

# Hot Box Installation at Nufarm Chemicals

## Resource Efficiency Co-Funding Case Study

Cleaner Production 

### Project Overview

#### PARTNER

Nufarm Australia

#### OBJECTIVE

To reduce water evaporation by replacing hot water baths with steam heated hot boxes

#### HOW THE SAVINGS WERE ACHIEVED

Installation of hot boxes that are 84 per cent more water efficient than the hot water baths

#### TECHNOLOGY UTILISED

Steam heated hot boxes

#### WATER VOLUME SAVING

2.68 million litres per year

#### OTHER SAVINGS OR IMPROVEMENTS

- Energy savings 457MWhr (megawatts per hour) per year with estimated greenhouse gas savings of 42 tonnes of CO<sub>2</sub>e (carbon dioxide equivalent) per year
- Improved operability and safety due to the enclosed nature of the hot boxes
- Reduction of trade waste discharged to sewer

#### GHG (GREENHOUSE GAS) SAVINGS

Estimated greenhouse gas savings of 42 tonnes of CO<sub>2</sub>e per year

#### PROJECT FUNDING

- \$38,625 from City West Water
- \$10,000 from Sustainability Victoria

#### PROJECT PAYBACK

10 years when combining water and energy savings



**Nufarm Limited develops, manufactures and markets a range of chemicals for the crop protection market, including acids, chlorines, herbicides, salts and esters. If you farm, you know Nufarm.**

Nufarm's largest agricultural chemical manufacturing operation, and their global head office, is located at Laverton North. At the site, water is a central component of the chemical manufacturing process and is used in heating processes; which uses gas to heat the water. Cooling processes also utilise the water, and it is used as an ingredient within the final chemical products themselves.

A key part of the chemical manufacturing process at Nufarm involves heating and liquefying solid raw material. Previously this operation involved the use of hot water baths and drums. The use of baths meant a significant amount of water and energy was lost through evaporation. The baths

also posed possible safety risks such as scalding, which had the potential to occur when handling drums from the baths.

With the help of City West Water, Nufarm identified and implemented a project to improve the efficiency of the water bath operation by replacing them with enclosed hot box units. This has eliminated the water and energy lost through evaporation and made the units safer for staff.

The hot boxes are vastly more efficient and use only 21 kilograms of steam per hour compared with 127 kilograms per hour, an efficiency increase of 84 percent. This increase in efficiency resulted in a 2.68 million litre per year water saving, and an



### City West Water Ltd

247 – 251 St Albans Road  
 Locked Bag 350  
 Sunshine Victoria 3020 Australia

**E** enquiries@citywestwater.com.au  
**W** www.citywestwater.com.au  
 ABN 70 066 902 467

# Hot Box Installation at Nufarm Chemicals

## Resource Efficiency Co-Funding Case Study

Cleaner Production 

estimated minimum energy saving of 457MWhr (megawatts per hour) per year. Additionally, this reduction in energy use equates to a corresponding reduction in carbon emissions of at least 42 tonnes per year.

Savings are also seen in reduced discharge to trade waste and reduced chemical costs to treat water before the steam generation process. Additionally with the new hot boxes now handled on forklifts, as opposed to manual handling, spillages have been reduced.

City West Water initially contributed \$25,000 to the project and Sustainability Victoria contributed a further \$10,000. The project was originally trialed with the installation of two hot box units. This trial was successful and another two units were installed within 12 months. City West Water contributed a further \$13,625 to support the installation and expansion of this project.

Nufarm has continued to develop their Resource Management Action Plan (ResourceMAP).

To this end, Nufarm has established the *Water Warriors*, an internal team who work to reduce water consumption onsite and promote a cultural change of innovation and improvement within the company. The *Water Warriors* have been particularly successful and as a result, Nufarm staff have also made significant improvements to their water usage at home.

City West Water and Nufarm continue to work together toward further efficiency and sustainability improvements for both businesses.



## Contact

### Nufarm Chemicals

**Nancy Francis**

**Environmental Chemist**

103 – 105 Pipe Road  
Laverton North Victoria 3026

T (03) 9282 1049

E [nancy.francis@au.nufarm.com](mailto:nancy.francis@au.nufarm.com)

### City West Water

**April Chan**

**Cleaner Production Consultant**

247–251 St Albans Road  
Sunshine Vic 3020

T (03) 9313 8751

E [achan@citywestwater.com.au](mailto:achan@citywestwater.com.au)