

## Calculation of Maximum Storage & Process Capacities at Miltown Composting

Details of the storage of waste accepted onto the Miltown site and the maximum quantity of waste stored at the installation at any one time was calculated based on potential for volume storage and the bulk densities of the materials stored. Details of the waste storage areas at the Miltown Composting facility are outlined on Table A below.

**Table A – Storage Capacity at Miltown Composting**

Area Ref.	Floor Area	Max Stockpile Height (m)	Volume (m <sup>3</sup> )	Estimated Tonnage
<b>Reception Area</b>				
Reception Area	281 m <sup>2</sup>	3.0	843 m <sup>3</sup>	632
Wood Chip Storage	80 m <sup>2</sup>	3.0	240 m <sup>3</sup>	48
<b>Primary Processing Area - Composting</b>				
Process Tunnel A	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	168.75
Process Tunnel B	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	168.75
Process Tunnel C	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	168.75
Process Tunnel D	150 m <sup>2</sup>	3.0	450 m <sup>3</sup>	337.5
Process Tunnel E	150 m <sup>2</sup>	3.0	450 m <sup>3</sup>	337.5
Process Tunnel F	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	168.75
Process Tunnel G	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	168.75
Process Tunnel H (new process bay)	111 m <sup>2</sup>	3.0	333 m <sup>3</sup>	249.75
Process Tunnel I (old mixing bay)	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	168.75
<b>Compost Storage Area</b>				
Finished Compost storage North Shed 4	112.5	4.0	450 m <sup>3</sup>	315
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Oversize Plastics Storage	100 m <sup>2</sup>	3.0	300 m <sup>3</sup>	60
Overs Storage Area at Screener	30m <sup>2</sup>	1.5	45 m <sup>3</sup>	9
<b>Barrier Area 1&amp;2</b>				
Process Tunnel 1	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
Process Tunnel 2	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
Process Tunnel 3	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
Process Tunnel 4	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
Process Tunnel 5	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
Process Tunnel 6	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
Process Tunnel 7	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
Process Tunnel 8	75 m <sup>2</sup>	3.0	225 m <sup>3</sup>	157.5
<b>Compost Maturation Area</b>				
Shed 2 – Windrow 1	351 m <sup>2</sup>	2.0	702 m <sup>3</sup>	491.4
Shed 2 - Windrow 2	310 m <sup>2</sup>	2.0	620 m <sup>3</sup>	434
Shed 2 - Windrow 3	310 m <sup>2</sup>	2.0	620 m <sup>3</sup>	434
Shed 2 – Windrow 4	351 m <sup>2</sup>	2.0	702 m <sup>3</sup>	491.4
Shed 3 – Static pile 1	389 m <sup>2</sup>	4.0	1,556 m <sup>3</sup>	1,089.2
Shed 3 – Static pile 2	361 m <sup>2</sup>	4.0	1,444 m <sup>3</sup>	1,010.8
Shed 3 – Static pile 3	242 m <sup>2</sup>	4.0	968 m <sup>3</sup>	677.6
South side Shed 4 – Static pile	495 m <sup>2</sup>	3.0	1,485 m <sup>3</sup>	1,039.5

Based on the main waste storage areas at the facility the storage capacity at Miltown Composting for particular waste materials is:

## PRIMARY PROCESSING AREA

### Waste Reception Shed

- **Waste Acceptance** –Organic material received at the facility is tipped in the covered waste reception building located east of Shed 1 prior to being blended with wood chip or process overs and then transferred to the composting tunnels. Based on the floor area of the waste acceptance area the maximum volume of waste that could be stored in this area is 843 m<sup>3</sup>.
- **Wood Chip** – wood chips which are used for blending, there is a storage capacity of 240 m<sup>3</sup> in the area.

### PRIMARY PROCESS AREA

- **Compost Tunnels** – contains 9 processing tunnels (including the new process bay in the reception shed 111 m<sup>2</sup> and the old mixing bay 75 m<sup>2</sup>) consisting of a combined floor area of 861m<sup>2</sup>. The material taken from the waste acceptance area can be loaded into these bays to a maximum height of 3m, which have a combined storage capacity of 2,583 m<sup>3</sup>.

### SECONDARY PROCESS AREA

- **Barrier Area** - The secondary processing area contains 8 processing tunnels consisting of a combined floor area of 600m<sup>2</sup>. Compost Tunnels in the secondary process tunnels can be loaded to a maximum height of 3.0m, the maximum volume in these containers would be 1,800m<sup>3</sup>.

### COMPOST MATURATION / STORAGE

- **Compost Maturation** - Once the material has completed the compost process secondary tunnels it is transferred to the south side of Shed 4, Shed 2 and Shed 3 for maturation. The combined storage capacity in these sheds is estimated to hold a maximum of 8,097 m<sup>3</sup> of finished material.
- **Final Compost Storage** – Although this material is classified as a product and not a waste material, for completeness the storage area for finished compost was calculated, with 3 separate compost heaps each holding 450 m<sup>3</sup>
- **Screened Oversize Plastics** – Screened plastics are stored on the floor of Shed 3, in an open area separated from other materials by approximately 2m. There is the possibility for a capacity of 300m<sup>3</sup> storage capacity.
- **Screened Overs** – Screened overs are stored in a concrete bunker which is separated from other material by approximately 3 metres. The facility has a maximum storage capacity of 45m<sup>3</sup>. There is not a requirement for large volumes of overs to be stored as they are reused as a bulking agent and are re-introduced to the composting process at the beginning to encourage aeration by creating air pockets.

The calculation for the total maximum tonnage that could be stored at the Miltown facility at any one time is outlined in Tables B and C.

**Table B: Maximum Tonnage Stored on Site For Process Materials**

PROCESS MATERIALS			
	Volume (m <sup>3</sup> )	Bulk Density Factor (t/m <sup>3</sup> )	Tonnage
Reception Area	843	0.75	632
Primary Process area	2583	0.75	1,937
Secondary Process area	1800	0.7	1,260
Maturation area	8097	0.7	5,668
Final Compost Storage	1350	0.7	945

**Table C: Maximum Tonnage Stored on Site For Non-Process Materials**

NON-PROCESS MATERIALS			
	Volume (m <sup>3</sup> )	Bulk Density Factor (t/m <sup>3</sup> )	Tonnage
Wood Chip	240	0.2	48
Screened Overs under screen	45	0.2	9
Screened Oversize Plastics in shed 3	300	0.2	60

Based on the bulk densities of the materials stored and the calculated volumes of material that could be stored, the total maximum tonnage that could be stored on the Miltown Composting site at any one time is estimated to be 10,559 tonnes.

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