

Tasman Group Services Pty Ltd
Wellington Road, Longford, Tasmania.



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1.0 Overview

This report presents the results of the review of the paunch management practices commenced at the Tasman Group Service Pty Ltd (TGS) meat processing facility located in Longford, Tasmania in April 2007. The report summarises the site's key processes, waste paunch source and management and final treatment activities.

RIES Environmental was engaged to undertake an independent review and reporting of the site's paunch management practices.

The review found that the current practice of treating and diverting paunch material to the on-site solid fuel boiler provides an effective site-specific management solution for the Longford facility.

Even though meat is the most significant product from the site, byproducts such as hides, blood, fat, bone and offal are also produced. The profitability of the abattoir can depend on the extent to which these materials are utilised. TGS has investigated the option of having paunch materials transported off site for further treatment as compost. This option is not readily available to the Longford facility as a permanent, cost effective and reliable management option.

The review concludes that the current paunch management practices at the Longford site are clearly aligned to accepted '*Cleaner Production*' approaches as these provide financial benefits to TGS as well as broader environmental benefits.

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2.0 Site Location

The Tasman Group Services 86ha meat processing facility is located within a General Industrial zone immediately north of Longford at Lot 3 Wellington Road (also referred to as Tannery Road).

The subject land is located approximately 750m east of Tannery Road and is bound by rural land (owned by TGS) along the northern and western boundaries and other general industrial areas along the entire southern boundary.

3.0 Environmental Management

As part of the company's long-term operational plans, management processes and procedures are regularly reviewed to ensure that the company adopts effective and cost efficient environmental management practices in all aspects of its activities. Waste management (air, land and water) are listed as ongoing action items in the site's Environmental Management Plan.

3.1 Energy

Approximately 80–85% of total energy consumed at the site is provided by natural gas (15%) and thermal energy from the combustion of fuels in the **on-site solid fuel-fired boiler** (fig.1). The remaining 15–20% of energy is provided by electricity, which is used to operate equipment in the slaughter and boning areas, for by-product processing, and for refrigeration and compressed air.

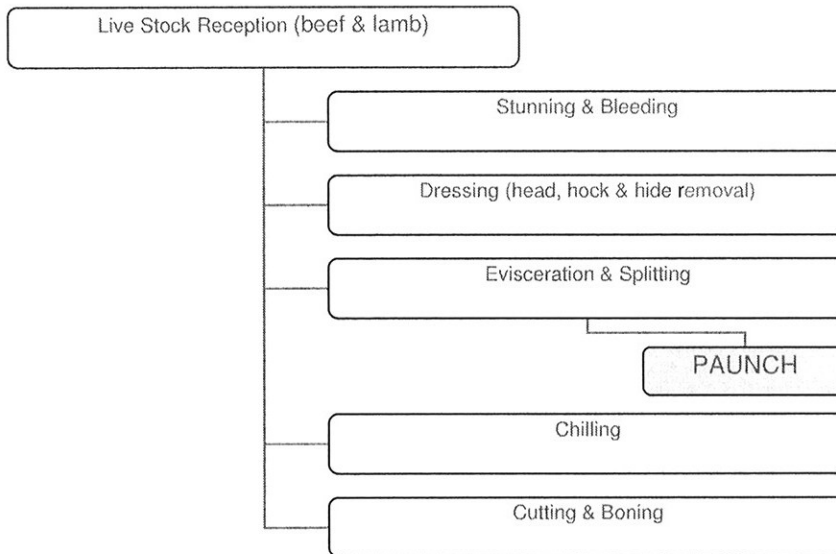


Fig: 1

TGS has already identified energy as an area where savings can be made almost immediately with no capital investment, through simple housekeeping efforts. Additional savings are being made through the use of more energy efficient equipment and heat recovery systems.

The reuse of paunch material contributes to site's energy efficiency objectives.

4.0 Key Processes



4.1 Evisceration and Splitting

After dehairing and hide finishing, the carcasses pass to the evisceration area, where the **stomachs are opened** (cattle *paunch weighing about 40 kg) and the viscera removed (the paunch is then directed by conveyor for splitting). The breastbone is split and the plucks (heart, liver and lungs) are loosened and removed. The carcasses are then de-headed and split along the backbone. Finally, the carcasses are chilled rapidly overnight before the subsequent processes of cutting and boning takes place.

**The contents of cattle and sheep paunches (first compartment of the stomach), is primarily undigested grass and feed.*



Fig 2: Paunch being removed.



Fig 3: Paunch on conveyor.

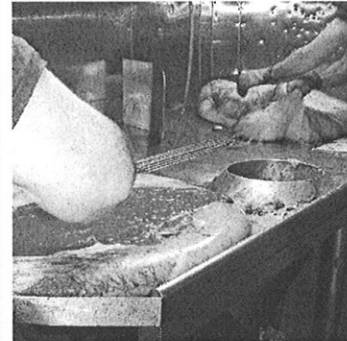


Fig 4: Paunch splitting.

4.2 Paunch Dewatering

Following the splitting process, the paunch is washed into a screw conveyor and diverted to the paunch screw press (fig 5) where the paunch is dewatered to 12% dry solids, which represents a volume reduction of 88 %. The screw press is designed specifically to handle paunch material from abattoirs and has low energy consumption (5kW motor). The design capacity of the press is approximately 25kg/hr (200kg/day)

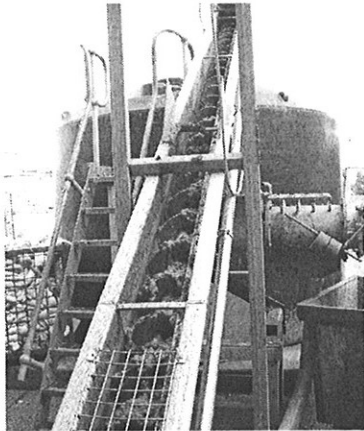


Fig 5: Paunch screw

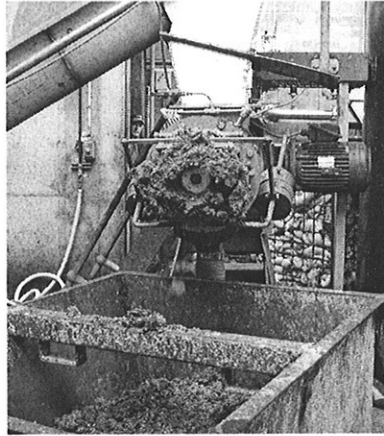


Fig 6: Paunch press

From the press, the dry paunch drops into a skip, which when full is taken by forklift to the solid fuel storage area where a front-end loader/tractor progressively mixes the paunch with sawdust. The mixed material is then suitable as a fuel for the solid waste boiler.

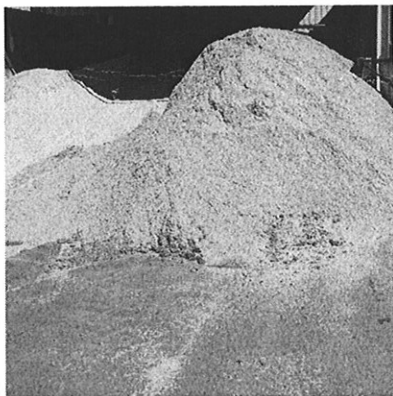


Fig 7: Paunch material and sawdust mix

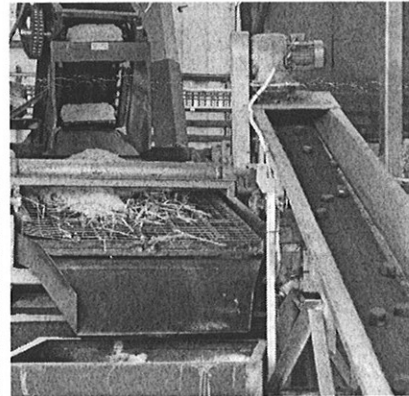


Fig 8: Sawdust shaker and Briquette conveyor.



Fig 9: Pressed paunch

In the event that the combined sawdust and paunch material moisture content is too high, briquettes may be added to assist the burning process.

Wastewater from the paunch transfer and the press process is pumped into a storage vessel and a 12,000 litre capacity tanker transfers the wastewater to locally nominated farming paddocks where the effluent is land-spread. The paunch process generates > 10kl/day of wastewater.

4.3 Paunch Volume

The daily animal production levels of the plant are as follows:

Cattle	>450 head
Calves	>100 head
Sheep/Lambs	>1,600 head

The estimated quantity of paunch produced is >1.2tn/day.

5.0 Former Paunch Management Practice

The saturated paunch was conveyed to a paunch storage vessel where a company operated tanker pumped the paunch and water content into a 12,000-litre tanker vessel. The tanker then transferred the content to locally nominated farming paddocks where the waste was land spread.

Key ongoing problems with this former practice include:

- Accessing properties during wet weather periods.
- Off-site odour emissions.
- Limited number of sites available for land spreading.
- Transport and labour costs.
- Additional regulatory requirements.
- Additional pre disposal treatment required.
- Animal welfare – 42 day retention time required before stock could return to paddocks.
- Health and Safety and general human welfare – potential for pathogens being generated and spread.

6.0 Future Improvements

TGS is currently investigating the option of dry dumping paunch material in order to remove >10kl/day of wastewater. The paunch splitting area is being redesigned over the next 6 months

7.0 Conclusion

The current paunch waste management practices at the TGS Longford site, assists in preventing inefficient use of resources and avoiding unnecessary generation of waste.

The key benefits of this practice are:

1. Conservation of resources.
2. Reduction and reuse of waste.
3. Reduced operating costs.
4. Reduces transport costs.
5. Reduced liability associated with the treatment, storage and disposal of waste.

The above benefits are being achieved whilst maintaining conformance with state air emission quality requirements.