APPENDIX B – FERTILISER PROCESS MANAGEMENT PLAN

Mort & Co

Management Plan

Status	Current	Location	GR

Fertiliser Process Management Plan

Related Policy	**QMPL0006** Quality
Relevant Departments	Fertilisers
Purpose & Responsibilities	

Introduction

Mort and Co Fertilisers Pty Ltd is a privately-owned business, supplying conditioned manure, humic compost and granulated compost products to the Australian and other markets. The aim of the composting and granulation operation is to produce a range of stable composts and granules that;

- improve soil condition and biological activity;
- provide a slow release of nutrients and trace elements;
- improve water penetration and water holding capacity and potentially;
- increase crop yields; and
- can be spread using conventional spreaders or an airseeder.

Mort and Co Fertilisers is strongly committed to food safety and quality and have implemented a HACCP based Quality system covering the receival of raw manure, composting, granulation and despatch of humic compost and granulated compost to ensure this commitment is met.

Purpose

This procedure is to detail the organic handling plan for the composting of manure from the Grassdale feedlot which includes granulating compost, packaging and despatch processes.

Responsibility

Production Manager

The Production Manager, together with the other members of the Quality Team, have the responsibility of managing the system on a day-to-day basis to ensure its continuing effectiveness. This includes;

- the monitoring of all food-safety and quality processes and the implementation of effective corrective and preventative action when required;
- maintaining effective communication with all internal and external stakeholders including customers, suppliers, government authorities and any other organisation which may be affected by the effectiveness of the Quality and Safety System or the updating of it;
- ensuring all staff are adequately trained for the tasks they undertake, compliance with all quality & safety objectives; and
- the continuous improvement of the system.

Quality Manager

It is the responsibility of the Quality Manager to:

- ensure that this document is current and updated when required;
- undertake onsite testing of final products;
- inform the certified body when there are any major changes; and
- ensure that all relevant staff are aware of their responsibilities.

Compositing Pad Operators

It is the responsibility of the Composting Pad Operators to:

- record the temperatures as per **FEPR0016** SWP - Windrow Management;

Loader Operators

It is the responsibility of the Loader Operators to:

- inspect their trucks prior to loading to ensure that there is no contamination.

Definitions and Abbreviations

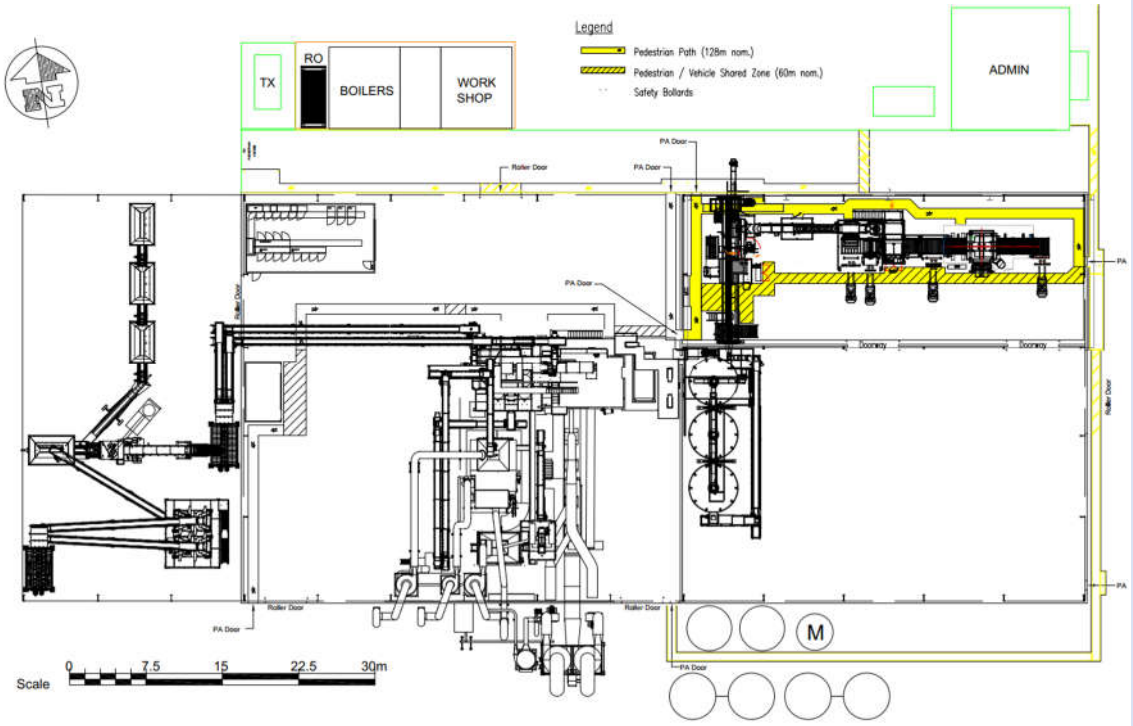
ACO	Australian Certified Organic
Deads	Dead Cattle
RO	Reverse Osmosis

Procedure Steps

The Mort and Co Fertilisers compost and fertiliser plant is located at the Mort and Co Lot Feeders Grassdale site at 95 Grassdale road, Grassdale, Queensland.

Compost pad layout

Factory Layout



Composting process

The feedlot pens are cleaned out by the Pen cleaning team of the Grassdale feedlot.

Manure is delivered to the location on the composting pad as designated by the Fertiliser Supervisor.

The manure is formed into windrows. Care is taken to ensure that the windrow areas are even in height and straight so that they can be accessed easily for water additions and turning.

Moisture is added to the windrows with the use of a water tanker. The desired moisture range for effective composting is 45-55%. In hotter summer months, water is added more frequently to ensure that the compost does not dry out.

Once the windrow is formed water is added within the first three days. The water is a mixture of bore water and RO water. Any moisture added after the first three days is recorded.

The feedlot conducts water quality tests and results are available for review.

To ensure that that our growers have confidence in the quality and safety of our products, we have set our composting programme to comply with AS 4454-2012 and ACO standards, namely;

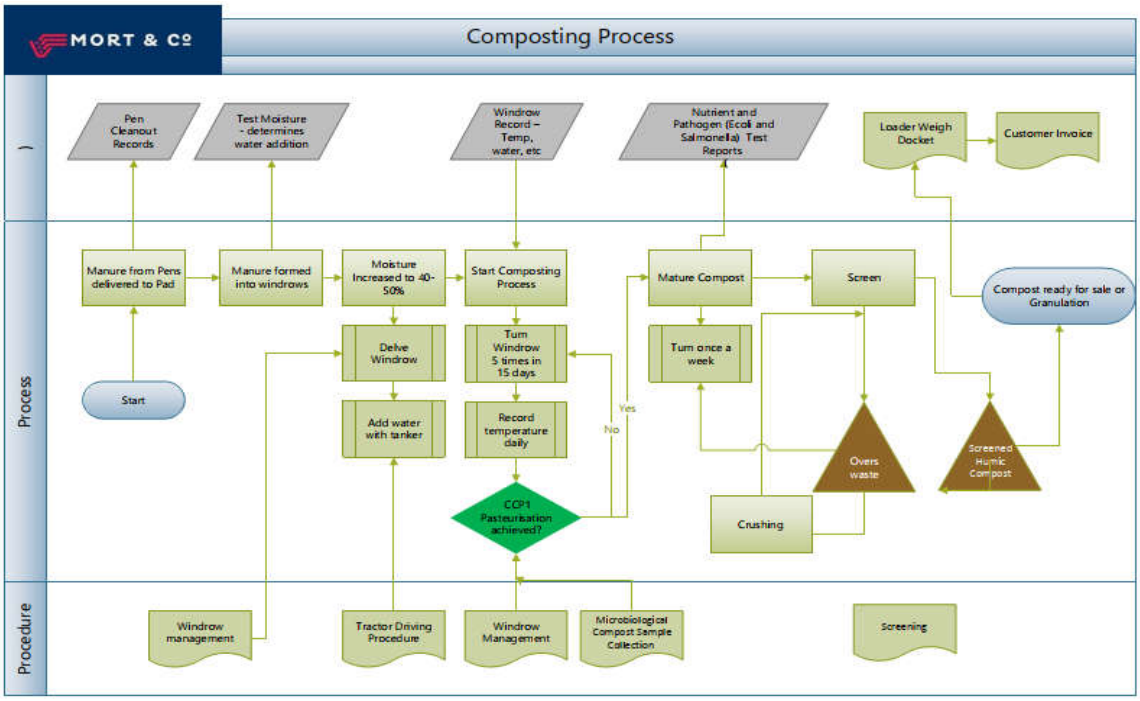
- exceed 55 deg C for 15 consecutive dates while being turned 5 times during that period. Pass a test for pathogens;
- have a minimum moisture level of 25% at time of sale;
- pass the minimum levels for heavy metals; and
- pass a test for weed seeds and plant propagules as required.

The windrows are turned and when considered at a steady state put into the humic compost programme where each windrow is assigned a batch number.

Compost pad staff record the temperatures as per the **FEPR0016** SWP - Windrow Management procedure.

Once the compost has been through the minimum requirements to comply with AS 4454-2012, the windrows are sampled as per **FEPR0014** SWP – Microbiological Compost Sample Collection and sent to an external NATA accredited laboratory for pathogen testing, (E coli and Salmonella). Finished composts are assessed for pathogens, per windrow and heavy metals as required dependant on the risk.

Once the results are received and passed, the compost windrows are combined and allocated a screened humic compost batch number. The batch is then screened as per **FEPR0006** SWP –



Screening.

Other activities on the composting pad

As a requirement of the feedlot licence, dead cattle are composted in a separate area downstream from the humic composting area to avoid contamination and in compliance with the environmental management plan. Deads are stacked two wide, usually on a bed of sawdust and topped with active hot compost. This ensures that the composting processes is accelerated. Once the piles are sufficiently broken down, they are screened and sold off as blood and bone compost to non-organic growers. This product is not incorporated into Mort and Co humic compost, or compost mixes used for granulation.

Granulation Summary

ACO certified screened compost (from the composting operation), and approved materials are transferred to the factory for the granulation process (refer to facility map).

Blending

Screened compost is transferred to the Scorpion Pugmill, where approved materials are added to the individual bins and mixed as per **FEPR0021** SWP-Scorpion Pugmill

Preparation for Granulation

Stockpiled screened compost/ compost blend is adjusted for moisture using the Scorpion Pugmill and placed on the pad.

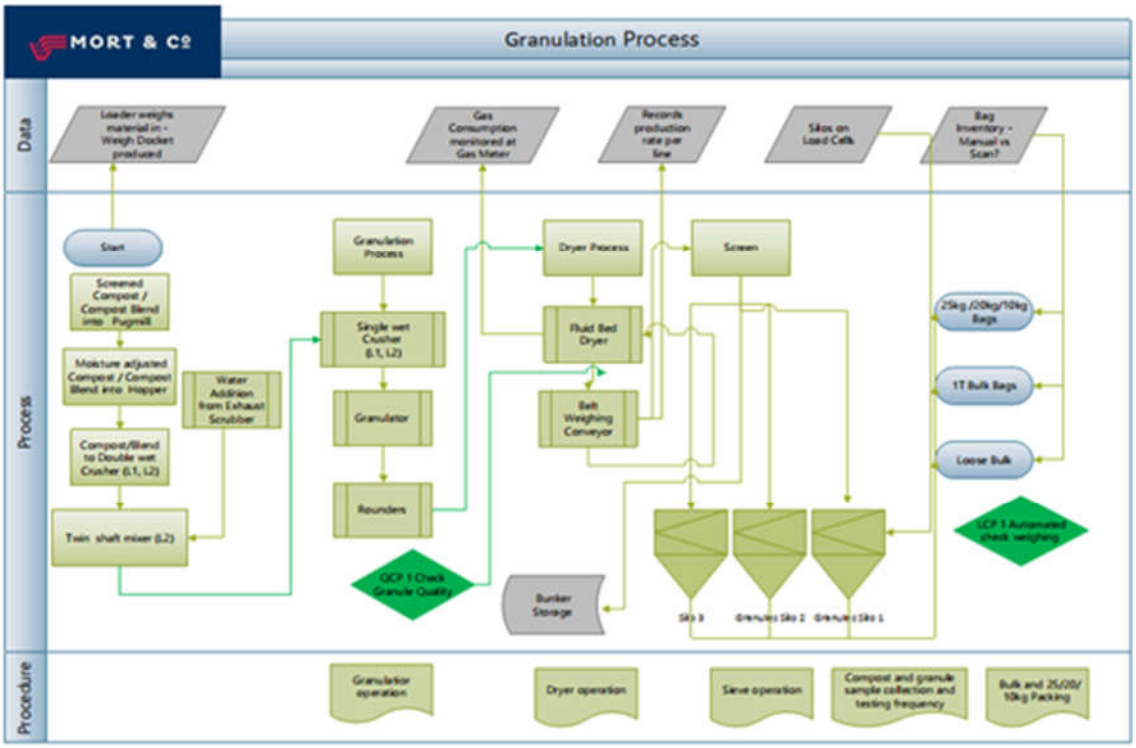
The moisture adjusted material is then transferred to the intake hopper with a loader, conveyed to the in-line clump breaking, steam conditioners and subsequent granulation line.

Granulation and drying

The compost / compost blend is granulated and transferred to the rounders and then into the two staged dryer equipped with moisture sensors where the granules are dried to a final moisture of between 10 and 12 %. The dry granulated product moisture is monitored via inline moisture sensors.

Post drying

Granules are passed through screens specific to produce finished products as per different specification requirements. The sieved finished product is then conveyed to either a storage silo or bunker.



Packaging process

Granules can be sold as bulk or packaged into 10, 20 or 25kg and 1,000kg bags.

Quality control

The following tests are conducted by the Quality Manager on the finished product and packaged product.

- Moisture
- Bulk density
- Size distribution, shape, and dustiness
- Durability
- Electrical conductivity and pH as required.

Nutrient analysis, Heavy metals and pathogen tests are conducted at an external laboratory as required.

Retention samples

Samples of daily finished product and packaged product are retained for a year or longer if there is still stock on hand. These are labelled with the batch, time and production or packaging date.

Cleaning and Sanitation

The factory is cleaned daily and may include several methods as required, such as sweeping, vacuuming, and blowing with compressed air.

No chemicals are currently used in the cleaning process. If chemicals were used, they would be assessed for suitability to continue Organic compliance.

Critical Control Points

The following critical control points have been identified,

- CCP1 all humic compost to pass pathogen tests prior to sale as humic compost or for production of granules.
- QCP1, Product within specification for moisture and particle size distribution.
- LCP1, all packaged products must comply with the National measurement institute of weights and measures regulations.

Records

Records of turning, temperature measurement and water addition are maintained on the Monday Software/ Pronto system. Granulation and packaging production records sheets are saved to the Grassdale Fert (S) drive on the Mort server or in Pronto.

Sales

All bulk loads are accompanied by despatch dockets which include the weight of the product load.

	All loader operators are required to inspect their trucks prior to loading to ensure that there is no contamination. Contracted transport companies are required to sign the **SFFR0016** Transporters Agreement. **Recall and Withdrawal** In the event of a withdrawal, the **MNPR0004** Recall procedure will be followed. **Traceability** This is documented in **MNPR005** Batch ID and Traceability.
Related Resources & Links	Australian certified Organic standards V1 August 2023 https://austorganic.com/certification-and-standards/standards/acos/ Australia's Measurement System https://www.industry.gov.au/national-measurement-institute/australias-measurement-system Other Related Documents **MNPR0004** Recall and Withdrawal; **MNPR005** Batch ID and Traceability; **FEPR0003** SWP - Dryer Operation; **FEPR0004** SWP - Granulation Process; **FEPR0005** SWP - Fertiliser Loading; **FEPR0006** SWP – Screening; **FEPR0008** SWP - Granulator Operation; **FEPR0021** SWP - Scorpion Pugmill; **SFFR0016** Transporters Agreement; **FEPR0016** SWP - Windrow Management