

Calculation of BMW in waste to landfill – examples

Regina Campbell, EPA
EPA Waste Workshop, Athlone 2009

Transfer station - factors

BMW in Household waste

BMW in untreated/1 bin = 0.645 (64.5%)

BMW in residual/black bin from 2 bin system = 0.62 (62%)

BMW in residual/black bin from 3 bin system = 0.47 (47%)

BMW in Commercial waste

BMW in untreated/1 bin = 0.772 (77.2%)

BMW in residual bin from 2 bin system = 0.752 (75.2%)

BMW in street cleaning waste = 0.645 (64.5%)

(from EPA waste surveys)

1. Greenfield Transfer Station

Took in **50,000 tonnes** MSW in 2008

Household 1 bin = 30,000t MSW x 0.645 = 19,350t BMW

Household 2 bin = 15,000t MSW x 0.62 = 9,300t BMW

Commercial 2 bin = 5,000t MSW x 0.752 = 3,760t BMW

Total BMW in MSW to landfill = 19,350 + 9,300 + 3,760 = **32,410t**

% BMW in MSW to landfill = (32,410/50,000) x 100 = **65%**

2. Newtown Transfer Station

Took in **100,000 tonnes** MSW in 2008

Household 2 bin = 45,000t MSW

Household 3 bin = 35,000t MSW

Street Cleaning = 20,000t MSW

What was the % BMW in the MSW sent to landfill in 2008?

2. Newtown Transfer Station

Took in **100,000 tonnes** MSW in 2008

$$\text{Household 2 bin} = 45,000\text{t MSW} \times \underline{0.62} = \underline{27,900}\text{t BMW}$$

$$\text{Household 3 bin} = 35,000\text{t MSW} \times \underline{0.47} = \underline{16,450}\text{t BMW}$$

$$\text{Street Cleaning} = 20,000\text{t MSW} \times \underline{0.645} = \underline{12,900}\text{t BMW}$$

$$\text{Total BMW to landfill} = \underline{27,900} + \underline{16,450} + \underline{12,900} = \underline{57,250}\text{t BMW}$$

$$\% \text{BMW in waste to landfill} = (\underline{57,250} / \underline{100,000}) \times 100 = \underline{57.25}\%$$

3. Westgrange (MRF)

Took in **42,000tonnes** of waste in 2007

20,000 t of recyclables - to off-site processing facilities

15,000 t of residual MSW - to Ballyvale landfill – waste composition surveys

- 48% BMW

- 52% non-BMW

4,000 t of organic fines – off-site bio-treatment plant

3,000 tonnes of C&D – to Ballyvale landfill

What was the % BMW in MSW sent to landfill in 2007?

What tonnage of BMW was sent to landfill in 2007?

3. Westgrange (MRF)

Total BMW sent to landfill in 2007 =

$$\underline{15,000} \times \underline{0.48} = \underline{7200} \text{ tonnes BMW}$$

% BMW in MSW to landfill = 48% BMW

3. Westgrange (MBT)

Took in **42,000 tonnes** of waste in 2008

20,000 t of recyclables - to off-site processing facilities

15,000 t of residual MSW - to Ballyvale landfill

- 48% BMW

- 52% non-BMW

4,000 t of organic fines – treated in **on-site** bio-treatment plant - tested and $AT_4 = 8.5\text{mg O}_2/\text{g DM}$ – sent to landfill

3,000 tonnes of C&D – to Ballyvale landfill

What was the % BMW in MSW sent to landfill in 2008?

3. Westgrange (MBT)

% BMW in MSW to landfill in 2008:

$$\frac{(\mathbf{15,000 \times 0.48}) + (\mathbf{4000 \times 0})}{\mathbf{19,000}} \times 100 = \mathbf{37.89 \%BMW}$$

4. Ballyvale Landfill

In 2008, Ballyvale Landfill accepted MSW from Greenfield TS, Newtown TS and Westgrange Ltd.

What was the % BMW in MSW accepted by the landfill in 2008?

4. Ballyvale Landfill

Greenfield TS – accepted 50,000 t MSW of which 32,410 tonnes was BMW (65% BMW)

Newtown TS – accepted 100,000 t MSW of which 57,250 t was BMW (57.25% BMW)

Westgrange Ltd. – accepted 19,000 t MSW of which 7,200 t was BMW (37.89% BMW)

Total MSW accepted was 169,000t of which 96,860 t was BMW

% BMW in MSW accepted was $96,860/169,000 \times 100 = 57.31\%$

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