



HEALTH, SAFETY & ENVIRONMENT REPORT 2009

Otahuhu, New Zealand

Nufarm Health and Sciences, Otahuhu, NZ formulates a wide range of agricultural chemicals and some animal health products

The plant

The plant is capable of handling powders, flammable liquids, emulsifiable concentrates and solutions. All manufacturing processes comply with stringent safety and environmental standards as specified in the regional air and trade waste discharge consents. The product range includes herbicides, insecticides, fungicides, ectoparasiticides and industrial chemicals.

Over the next six to twelve months, there will be major modification at the plant where the new Insecticides and Fungicides Plant and the Coating Plants will be installed. Health and safety preparations will include thorough design plans, hazard and operability studies (HAZOP), and detailed installation and operational qualifications (IQ/OQ) for every piece of equipment in the new plant. New explosion suppression system will also be incorporated. By identifying the explosivity parameters of the products and having safe plant designs, operating parameters and handling procedures, dust explosions can be prevented.

Health and safety performance

By the end of 2008 we had worked for about 300,000 hours without injury requiring time off work (more than four years when this was written). A total of 43 UIRs (incident reports) and 16 IRs (injury reports) were raised. Majority of the UIRs raised were observed risk (21%), maintenance faulty (9%), manual handling risk (7%); and failure of plant item (5%), housekeeping problem (5%) and in-house odour complaint (5%). Majority of the IRs raised were irritation (38%), cut (12.5%) and strain (12.5%).



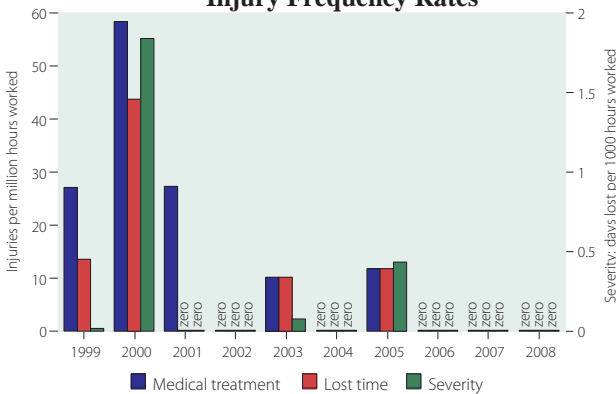
View of part of our development laboratory

Wastes

The site continues to observe the benefits of the PLC controlled and SCADA logged waste treatment plant. The control of the waste stream, that it provides, has enabled the site to rely less on dilution by water and more on caustic hydrolysis to meet its consent requirements.

Recycling and waste volumes continue to be important metrics on site. Changes in product mix resulted in higher levels of solid waste being generated during 2008.

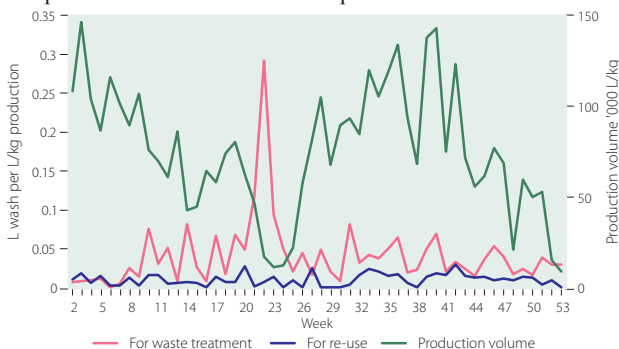
Injury Frequency Rates



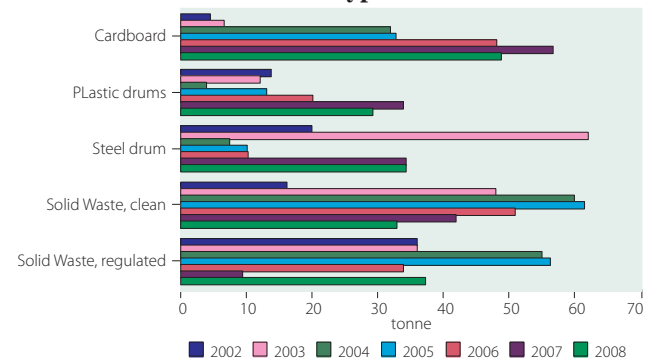
Note: All lost time injuries are also counted as medical treatment injuries

Wash waters

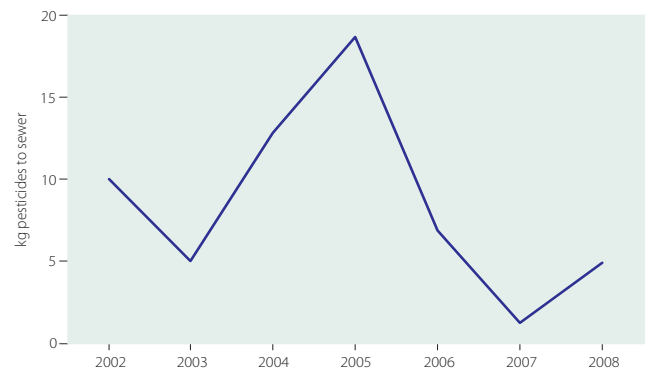
Water consumption from manufacturing equipment and packing line clean-down shows a good and steady trend. The large spike between week 20 and 24 was due to a major clean-down around the plant. The average during the year was 0.04 L wash water per L/kg of product. Approximately 25 % of washings, mainly from the Herbicides and Flowables plants, are stored for recycling in subsequent manufacture of the same products.



Waste types



Pesticides to sewer

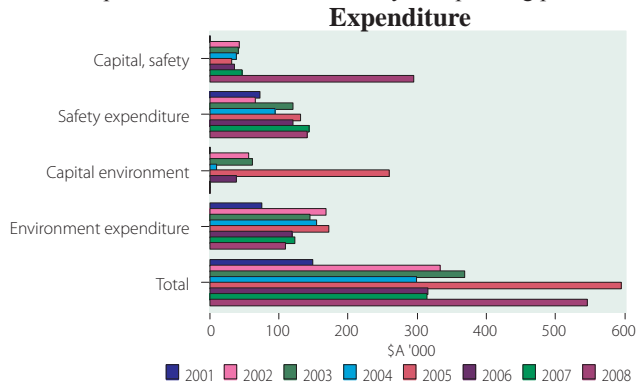


Waste destinations

Tonne	2002	2003	2004	2005	2006	2007	2008
Landfill	52.2	84	115	118	85	51.5	70.3
Re-use	38.6	80.8	43.5	56	78.7	125	113
Sewerage	0.01	.005	.013	.019	.007	.0002	.005

Expenditure

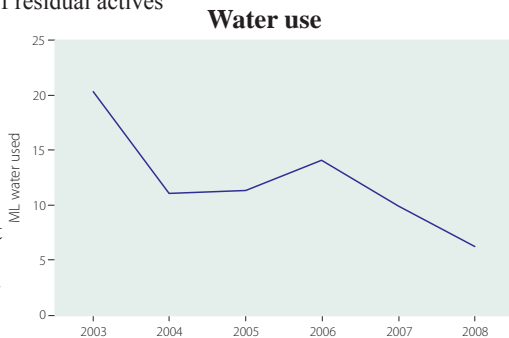
Most of the expenditures are in line with previous years, with the exception of capital for safety. When we installed the new plant, we made significant investment in safety features, including extensive dust capture equipment, manual handling aids, computer automation - all to improve the conditions and safety for operating personnel.



Environmental

The site made further significant steps forward during the year in its water management. We have reduced the amount of wash water in our process, which has resulted in a decrease of water entering our waste treatment plant. There are limitations on how much further we can go in reducing water because we are restricted on the concentration of residual actives

allowed in our discharge to sewer. We continue to work on the efficiency of our waste water treatment processes to allow for lower water use.



Community programs

Step Up hosted by Botany - East Tamaki Rotary Club. Recently, Nufarm NZ sponsored 3 employees (Katie Lim, Rupa Ram and Jackie Lee) to attend the Step Up programme organised by the Auckland Rotary Club. This 5-day programme aimed to enhance and improve the participants' leadership skills. 32 participants from all walks of life were able to experience numerous challenges in different teams.

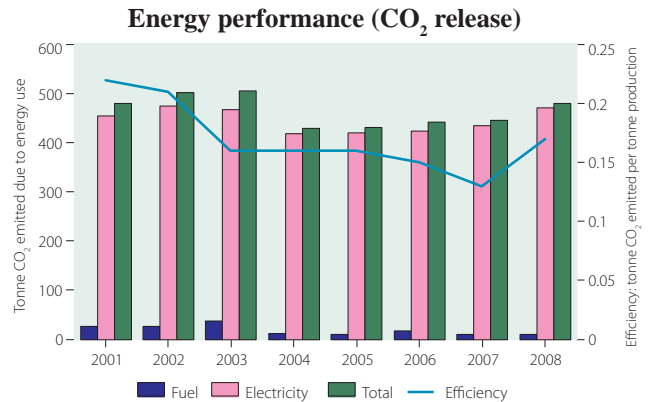
Challenges included problem solving training, a charity event for the Hearing Dogs for the Deaf, a business challenge and a 24hr physical and mental challenge at Hunua Regional Park. During the 24hr challenge, the participants were constantly reminded on using the PICSIE Model (Planning, Initiating, Controlling, Supporting, Informing and Evaluating) to tackle their tasks, while taking into the account the individual and group needs before making decisions.

Despite the fact that the participants were facing physical exhaustion, sleep deprivation and mental anguish, all of them survived and demonstrated the strengths and the natural leadership skills that they have. Special thanks to Brendan Redmond, Tui Long and Loriza Ali for assisting with the 24hr challenge and emphasising the importance of health and safety of every individual involved in the programme.



Energy performance

In 2008, the installation of the new Kaiso plant caused a major change in product mix. This plant contains some equipment used for mixing, sieving and packaging solid products. The machinery is more energy intensive than that for our normal range of products, hence the increase in demand for electricity, despite our efforts to install the most energy efficient equipment. We will continue to work towards lowering our energy use, but the easy fixes have now all been done.



Recent project

Kaiso 240WG Campaign (December 2008 and on-going)

We have been focusing hard and trying to improve our performance in the HS&E area, bearing in mind at all times the slogan "Please...think safe, work safe, stay safe!"

Many safety considerations were taken into account when designing and building the Kaiso Manufacturing Plant. Safety specification and checklists were generated in order to avoid injuries on plant. We've looked at noise levels in the plant, guards over moving parts, protection at stairways and mezzanine, dust and vapour control, operating procedures for safe handling of the materials involved, and interlocks and lockouts on equipment.

An easily manageable PLC system was also installed with operational audible alarms and accessible emergency stop button. In terms of ergonomic design, risk evaluation has been performed and proper designs were implemented. In addition, plant operators were supplied with suitable personal protective equipment for handling the synthetic pyrethroid insecticide product.

Nu-step challenge (November 2008)

This challenge aimed to create and promote health awareness among the Nufarm NZ employees, managing a better eating lifestyle and improving people's fitness level to the next step up. 8 teams consisting 6 members each were involved. The goal was to walk as

many kilometers as possible in 6 weeks, and certainly, there was something for the winning team. Each participant was given a pedometer, an action plan with tips for getting that healthy lifestyle and a timetable to record their progress. Some participants experienced malfunction of their pedometers (some pedometers even went for a swim down the WC!!!), yet overall it was a great team effort. Everyone did extremely well and by the end of week 6, a total of 16,440 kms was achieved. The best individual was Simone Tuibenau, with a distance of 968 kms. Best team (named Black Friday) achieved 3599 kms.

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