Facts

Our Facts – Water Treatment Plant

- Reduces our reliance on main water systems by around 400 million litres per year or 1.1 million litre day
- With the on-site recycling plant, we can reduce our water usage to less than 2.2 litre of water per litre of beer packed – currently at 2.5 hL of water per hL of beer making us one of the lowest users of water as far as breweries go anywhere in the world.
- 20 years ago we used 10 litres of water to make one litre of beer
- Water recycled is returned to ultra high purity before being used for non-product related purposes only – cooling towers, boilers, pasteurisers and cleaning activities

How are we reducing our carbon footprint?

Castlemaine has a large array of metering, monitoring and management systems that collect data from all processes across site. These include electricity, water, steam and carbon dioxide etc.

Castlemaine collects and analyses the data from this monitoring to:

- improve processes through leak detection or inefficiencies,
- identify opportunities for savings, or efficiency
- plan maintenance schedules to get optimum performance
- set key performance indicators to further improve performance
- reduce our environmental impact through waste reduction or losses

reducing our energy use - currently Castlemaine are the benchmark for the group in GJ/ HL of beer produced - we have an energy opportunities management group on site who have targeted projects across the site to further reduce our energy use, with more efficient refrigeration systems and environmentally friendly electrical transformers.

Castlemaine have an environmental management plan which sets targets and identifies projects that can be implemented to hit those targets. These include ongoing water saving projects identifying other sources that can be used for renewable energy or recycled

LN have an environmental purchasing policy.

We target waste to landfill by having an active recycling program where by what can be recycled , reduced or reused is implemented - this includes cardboard, cans and glass from our packaging lines.

Spent grain is sent to cattle feed and yeast to Kraft for vegemite

We collect carbon dioxide generated by the fermentation process - clean it and reuse it in our process - the CO2 recovery system (which we won a greenhouse gas challenge award for) means that we are self sufficient in CO2

Participation in the national packaging covenant

Our Environmental Impact

As part of the environmental management we have identified our environmental aspects and impacts and we use this in our Environmental Management Program to target areas to further reduce our impact.

We ensure that we are compliant with environmental legislation

We have a strong system of reporting and actioning on site - where if incidents or complaints occur they are recorded and actions set in place to respond or correct and learn from them

Manufacturing Excellence - 5S Lean manufacturing is being introduced across the site which will have a flow on effect into environment -cleaning up and maintaining the site to a high standard of hygiene and practice.

Our Renewable resources

We are using the Biogas generated by the water recycling plant to supplement the natural gas feed to our boilers. Previously used coal which non-renewable resource, environmentally unfriendly

Water Conservation

Castlemaine's water to beer ratio is setting the standard - we are aiming to set 'world's best practice of 2.1 lts/lt'

We have a water efficiency management program on site - which identifies and implements water savings

Castlemaine Perkins WRP(Written for LN Shout)

The Water Recycling Plant (WRP)at Castlemaine Perkins is delivering the targeted potable water and discharged trade waste savings that have seen our sites water efficiency become one of the worlds best for like size and type operations. The WRP receives raw trade waste from the entire site including brewing, packaging and utilities operations. Primary treatment consists of mechanical screening followed by secondary anaerobic and aerobic process stages, reducing the COD of the wastewater from >5000mg/L to ~300mg/L primarily via methanogenesis and biologically transforming organic pollutants to mineralised forms (PO4, NH3, NH4, NO3, SO4) which are incorporated into the biomass. The production of biogas (85-90% methane) in the anaerobic reactor is a favourable by-product and is utilised as an alternate/ supplementary source of gas to the boilers. The secondary treatment process continues with solids removal by dissolved air floatation and sand filtration, providing a high quality water for micro-filtration (MF) and reverse osmosis (RO) treatment. The outcome is an RO permeate that is free from protozoa, bacteria and virus particles and with very low inorganic impurities or heavy metals. Chlorine dioxide treatment to maintain sterility during storage, and pH adjustment to remove any corrosive potential, are the final stages of the treatment process.

Recycled water is reticulated to various users and plant around the Castlemaine Perkins site, taking special care to prevent any contact with our valued product. Main site users consist of post-pack pasteurisers, CIP make-up water, boiler and cooling tower feed water. By utilising recycled water in these operations the potable water requirements of the site are obviously significantly reduced. This allows for the current site water ratio target for potable water hL : packaged product hL of 2.1 to be reached and on occasion beaten. The XXXX WRP has become an example of the Lion Nathan commitment to sustainability and reducing the environmental impact of our operations.

Water recycling plant produces class a+ water through biological treatment , micro filtration and reverse osmosis - the water produced is used for cleaning

Due to the footprint we had available we use a Paques bio-reactor which removed the requirement that most water treatment plants have with large open ponds

It treats over 1 mega litre per day of trade waste with a >75% recovery rate

Our Current Awards

- Green house gas challenge awards,
- Certificates from the BCC for implementing projects around water savings

Extra Info

Castlemaine is ISO14001 accredited - this means that the environmental management system we have on-site is certified and recognised as meeting international best practice