Cookstown, Craigavon, Dungannon & South Tyrone, Fermanagh, Newry & Mourne and Omagh).
- 3.4 Table 3.1 below gives the surface area, population and population density for each of these various areas. As can be seen, the arc21 Urban sub-area is clearly different from the rest of Northern Ireland. Even Lisburn, which is the least densely populated district within arc21 Urban, is almost as densely populated as Derry, and more densely populated than Craigavon (which, in turn, are the most densely populated districts in the NW and SWaMP areas respectively).

**Table 3.1: Population characteristics of the various Waste Management Areas**

<b>WM Area</b>	<b>Sub-Area</b>	<b>Surface Area (km<sup>2</sup>)</b>	<b>Pop'n (2001)</b>	<b>Pop'n Density</b>
arc21	arc21 Urban Sub-total	961	646,550	673
arc21	arc21 Rural Sub-total	2,568	274,880	107
<b>arc21</b>	<b>Total</b>	<b>3,529</b>	<b>921,430</b>	<b>261</b>
NWRWVG	Total	3,792	314,658	83
SWaMP	Total	6,817	449,179	66
<b>NI Total</b>	<b>Total</b>	<b>14,137</b>	<b>1,685,267</b>	<b>119</b>

- 3.5 In all three cases the approach was to survey the full population, not to select a representative sample. There were two reasons for this:
- (i) firstly, selecting a representative sample requires a better knowledge of the three populations than was available to the survey team at the preparatory stage; and
  - (ii) secondly, the response rate was expected to be between 30 % and 50 %, and the precision of the final estimate is affected by the number and variability of the responses received, making a whole population approach clearly preferable.

### **Population of Potential Recyclers**

- 3.6 Companies that were considered to be potential recyclers included all holders of authorisations to operate mobile crushers, and all companies and individuals who might, on the balance of probability, hire a crusher or screen from time to time to recover useful materials from demolition waste. For each potential recycler the database provided to EHS records the company's contact details and 'home' district. It then shows whether the company concerned was thought in advance of the survey to be involved in a range of activities, including:
- (i) demolition;
  - (ii) plant hire; and
  - (iii) both skip hire and the sale of hardcore.
- 3.7 It also records the number of authorised / exempt mobile crushers owned by the company and their reference numbers. Although the number of mobile crushers authorised in Northern Ireland has risen appreciably over the past 2-3 years, some of these are known to be used exclusively in quarries for processing primary aggregate. Using this (and other) information all of the companies on the list were allocated to one of three groups, as follows:
- (i) Group 1: companies for which positive evidence of involvement in recycling had previously been obtained (including, for example, the placing of advertisements in directories such as 'Yellow Pages' in which recycled aggregate or hardcore is offered for sale);
  - (ii) Group 2: companies which do not meet the criteria for Group 1 but which hold an authorisation for a mobile crusher (unless clear evidence was already held that the crusher concerned was used exclusively to process primary aggregate) or where there is some circumstantial evidence of involvement in recycling (including, for example, less explicit advertising than would be the case for Group 1 companies); and

- (iii) Group 3: other companies with involvement in related activities such as quarrying, landfill management, demolition, skip hire, site clearance or major contracting who were thought to be worth surveying 'just in case'.

3.8 When the survey forms were mailed out, on 21 March, there were 109 companies on the survey database, broken down between the above groups as shown in Table 3.2.

**Table 3.2: Characteristics of the companies on the mailing list of potential recyclers**

<i>Group</i>	<i>arc21 Urban</i>	<i>arc21 Rural</i>	<i>NWR WMG</i>	<i>SWaMP</i>	<i>Total</i>
Group 1	8	0	4	6	18
Group 2	8	8	7	15	38
Group 3	14	17	9	13	53
<b><i>All potent'l recyclers</i></b>	<b>30</b>	<b>25</b>	<b>20</b>	<b>34</b>	<b>109</b>

### **Population of Licensed Landfill Operators**

3.9 There were 75 licensed landfills on the actual mailing list as used, but information about site closures subsequently received from EHS as a result of the programme of site visits carried out by their own personnel meant that there would have been 68 if that information had been available at the time of mailing. The following discussion and subsequent references to the survey of landfill operators uses the best available information, and treats the 'true' population of landfills as 68 rather than 75.

3.10 For each site, the database records the site name and licence number and 'home' district. Based on a range of evidence, all of the landfills were classified according to:

- (i) the type(s) of waste that they are permitted to accept; and
- (ii) their probable size (small, medium, large or very large).

3.11 The 68 landfills can be broken down as shown in Table 3.3. Landfills described as inert are only permitted to accept inert materials; other landfills can accept various types of non-inert waste but may use inert waste for engineering or similar purposes.

**Table 3.3: Characteristics of the landfills on the survey database**

<i>Landfill size / type</i>	<i>arc21 Urban</i>	<i>arc21 Rural</i>	<i>NWR WMG</i>	<i>SWaMP</i>	<i>Total</i>
Medium inert	10*	2	2	9	23
Small inert	1	2	0	1	4
Unknown size inert	4	2	0	3	9
<b>Total inert</b>	<b>15</b>	<b>6</b>	<b>2</b>	<b>13</b>	<b>36</b>
Very large other	1	0	0	0	1
Large other	3	2	3	5	13
Medium other	6	2	4	2	14
Small other	0	0	1	0	1
Unknown size other	0	1	0	2	3
<b>Total other</b>	<b>10</b>	<b>5</b>	<b>8</b>	<b>9</b>	<b>32</b>
<b>All landfills</b>	<b>25</b>	<b>11</b>	<b>10</b>	<b>22</b>	<b>68</b>

Note: (\*) Includes one site that was not yet operational, but which might have been using CDEW in site works.

### Population of 'Exempt Sites'

- 3.12 There were 88 'exempt sites' on the final mailing list. For each such site the database records the location, the exemption number and the 'home' district of the site, as well as contact details for the exemption holder and a description of the activity to be carried out on the site. Similar descriptions (provided by the applicants) were grouped together under more generic headings, as recorded in Table 3.4. Little or no waste materials would be expected to be spread on the sites in the final category (storage or processing of waste materials).

**Table 3.4: Characteristics of the exempt sites on the survey database**

<i>Proposed activity</i>	<i>arc21 Urban</i>	<i>arc21 Rural</i>	<i>NW</i>	<i>SWaMP</i>	<i>Total</i>
Construction of a golf course	2	0	0	0	2
Infilling, raising land or spreading of soil	8	9	11	24	52
Site preparation, construction or similar	4	4	0	4	12
Drainage improvement works	0	2	0	0	2
Unspecified re-use of materials	0	0	0	1	1
Storage or processing of waste materials	1	2	7	9	19
<b>Total</b>	<b>15</b>	<b>17</b>	<b>18</b>	<b>38</b>	<b>88</b>

#### **4. DRAFTING THE SURVEY FORMS**

- 4.1 Drafts of the three survey forms were discussed with EHS on 13 March, and some relatively minor amendments were made arising from that discussion. The survey forms as issued are reproduced in Annex 1. Electronic versions of the survey forms were also made available in Excel format, but only two respondents requested and used that version of the form.
- 4.2 As can be seen, the forms included the logos of the Construction Employers Federation, the Northern Ireland Demolition Association and the Quarry Products Association to signify their general support for the project, as well as those of EHS and the Department of the Environment.
- 4.3 When the forms were originally sent out on 21 March there were no separate covering letters or explanatory notes enclosed, the principle being that all of the information that recipients required could be found on a single piece of paper, and could not therefore be separated and lost. When follow-up forms were sent out on 24 April a covering letter was provided to explain that the closing date had been extended to 17 May, and stressing that every additional return received would improve the precision of the final estimates.

## 5. ANALYSIS OF THE SURVEY RETURNS

### Survey of Crusher Operators

- 5.1 By 24 April 14 forms had been submitted with useful information and a further two had been returned because the addressee was unknown or had gone away. Chaser letters with follow-up survey forms were then sent out to 37 companies who had not responded, but who fell into one of the priority categories for follow-up<sup>1</sup>.
- 5.2 By the end of the first week in June the number of returns with useful information had risen to 22, with a much higher response rate for Group 1 companies (50.0 %) than for the other groups. The response rates for the other groups were 18.4 % for Group 2 and 11.3 % for Group 3, and 20.2 % overall. The numbers concerned are given in Table 5.1.

**Table 5.1: Responses received from recycling operators (and survey population)**

<i>Group</i>	<i>arc21 Urban</i>	<i>arc21 Rural</i>	<i>NWR WMG</i>	<i>SWaMP</i>	<i>Total</i>
Group 1	4 (8)	0 (0)	3 (4)	2 (6)	9 (18)
Group 2	1 (8)	1 (8)	0 (7)	5 (15)	7 (38)
Group 3	1 (14)	3 (17)	0 (9)	2 (13)	6 (53)
<b>All potent'l recyclers</b>	<b>6 (30)</b>	<b>4 (25)</b>	<b>3 (20)</b>	<b>9 (34)</b>	<b>22 (109)</b>

- 5.3 The key results derived from these responses are summarised in Table 5.2 below. The relatively small amounts of materials reported as being recycled in the Republic of Ireland by operators based in Northern Ireland have been excluded from Table 5.2.
- 5.4 The estimates in Table 5.2 were derived as follows. For each of the three groups individually, a series of average values were calculated using all useful returns (i.e. using zero values for operators who reported that they were not involved in recycling in 2004/05 or 2005/06). These values were then grossed up by multiplying the calculated averages by the total number of operators in the relevant group, and then adding together the three resultant group estimates to give a total value for Northern Ireland.
- 5.5 Because the survey response rates were well below 100 % the central estimates in Table 5.2 come with accompanying bands. These are expressed at a confidence interval of 90 %, which means (using the actual figures in the final column in Table 5.2 as an example) that there is a nine-in-ten chance that the true total tonnage of recycled aggregate and soil in 2005/06 lies within the range 588,713 tonnes  $\pm$  43 %, provided that the underlying assumptions (about the size of the population of recycling operators, for example) are sound.
- 5.6 In all of the tables in this Chapter the totals may appear not to add up precisely. This is because all of the figures are rounded, and a rounded total may differ slightly from the arithmetical total of the various rounded components.

<sup>1</sup> The two priority groups for follow-up purposes were (1) companies thought to own a recycling crusher, and (2) landfill operators. However, companies that fell into these categories were sent follow-up forms relating to all of their activities, so some possible recyclers who were thought to hire in rather than own a crusher were sent follow-up forms if they also operated landfills, and those companies in both priority groups that also held registered exemptions were sent follow-up forms for that activity as well. The net effect of this was that follow-up forms were sent to 30 operators thought to own a recycling crusher, 7 operators thought to hire in crushers from time to time, operators of 58 landfills, and operators of 13 registered exempt sites.

**Table 5.2: Key results for aggregate and soil recycling (tonnes)**

<i>Material</i>	<i>2004/05</i>	<i>2005/06</i>
Graded recycled aggregate	117,235	188,867
Ungraded recycled aggregate	253,569	380,167
<b>Sub-total, recycled aggregate</b>	<b>370,804</b>	<b>569,034</b>
Recovered topsoil	15,829	17,029
Recovered soil (other than topsoil)	1,767	2,650
<b>Total: all recycled CDEW</b>	<b>388,400 ± 55 %</b>	<b>588,713 ± 43 %</b>

## Survey of Landfill Operators

- 5.7 By 24 April 14 forms had been submitted with useful information and a further three had been returned because the addressee was unknown or had gone away. Chaser letters were sent out on 24 April with follow-up survey forms covering all landfills from which no response had been received.
- 5.8 By the end of the first week in June 27 useful replies had been received, including two from operators declaring that their sites were not landfills, one declaring that the landfill concerned had closed prior to 1 April 2004 and five confirming that their sites had remained inactive throughout 2004/05 and 2005/06. The 27 useful replies were distributed as shown in Table 5.3.

**Table 5.3: Responses received from landfill operators (and survey population)**

<i>Landfill size / type</i>	<i>arc21 Urban</i>	<i>arc21 Rural</i>	<i>NWR WMG</i>	<i>SWaMP</i>	<i>Total</i>
Medium inert	4 (10)	0 (2)	1 (2)	2 (9)	7 (23)
Small inert	0 (1)	1 (2)	0 (0)	0 (1)	1 (4)
Unknown size inert	1 (4)	1 (2)	0 (0)	1 (3)	3 (9)
<b>Total inert</b>	<b>5 (15)</b>	<b>2 (6)</b>	<b>1 (2)</b>	<b>3 (13)</b>	<b>11 (36)</b>
Very large other	1 (1)	0 (0)	0 (0)	0 (0)	1 (1)
Large other	1 (3)	1 (2)	2 (3)	5 (5)	9 (13)
Medium other	3 (6)	0 (2)	2 (4)	0 (2)	5 (14)
Small other	0 (0)	0 (0)	0 (1)	0 (0)	0 (1)
Unknown size other	0 (0)	0 (1)	0 (0)	1 (2)	1 (3)
<b>Total other</b>	<b>5 (10)</b>	<b>1 (5)</b>	<b>4 (8)</b>	<b>6 (9)</b>	<b>16 (32)</b>
<b>All landfills</b>	<b>10 (25)</b>	<b>3 (11)</b>	<b>5 (10)</b>	<b>9 (22)</b>	<b>27 (68)</b>

- 5.9 As can be seen, the overall survey response rate was 39.7 % (27 out of 68), and was higher for non-inert landfills (for which it was 50.0 % overall) than for inert landfills (for which it was 30.6 %). The response rate for individual categories of landfills varied from nil (for small non-inert landfills) to 100 % (for very large non-inert landfills), though it must be noted that both of these categories only comprised a single landfill.
- 5.10 It is not prudent to gross up using very small groups unless the response rate for the group is very high, so some lines in the table were combined, resulting in five groups of landfills:

- (i) 23 medium inert landfills (for which the response rate was 30.4 %);
- (ii) 13 other inert landfills (for which the response rate was 30.8 %);
- (iii) one very large non-inert landfill (for which the response rate was 100.0 %)
- (iv) 13 large non-inert landfills (for which the response rate was 69.2 %); and
- (v) 18 other non-inert landfills (for which the response rate was 33.3 %).

5.11 The approach to grossing up was the same as for the operators of recycling crushers and screens (see paragraph 5.4 for a description).

5.12 The key results are summarised for each of the two survey periods in Tables 5.4 and 5.5 below.

**Table 5.4: Results for CDEW entering landfills, 2004/05 (tonnes)**

<b>Material</b>	<b>Used in landfill engineering (roads, bunding, drainage, daily cover etc)</b>	<b>Used in capping and restoration</b>	<b>Disposed of as waste</b>	<b>Total</b>
Clean hard C&D waste	226,904	-	-	226,904
Contaminated hard C&D waste	-	-	1,083	1,083
Clean excavation waste	23,905	241,374	23,423	288,702
Contaminated excavation waste	-	-	524	524
Clean 'mixed' CDEW	-	-	395,992	395,992
Contaminated 'mixed' CDEW	-	-	-	-
Other inert CDEW (or category unknown)	-	-	1,141	1,141
<b>Total CDEW</b>	<b>250,809</b>	<b>241,374</b>	<b>422,163</b>	<b>914,347 ± 52 %</b>

**Table 5.5: Results for CDEW entering landfills, 2005/06 (tonnes)**

<b>Material</b>	<b>Used in landfill engineering (roads, bunding, drainage, daily cover etc)</b>	<b>Used in capping and restoration</b>	<b>Disposed of as waste</b>	<b>Total</b>
Clean hard C&D waste	106,483	-	79,543	186,026
Contaminated hard C&D waste	-	-	-	-
Clean excavation waste	35,460	197,643	72,575	305,679
Contaminated excavation waste	-	-	-	-
Clean 'mixed' CDEW	5,812	-	148,603	154,416
Contaminated 'mixed' CDEW	-	-	-	-
Other inert CDEW (or category unknown)	-	-	920	920
<b>Total CDEW</b>	<b>147,756</b>	<b>197,643</b>	<b>301,642</b>	<b>647,041 ± 42 %</b>

- 5.13 The bands applicable to the total tonnages shown in the final rows of Tables 5.4 and 5.5 are, as before, at a confidence interval of 90 %.
- 5.14 These results suggest that the total tonnage of CDEW entering landfills fell from about 915,000 tonnes in 2004/05 to about 645,000 tonnes in 2005/06. This fall is substantially explained by the return for one medium inert landfill (which has been double checked and confirmed with the operator) which accepted 82,600 tonnes of clean 'mixed' CDEW as waste for disposal in 2004/05, but in 2005/06 landfilled no CDEW at that site, having installed a 'picking line' to enable recyclable materials (including wood as well as 'hard' CDEW suitable for crushing) to be separated and recovered. This reduction in landfilling activity fits well with the steep increase in recycling reported by operators of crushers and screens.
- 5.15 The operator of another large landfill in the arc21 Urban area also reported that although he had not used or disposed of any CDEW in 2005/06, he had nevertheless imported a very substantial tonnage of clean clays and other soils which is being stored temporarily before being used for site capping and restoration. If a comparable survey is run in one or two years' time, this material would be expected to be reported as being 'used' at that time, and has not been counted on this occasion in order to avoid double counting. However, its existence does suggest that the true rate of arisings of excavation waste (as opposed to its use) is actually higher than the grossed-up survey results would suggest.
- 5.16 The survey of landfill operators also asked about the use of aggregate materials in landfill engineering. The results suggest that operators needed to purchase over a quarter of a million tonnes of primary aggregate in both 2004/05 and 2005/06, and that they used 45,000 tonnes of recycled aggregate in 2004/05 and 17,500 tonnes in 2005/06 (which would form part of the estimated tonnage generated by the survey of operators of recycling crushers and screens).

- 5.17 Operators were also asked about their remaining void space. Fourteen operators (out of 19 respondents with landfills that were open) provided estimates. These returns totalled 6.1 million cubic metres at the end of 2004/05 and 5.1 million cubic metres a year later. There is no satisfactory reason to believe that the grossing up method used for estimating CDEW tonnages would work for void space, because it is not affected by the landfill type. The actual void space reported was distributed between the three regions<sup>2</sup> as follows:
- (i) 2.8 million cubic metres void space at the end of 2004/05, and 2.2 million cubic metres at the end of 2005/06, at four landfills in the arc21 area;
  - (ii) 1.3 million cubic metres void space at the end of 2004/05, and 1.1 million cubic metres at the end of 2005/06, at five landfills in the NWRWMG area; and
  - (iii) 2.0 million cubic metres void space at the end of 2004/05, and 1.8 million cubic metres at the end of 2005/06, at five landfills in the SWaMP area.
- 5.18 Most of this reported void space (3.9 million cubic metres at the end of 2004/05 and 3.1 million cubic metres a year later) was in eight landfills which accept municipal solid waste.

### Survey of Registered Exempt Site Operators

- 5.19 By 24 April 25 forms had been submitted with useful information and a further two had been returned because the addressee was unknown or had gone away. When chaser letters were sent out on 24 April with follow-up survey forms for priority groups of recyclers and landfill operators, 13 'exempt site' forms were sent (for a fuller explanation of the process, see the footnote linked to paragraph 5.1). This follow-up generated useful responses covering four further sites, making 29 in total, which represents an overall survey response rate of 33.0 %.
- 5.20 The 29 sites were divided as shown in Table 5.6 below. A comparison of Tables 5.6 and 3.4 will show that the main group of sites (i.e. those described as being ones on which waste materials were thought likely to have been spread) comprised those involving infilling, land raising, construction, drainage and unspecified re-use. Based on experience of other comparable surveys elsewhere, it was anticipated that these sites would receive significantly less inert waste, on average, than the two sites linked to the construction of golf courses.

**Table 5.6: Responses received from operators of registered exempt sites (and survey population)**

<b>Groups</b>	<b>arc21 Urban</b>	<b>arc21 Rural</b>	<b>NW</b>	<b>SWaMP</b>	<b>Total</b>
Major sites (golf course construction)	2 (2)	0 (0)	0 (0)	0 (0)	2 (2)
Sites on which waste materials are thought likely to have been spread	3 (12)	1 (15)	4 (11)	10 (29)	18 (67)
Sites primarily geared to the storage or processing of waste materials	0 (1)	2 (2)	2 (7)	5 (9)	9 (19)
<b>Total</b>	<b>5 (15)</b>	<b>3 (17)</b>	<b>6 (18)</b>	<b>15 (38)</b>	<b>29 (88)</b>

<sup>2</sup> There was only one return from a landfill in arc21 Rural, which has therefore been combined with the returns from arc21 Urban operators to maintain the confidentiality promised to respondents.

- 5.21 The returns showed clearly that the differences between the three groups of sites were real, and treating them as distinct for the purposes of grossing up (using the same approach as for the operators of recycling crushers and landfills) generates the estimates set out in Table 5.7. As can be seen, almost all of the material reported in Table 5.7 comprises clean soil and 'mixed' CDEW.

**Table 5.7: Results for CDEW spread on registered exempt sites in 2004/05 and 2005/06 (tonnes)**

<i>Material</i>	<i>2004/05</i>	<i>2005/06</i>
Hard C&D waste spread on registered exempt sites	0	6,404
Clean unmixed excavation waste spread on registered exempt sites	95,333	379,111
Mixed CDEW spread on registered exempt sites	3,350	53,952
Other soils spread on registered exempt sites	23,822	40,140
<b>Total</b>	<b>122,505</b> <b>± 52 %</b>	<b>479,608</b> <b>± 22 %</b>

- 5.22 Typically clean 'hard' C&D waste is used in the preparation of areas of hard standing and site infrastructure, while both clean excavation waste and mixed CDEW are used to raise land levels and to create landscaping and other relatively simple features. The category of 'other soils' is likely to include some top soil, which might not necessarily be considered to be waste. Many registered exempt sites are active for a short period. For some small sites this may only be a few days, but more typically it is a few weeks.
- 5.23 The steep rise from 2004/05 to 2005/06 suggested by the results in Table 5.7 is not very credible. It seems likely that many of the sites that had been active in 2004/05 had been removed from the list of authorised sites before it was passed to the project team by EHS, because the sites were known to have completed the work involved by then. It would therefore be prudent to assume that the true level of exempt site activity in 2004/05 was much closer to the level estimated for 2005/06, namely 479,608 tonnes.

## 6. DISCUSSION OF OVERALL RESULTS

- 6.1 The estimates set out in Chapter 5 suggest that the overall (rounded) level of arisings of CDEW in Northern Ireland in 2004/05 was 1.8 million tonnes of CDEW, comprising:
- (i) 390,000 tonnes of recycled aggregate and soil recovered by crushing and/or screening ( $\pm 55\%$  at a confidence level of 90 %);
  - (ii) 915,000 tonnes of (mainly) soil used or disposed of in licensed landfills ( $\pm 52\%$  at a confidence level of 90 %); and
  - (iii) 480,000 tonnes of (mainly soil) used on registered exempt sites ( $\pm 22\%$  at a confidence level of 90 %).
- 6.2 The equivalent overall estimate for 2005/06 is 1.7 million tonnes, comprising:
- (i) 590,000 tonnes of recycled aggregate and soil recovered by crushing and/or screening ( $\pm 43\%$  at a confidence level of 90 %);
  - (ii) 650,000 tonnes of (mainly) soil used or disposed of in licensed landfills ( $\pm 42\%$  at a confidence level of 90 %); and
  - (iii) 480,000 tonnes of (mainly soil) used on registered exempt sites ( $\pm 22\%$  at a confidence level of 90 %).
- 6.3 More detailed estimates derived from the surveys are presented in four summary tables below. Table 6.1 brings all of the materials and their uses (or disposal) into a single table, in which two columns indicate whether the material concerned is categorised (in Tables 6.2 to 6.4) as 'hard' C&D waste (H), soil and excavation waste (S) or mixed CDEW (M), and whether it is considered to be recovered / recycled (R), used without processing (U) or disposed of as waste (D).
- 6.4 Tables 6.2 to 6.4 summarise for each of three broad materials categories whether they were recovered / recycled, used without the need for further processing, or disposed of as waste at a licensed landfill. The letter codes used in Table 6.1 are intended to make it relatively simple to confirm the origins of each estimate in Tables 6.2 to 6.4. For example, the total for soil and excavation waste used without processing is the sum of all lines coded as both 'S' and 'U'.
- 6.5 In all four tables the totals may not add up precisely because all of the figures are rounded, and a rounded total may differ slightly from the arithmetical total of the various rounded components.
- 6.6 The estimates related to registered exempt sites reported in Table 6.1 are based on the data as actually reported, whereas it is acknowledged (in paragraph 5.23) that the estimates for 2004/05 are unrealistically low, and that any policies or planning should be based on the assumption that the true figure was much closer to the estimate for 2005/06. The data for 2004/05 are therefore presented twice, with the actual reported data used in Table 6.2, and the 2005/06 data for registered exempt sites used in Table 6.3.

**Table 6.1: Overview of CDEW Survey results**

<i><b>Material, and use to which it is put</b></i>	<i><b>Mat'l code</b></i>	<i><b>Use code</b></i>	<i><b>2004/05</b></i>	<i><b>2005/06</b></i>
Hard C&D/excavation waste crushed and/or screened for use as aggregate	H	R	370,804	569,034
Excavation waste/mixed CDEW screened for use as soil (including some topsoil)	S	R	17,596	19,679
<b><i>Sub-total 1: Recycled aggregate and soil</i></b>			<b>388,400</b>	<b>588,713</b>
Hard C&D waste used for landfill engineering or restoration	H	U	226,904	106,483
Excavation waste used for landfill engineering or restoration	S	U	265,279	233,103
Mixed CDEW (or unspecified material) used for landfill engineering or restoration	M	U	0	5,812
<b><i>Sub-total 2: Material used for landfill engineering or restoration</i></b>			<b>492,183</b>	<b>345,399</b>
Hard C&D waste spread on registered exempt sites	H	U	0 <sup>(*)</sup>	6,404
Clean unmixed excavation waste and other soils spread on registered exempt sites	S	U	119,155 <sup>(*)</sup>	419,251
Mixed CDEW spread on registered exempt sites	M	U	3,350 <sup>(*)</sup>	53,952
<b><i>Sub-total 3: Material used at registered exempt sites</i></b>			<b>122,505<sup>(*)</sup></b>	<b>479,608</b>
Clean unmixed hard C&D waste disposed of at landfills	H	D	0	79,543
Mixed and/or contaminated hard C&D waste disposed of at landfills	H	D	1,083	0
Clean excavation waste disposed of at landfills	S	D	23,423	72,575
Mixed and/or contaminated excavation waste disposed of at landfills	S	D	524	0
Mixed CDEW and unspecified materials disposed of at landfills	M	D	397,133	149,523
<b><i>Sub-total 4: Material disposed of as waste at licensed landfills</i></b>			<b>422,163</b>	<b>301,642</b>
<b><i>Total</i></b>			<b>1,425,251<sup>(*)</sup></b>	<b>1,715,362</b>

Note: (\*) See the comments in the accompanying text about these specific values.

**Table 6.2: Types of CDEW and their management, 2004/05 (using actual survey results)**

<i>Material</i>	<i>Recovered / recycled</i>	<i>Used without processing</i>	<i>Disposed of as waste</i>	<i>Total</i>
'Hard' C&D waste	370,804	226,904	1,083	598,791
Soil and excavation waste	17,596	384,434	23,947	425,977
Mixed CDEW	0	3,350	397,133	400,483
<b>Total</b>	<b>388,400</b>	<b>614,688</b>	<b>422,163</b>	<b>1,425,251</b>

**Table 6.3: Types of CDEW and their management, 2004/05 (using higher estimates for materials used on registered exempt sites, taken from the 2005/06 survey)**

<i>Material</i>	<i>Recovered / recycled</i>	<i>Used without processing</i>	<i>Disposed of as waste</i>	<i>Total</i>
'Hard' C&D waste	370,804	233,308	1,083	605,195
Soil and excavation waste	17,596	684,530	23,947	726,073
Mixed CDEW	0	53,952	397,133	451,085
<b>Total</b>	<b>388,400</b>	<b>971,790</b>	<b>422,163</b>	<b>1,782,353</b>

**Table 6.4: Types of CDEW and their management, 2005/06**

<i>Material</i>	<i>Recovered / recycled</i>	<i>Used without processing</i>	<i>Disposed of as waste</i>	<i>Total</i>
'Hard' C&D waste	569,034	112,887	79,543	761,465
Soil and excavation waste	19,679	652,354	72,575	744,609
Mixed CDEW	0	59,764	149,523	209,288
<b>Total</b>	<b>588,713</b>	<b>825,005</b>	<b>301,642</b>	<b>1,715,362</b>

- 6.7 For the reasons given in paragraph 5.15 above, it is considered to be very likely that the true level of arisings of clean excavation waste in 2005/06 was actually higher than the totals given above would suggest.
- 6.8 Data from elsewhere in the UK suggest a likely level of CDEW arisings of 1.8 tonnes per head of population, which would also suggest that the true level of arisings in Northern Ireland may be appreciably higher than suggested by these estimates; possibly as high as 2.5 to 3.0 million tonnes.
- 6.9 A slightly surprising feature of the results is the amount of hard C&D waste which is disposed of as waste in landfills, particularly given the fact that landfills as a group continue to purchase and use primary aggregate for engineering purposes. Elsewhere in the UK landfill engineering has traditionally provided an important outlet for both processed and unprocessed hard C&D

waste. Respondents provided a range of comments in response to the question on changes in the market for recycled aggregate. These included:

- (i) it is hard to get a site for recycling;
- (ii) the market has been hampered by difficulties caused by the current legislation;
- (iii) Government commitment to recycling (including Government purchasing policy) does not seem strong;
- (iv) too much material is still being dumped;
- (v) there is a lack of enforcement as regards illegal tipping and spurious land improvement schemes;
- (vi) the absence of an agreed material specification for recycled aggregate has made it difficult to sell recycled materials.

## **7. RECOMMENDATIONS FOR FUTURE DATA COLLECTION**

- 7.1 Given that the data collected were at least in part required to satisfy EU waste reporting obligations, and that these obligations will recur, there is a strong case to be made for collecting comparable data in future through mechanisms other than voluntary surveys.
- 7.2 Voluntary surveys inevitably generate response rates which are well below 100 %, and they impose a burden on industry which is arguably greater than the burden required to provide the same information at the same time as statutorily required returns are made.
- 7.3 To this end, it is recommended that EHS should look into the possibility of using three administrative mechanisms to collect the necessary data, namely:
- (i) the waste management licensing process as it applies to mobile crushers;
  - (ii) the process by which landfill operators provide periodic returns on the materials which they have accepted at their sites; and
  - (iii) the process by which exemptions to waste management licensing are registered.

Annex 1:

## **The Survey Forms**

Q5	By how much do you think the <b>market</b> for recycled aggregate has <b>grown</b> over the past three years (i.e. since 2002/03)? (This question refers to your views on the <b>overall market</b> , not your company's activity)
(Please give your best estimate in % terms)	

Q6	This question is only applicable to respondents who own / manage one or more mobile crushers. Please give your answers for one crusher here, and the equivalent information for your other machines beside or below.	
A	Make of crusher	
B	Model number of crusher	
C	Manufacturer's rated capacity of crusher (tonnes / hour)	

Thank you for your cooperation. It would be very helpful if you would give your name, so that if we have any need to follow up on any of your answers, we know who to speak to.	
Name:	
Telephone number:	

The **FreePost** address to which this form should be returned is at the bottom of this page.

If there are any additional comments that you wish to make, please add them here.
---

Capita Symonds (NI CDEW)  
**FREEPOST**  
 ND6717  
 24 Holborn  
**LONDON**  
 EC1B 1DQ

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## Construction, Demolition and Excavation Waste Survey

### Confidential Survey of Crushing & Screening Activity in Northern Ireland in 2004/05 and 2005/06

«Contact»  
 «Position»  
 «Company»  
 «Postal\_Address1»  
 «Postal\_Address2»  
 «Postal\_Town»  
 «Postal\_County»  
 «Postcode»

*(If your contact details or address as given to the left are wrong, please correct them by hand before returning the form. Thank you)*

April 2006

This survey is being carried out by Capita Symonds Ltd for the Environment & Heritage Service of DoE(NI). Copies of this form have been sent to a carefully selected group of companies including all of the leading demolition contractors in Northern Ireland, selected waste management companies and everybody (including quarry operators) who has an authorised mobile crusher which is suitable for processing demolition waste into recycled aggregate. Other survey forms are being sent to operators of landfills and of some sites registered as exempt from waste management licensing.

**We will treat any information that you give us as confidential, and will not provide it to EHS (or anyone else) in a format that would enable them to link you to the information that you provide.**

The information will be used to generate better estimates of the arisings of construction, demolition and excavation waste (CDEW) in Northern Ireland, and the uses to which it is put. These estimates will be used to influence and monitor policy and strategy on the management of CDEW at a Province-wide and more local level.

We would be very grateful if you would use this form to give details of **all materials that you crush and/or screen** using equipment that you own and/or operate, **even if you process no construction, demolition or excavation waste at present**. If you would prefer to complete the form electronically, please send an Email to [david.knapman@capita.co.uk](mailto:david.knapman@capita.co.uk), but please make sure that your company is clearly identifiable from your Email address, or in the text of your message.

Please pass this form to the most appropriate person within your company, asking them to complete it and return it to Capita Symonds at their FreePost address (which is given on the back page of this form) **before Easter (i.e. by Friday 14 April 2006)**.

If you need any help in completing this form, or if you would like extra copies of this (or the other) survey forms, please ring 01342 327161 and ask for the 'Northern Ireland Survey Help Desk'.

**Thank you in advance for your cooperation.**

The aims behind this survey have been endorsed by all of the business organisations whose logos appear below.





## Construction, Demolition and Excavation Waste Survey

### Confidential Survey of Licensed Landfills in Northern Ireland in 2004/05 and 2005/06

«Contact»  
«Position»  
«Company»  
«Postal\_Address1»  
«Postal\_Address2»  
«Postal\_Town»  
«Postal\_County»  
«Postcode»

*(If your contact details or address as given to the left are wrong, please correct them by hand before returning the form. Thank you)*

April 2006

Table Q5:	Tonnes of aggregate (if any) that entered the landfill in <b>2004/05</b> , and what happened to them		
	Used in landfill engineering (roads, bunding, drainage, daily cover etc)	Used in capping and restoration	Disposed of as waste
Primary aggregate (purchased)			
Primary aggregate (dug on site)			
Waste from aggregate quarrying / processing			
Other waste-derived aggregate (e.g. slags etc)			
Crushed C&D waste			

Table Q6:	Tonnes of aggregate (if any) that entered the landfill in <b>2005/06</b> , and what happened to them		
	Used in landfill engineering (roads, bunding, drainage, daily cover etc)	Used in capping and restoration	Disposed of as waste
Primary aggregate (purchased)			
Primary aggregate (dug on site)			
Waste from aggregate quarrying / processing			
Other waste-derived aggregate (e.g. slags etc)			
Crushed C&D waste			

Q7	It would be appreciated if information on <b>landfill capacity</b> could be supplied, as it is essential to inform waste management planning. As with all of your other answers to this survey, whatever information you provide will only be reported to EHS as part of a regional estimate which cannot be traced back to your landfill	
	2004/05	2005/06
How much void space (in m <sup>3</sup> ) was there within the currently licensed landfill facility at the end of each of the two years covered by this survey?		

This survey is being carried out by Capita Symonds Ltd for the Environment & Heritage Service of DoE(NI). Everyone to whom one of these survey forms has been sent is believed to be the operator of a licensed landfill which was either accepting waste for disposal, being capped and closed, or being constructed over the two-year period ending on 31 March 2006. Other survey forms are being sent to operators of recycling crushers / screens and of some sites registered as exempt from waste management licensing, to monitor other activity related to construction, demolition and excavation waste (CDEW).

We have sent this form to you in connection with:

«Site_Names»	«WML_2006» «Licence_type»
--------------	---------------------------

**We will treat any information that you give us as confidential, and will not provide it to EHS (or anyone else) in a format that would enable them to link you to the information that you provide.**

The information will be used to generate better estimates of the arisings of CDEW in Northern Ireland, and the uses to which it is put. These estimates will be used to influence and monitor policy and strategy on the management of CDEW at a Province-wide and more local level.

We would be very grateful if you would use this form to give details of **all materials that entered the disposal area of your landfill**. If you would prefer to complete the form electronically, please send an Email to [david.knapman@capita.co.uk](mailto:david.knapman@capita.co.uk), but please make sure that your company is clearly identifiable from your Email address, or in the text of your message.

Please pass this form to the most appropriate person within your company, asking them to complete it and return it to Capita Symonds at their FreePost address (which is given on the back page of this form) **before Easter (i.e. by Friday 14 April 2006)**.

If you need any help in completing this form, or if you would like extra copies of this (or the other) survey forms, please ring 01342 327161 and ask for the 'Northern Ireland Survey Help Desk'.

**Thank you in advance for your cooperation.**

The aims behind this survey have been endorsed by all of the business organisations whose logos appear below.

Capita Symonds (NI CDEW)  
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ND6717  
24 Holborn  
**LONDON**  
EC1B 1DQ

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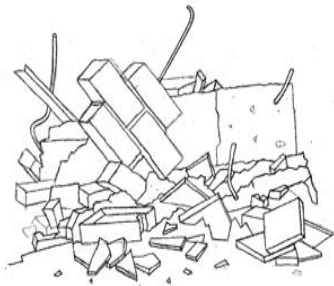


**CEF**



Please note that **2004/05** means the 12-month period ending on 31 March 2005, and **2005/06** means the 12-month period ending on 31 March 2006.

The following illustrations are provided to clarify what is meant by some of the key terms used in this form:



Hard C&D Waste



Excavation Waste



'Mixed' CDEW

Q1	Which of the following statements applied to your landfill in <b>2004/05</b> and <b>2005/06</b> ? (Please tick <b>all</b> boxes that applied)		
		<b>2004/05</b>	<b>2005/06</b>
A	It was <b>open</b> to accept waste(s)		
B	It was <b>accepting engineering or restoration materials</b>		
C	Any CDEW that came in was brought in under an <b>exemption</b> from waste management licensing (NB This does <u>not</u> refer to Landfill Tax)		
D	It was <b>inactive</b>	(*)	(*)
E	It was <b>closed to all materials</b> prior to the start of the year	(*)	(*)
(*)	If you have <b>only</b> ticked boxes marked (*), please ignore Question 2 and the tables, but please return the form to the FreePost address given on the back page. Otherwise please answer Questions 2 and 7 and complete Tables Q3-Q6.		

Q2	Is/was the landfill a former quarry which is/was being backfilled with materials which are/were <b>exempt from landfill tax</b> ? (Please tick relevant box)	Yes	
		No	

Now please complete Tables Q3 to Q6.

Tables Q3 and Q4 cover CDEW which entered the landfill area. Tables Q5 and Q6 (on the back page) cover any aggregate which entered the landfill area.

When completing Tables Q3 and Q4, please note the following:

- You should **not record** any materials that you recycled/reclaimed and then **sent off-site**.
- There should be **no overlap** between the cells in any of the Tables: any materials which went into the landfill for any purpose should only be recorded once (this also applies to Tables Q5 and Q6).
- '**Contaminated**' means **mixed with hazardous** materials such as asbestos, oils, chemicals etc
- The total tonnage of CDEW will be the **total of all cells**.

Table Q3:	<b>Tonnages of unprocessed construction, demolition and excavation waste that entered the landfill in <b>2004/05</b>, and what happened to them</b>		
	Used in landfill engineering (roads, bunding, drainage, daily cover etc)	Used in capping and restoration	Disposed of as waste
	Clean hard C&D waste		
	Contaminated hard C&D waste		
	Clean excavation waste		
	Contaminated excavation waste		
	Clean 'mixed' CDEW		
	Contaminated 'mixed' CDEW		
	Other inert CDEW (or category unknown)		(#)
( # ) This should not include consignments containing significant amounts of timber, metals, plasterboard etc.			

Table Q4:	<b>Tonnages of unprocessed construction, demolition and excavation waste that entered the landfill in <b>2005/06</b>, and what happened to them</b>		
	Used in landfill engineering (roads, bunding, drainage, daily cover etc)	Used in capping and restoration	Disposed of as waste
	Clean hard C&D waste		
	Contaminated hard C&D waste		
	Clean excavation waste		
	Contaminated excavation waste		
	Clean 'mixed' CDEW		
	Contaminated 'mixed' CDEW		
	Other CDEW (or category unknown)		(#)
( # ) This should not include consignments containing significant amounts of timber, metals, plasterboard etc.			

# Construction, Demolition and Excavation Waste Survey

## Confidential Survey of Materials Spread on Registered Exempt Sites in Northern Ireland in 2004/05 and 2005/06

Capita Symonds (NI CDEW)  
**FREEPOST**  
ND6717  
24 Holborn  
**LONDON**  
EC1B 1DQ

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«Contact»  
«Company»  
«Postal\_Address1»  
«Postal\_Address2»  
«Postal\_Town»  
«Postal\_County»  
«Postcode»

*(If your contact details or address as given to the left are wrong, please correct them by hand before returning the form. Thank you)*

April 2006

This survey is being carried out by Capita Symonds Ltd for the Environment & Heritage Service of DoE(NI). This form has been sent to you because you are understood to be (or have been) the operator of a site which is/was registered as exempt from waste management licensing. Further information on registered exempt sites is given on the next page of this survey form. Other survey forms are being sent to operators of recycling crushers / screens and licensed landfills, to monitor other activity related to construction, demolition and excavation waste (CDEW).

We have sent this form to you in connection with:

«File_ref»	«Activity» «Location»
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**We will treat any information that you give us as confidential, and will not provide it to EHS (or anyone else) in a format that would enable them to link you to the information that you provide.**

The information will be used to generate better estimates of the arisings of CDEW in Northern Ireland, and the uses to which it is put. These estimates will be used to influence and monitor policy and strategy on the management of CDEW at a Province-wide and more local level.

We would be very grateful if you would use this form to give details of **all materials that were spread on the exempt site(s) named above**. If you would prefer to complete the form electronically, please send an Email to [david.knapman@capita.co.uk](mailto:david.knapman@capita.co.uk), but please make sure that your company is clearly identifiable from your Email address, or in the text of your message.

Please pass this form to the most appropriate person within your company, asking them to complete it and return it to Capita Symonds at their FreePost address (which is given on the back page of this form) **before Easter (i.e. by Friday 14 April 2006)**.

If you need any help in completing this form, or if you would like extra copies of this (or the other) survey forms, please ring 01342 327161 and ask for the 'Northern Ireland Survey Help Desk'.

**Thank you in advance for your cooperation.**

The aims behind this survey have been endorsed by all of the business organisations whose logos appear below.



**CEF**



Please note that **2004/05** means the 12-month period ending on 31 March 2005, and **2005/06** means the 12-month period ending on 31 March 2006.

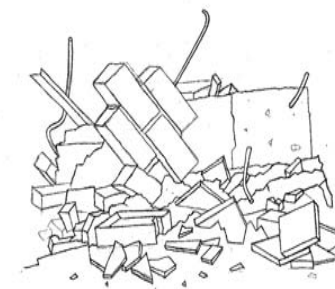
**What is a 'Registered Exempt' Site?**

Sites where inert materials such as clean soils and other uncontaminated construction, demolition and excavation waste (CDEW) are allowed to be used as part of the construction process, to raise ground levels or to improve the conditions for ecology or agriculture (e.g by improving the site's drainage) are known as 'registered exempt sites'. They are exempt from licensing (i.e. they are not licensed landfills), but they remain subject to the wider obligations associated with waste management. This is why they are registered with EHS.

Registration involves the completion of a form and the payment of a fee (to EHS). Normally the work is of a type and scale that it is completed in quite a short period of time. Where the activity extends over more than 12 months, the exemption has to be renewed, with a further fee becoming due.

The full details of the conditions applicable to all exemptions are given in the Waste Management Licensing Regulations (Northern Ireland) 2003 (Statutory Rule 2003 No.493).

The following illustrations are provided to clarify what is meant by some of the key terms used below:



Hard C&D Waste



Excavation Waste



'Mixed' CDEW

Q1	<b>Are (or were) any of the following statements true in your case?</b> (Please tick <b>all</b> boxes that applied)	
A	Our site is/was <b>only used for temporary storage and/or processing</b> of materials	(*)
B	Inert materials were spread on our site during <b>2004/05</b>	
C	Inert materials were spread on our site during <b>2005/06</b>	
D	Our site <b>did</b> accept inert waste, but all work was <b>finished</b> prior to 1 April 2004	(*)
E	Our site <b>will</b> in future accept inert waste, but <b>not until</b> after 1 April 2006	(*)
F	Our exemption covers activities <b>other than storage or spreading</b> of inert materials	(*)
G	I am <b>not aware</b> of the registered exempt site identified on the front of this survey form	(*)
(*)	If you have <b>only</b> ticked boxes marked (*), please ignore Table 2, but please return the form to the FreePost address given on the back page. Otherwise please complete Table 2.	

Table Q2:	Please complete the table below to show the <b>tonnages</b> of inert wastes that were spread on the 'registered exempt site(s)' identified on the front of this survey form during <b>2004/05</b> and <b>2005/06</b>	
	<b>2004/05</b>	<b>2005/06</b>
<b>Total tonnages</b>		
<b>Broken down</b> as follows (either as tonnes, or as % of the total given above):		
Uncrushed <b>hard C&amp;D waste</b> (see illustration, above left)		
Clean <b>excavation waste</b> (see illustration, above centre)		
<b>'Mixed' CDEW</b> (see illustration, above right)		
Road <b>planings</b> not significantly mixed with other materials		
Processed or crushed <b>recycled or secondary aggregate</b> (#)		
<b>Ash, slag or clinker</b>		
<b>Dredged materials</b>		
<b>Other soil materials</b> (e.g. from cleaning vegetables)		
All / <b>any other materials</b>		
(#) Please <b>omit</b> any tonnages of <b>primary aggregate</b> , and include only non-traditional aggregates derived from 'hard' C&D waste, road surfacing, ash, slag etc		



*Our aim is to protect and conserve the natural and built environment and to promote its appreciation for the benefit of present and future generations.*

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