

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. Miltown have completed construction of a number of new bays in Maturation Sheds 3 and 4 in 2022. Details of the waste storage areas at the Miltown Composting facility are outlined on Table A below.

Table A – Existing Storage Capacity at Miltown Composting

Area Ref.	Floor Area	Max Stockpile Height (m)	Volume (m ³)	Estimated Tonnage
Reception Area				
Reception Area	281 m ²	3.0	843 m ³	632
Wood Chip Storage	80 m ²	3.0	240 m ³	48
Primary Processing Area - Composting				
Process Tunnel A	75 m ²	3.0	225 m ³	168.75
Process Tunnel B	75 m ²	3.0	225 m ³	168.75
Process Tunnel C	75 m ²	3.0	225 m ³	168.75
Process Tunnel D	150 m ²	3.0	450 m ³	337.5
Process Tunnel E	150 m ²	3.0	450 m ³	337.5
Process Tunnel F	75 m ²	3.0	225 m ³	168.75
Process Tunnel G	75 m ²	3.0	225 m ³	168.75
Process Tunnel H	111 m ²	3.0	333 m ³	249.75
Process Tunnel I (old mixing bay)	75 m ²	3.0	225 m ³	168.75
Compost Storage Area				
Finished Compost storage North Shed 4	112.5	4.0	450 m ³	315
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Oversize Plastics Storage	100 m ²	3.0	300 m ³	60
Overs Storage Area at Screener	30m ²	1.5	45 m ³	9
Barrier Area 1&2				
Process Tunnel 1	75 m ²	3.0	225 m ³	157.5
Process Tunnel 2	75 m ²	3.0	225 m ³	157.5
Process Tunnel 3	75 m ²	3.0	225 m ³	157.5
Process Tunnel 4	75 m ²	3.0	225 m ³	157.5
Process Tunnel 5	75 m ²	3.0	225 m ³	157.5
Process Tunnel 6	75 m ²	3.0	225 m ³	157.5
Process Tunnel 7	75 m ²	3.0	225 m ³	157.5
Process Tunnel 8	75 m ²	3.0	225 m ³	157.5
Existing Compost Maturation Area				
Shed 2 – Static Pile Bay 1	351 m ²	3.0	1,053 m ³	491.4
Shed 2 - Static Pile Bay 2	310 m ²	3.0	930 m ³	434
Shed 2 - Static Pile Bay 3	310 m ²	3.0	930 m ³	434
Shed 2 – Static Pile Bay 4	351 m ²	3.0	1,053 m ³	491.4
Shed 3 – Static Pile Bay A	220 m ²	3.0	660 m ³	462
Shed 3 – Static Pile Bay B	150 m ²	3.0	450 m ³	315
Shed 3 – Static Pile Bay C	200 m ²	3.0	600 m ³	420
Shed 3 – Static Pile Bay D	400 m ²	3.0	1,200 m ³	840
Shed 4 – Static Pile Bay E	121m ²	3.0	363 m ³	254
Shed 4 – Static Pile Bay F	121 m ²	3.0	363 m ³	254
Shed 4 – Static Pile Bay G	110 m ²	3.0	330 m ³	231

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 m³.
- **Wood Chip** – wood chips which are used for blending, there is a storage capacity of 240 m³ in the area.

PRIMARY PROCESS AREA

- **Compost Tunnels** – contains 9 processing tunnels (including the process bay in the reception shed 111 m² and the old mixing bay 75 m²) consisting of a combined floor area of 861m². 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 m³.

SECONDARY PROCESS AREA

- **Barrier Area** - The secondary processing area contains 8 processing tunnels consisting of a combined floor area of 600m². 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 1,800m³.

COMPOST MATURATION / STORAGE

- **Compost Maturation** - Once the material has completed the compost process secondary tunnels it is transferred to the new maturation bays at 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 7,932 m³ 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 m³
- **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 300m³ 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 45m³. 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 current 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 Existing Process Materials

PROCESS MATERIALS			
	Volume (m ³)	Bulk Density Factor (t/m ³)	Tonnage
Reception Area	8,43	0.75	632
Primary Process area	2,583	0.75	1,937
Secondary Process area	1,800	0.7	1,260
Maturation area	7,932	0.7	5,552
Final Compost Storage	1,350	0.7	945

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

NON-PROCESS MATERIALS			
	Volume (m ³)	Bulk Density Factor (t/m ³)	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 at the existing facility layout, the total maximum tonnage that could be stored on the Miltown Composting site at any one time as part of the existing facility is estimated to be 10,327 tonnes. This has slightly reduced due to the construction of the additional maturation bays in sheds 3 and 4 and loss of some floor space.

Proposed Extension of Maturation Facility (Sheds 2B & 3B)

The proposed licence review would include the reconstruction of old agricultural sheds 2B and 3B as maturation sheds this would provide additional maturation and storage capacity on the site as outlined in Table D.

Table D: Maximum Tonnage Stored at Proposed New Maturation Sheds

Compost Maturation Area				
	Floor Area	Material height	Volume	Tonnage
Shed 2B – Bay 1	332 m ²	3.0	996 m ³	697
Shed 2B - Bay 2	332 m ²	3.0	996 m ³	697
Shed 2B - Bay 3	324 m ²	3.0	972 m ³	680
Shed 2B – Bay 4	324 m ²	3.0	972 m ³	680
Shed 2B – Bay 5	320 m ²	3.0	960 m ³	672
Shed 3B – Static pile 1	390 m ²	3.0	1,170 m ³	819
Shed 3B – Static pile 2	370 m ²	3.0	1,110 m ³	777

The calculation for the proposed maximum tonnage that could be stored at the Miltown facility at any one time if the new maturation sheds are reconstructed is outlined in Tables E and F.

Table E: Proposed Maximum Tonnage Stored on Site For Proposed Development

PROCESS MATERIALS			
	Volume (m³)	Bulk Density Factor (t/m³)	Tonnage
Reception Area	8,43	0.75	632
Primary Process area	2,583	0.75	1,937
Secondary Process area	1,800	0.7	1,260
Existing Maturation Area	7,932	0.7	5,552
Proposed New Maturation Area	7,166	0.7	5,016
Final Compost Storage	1,350	0.7	945

Table F: Proposed Maximum Tonnage Stored on Site For Non-Process Materials

NON-PROCESS MATERIALS			
	Volume (m³)	Bulk Density Factor (t/m³)	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 at the existing and proposed facility layout, the total potential maximum tonnage that could be stored on the Miltown Composting site at any one time as part of the proposed facility is estimated to be 15,459 tonnes.

The proposed maximum capacity to be accepted at the facility as part of the licence review would be 240 tonnes per day which would result in a maximum weekly input of 1,440 tonnes and an annual maximum of 74,880 tonnes. It is not expected that the absolute maximum tonnage would be processed at the facility due to market fluctuations restricting material deliveries and also potential process restrictions (e.g., batches potentially requiring longer process times). Therefore, to allow for flexibility it is calculated that the facility could process up to a maximum of 75,000 based on the existing process infrastructure.