

**Australian Vinyls** Corporation Pty Ltd

# sustainability report

2008-09

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# our business

Australian Vinyls is Australia's leading supplier and manufacturer of vinyl (PVC) resins and wood-plastic composite products. We also supply caustic soda and a range of specialty chemicals for the plastics and rubber industries.

The company is owned by CSBP Limited, part of the Wesfarmers Limited group, a major diversified Australian public company. CSBP has a revenue in excess of \$1 billion.

We own and operate Australia's only vinyl resin manufacturing plant, at Laverton North in Victoria. It produces suspension vinyl resin for use in a wide range of products such as pipe, cable insulation, floor coverings, building profiles, packaging and compounds.

The plant has a capacity of approximately 140,000 tonnes of resin per year and occupies nearly 40 hectares of land to the west of Melbourne, Victoria.

The company has a wholly owned subsidiary, ModWood Technologies Pty Ltd, which manufactures wood-plastic composite products such as decking, marine boards and outdoor screens. ModWood's plant is based in Campbellfield, Victoria and its products are made using wood waste and post-consumer recycled plastic milk bottles.

Australian Vinyls and Modwood employed 132.7 full time equivalent people as at 30 June 2008, across the various businesses and divisions. This includes contractors and casual staff.

Australian Vinyls has published annual safety, health and environment or sustainability reports for the previous ten years. Australian Vinyls' activities have also been included in the section on CSBP Limited in the Wesfarmers Sustainability Report.

# year in brief

- Total production for the year was lower than usual as the plant continued to recover from the unexpected, prolonged shut-down in 2008 and the market slowed due to the Global Financial Crisis
- There were no accidental releases of vinyl chloride from *unlicensed* points of the plant, but one breach of licence resulted in an emission of 6.8 kg
- The rate of injuries increased, moving us further from our target of zero injuries
- There were no personal exposures to vinyl chloride above the regulatory exposure standard of 5 ppm but 7 exposures above our internal limit of 1 ppm. Our target is zero exposures.
- Emissions of vinyl chloride and greenhouse gases were within targets, but water efficiency deteriorated.
- The PVC plant was unable to meet its target to increase the diversion of waste from landfill
- Australian Vinyls agreed its first Sustainability Plan with its local community, a progression from a traditional Environment Improvement Plan

# priorities & progress

Aspect	2008-09 Priorities	Progress	2009-10 Priorities
<b>Water</b>	To control our water consumption to be <4.5 kL/tonne PVC produced	Not achieved: 5.1 kL/tonne PVC produced	To control our water consumption to be <3.5 kL/tonne PVC produced
	Long term target of zero fresh water use in manufacturing at Laverton	Progressing. Water Recycling Plant constructed	Successfully commission the Water Recycling Plant
<b>Energy and Greenhouse</b>	To control our greenhouse emissions to be <550 kg CO <sub>2</sub> e/tonne PVC produced	Achieved: 501 kgCO <sub>2</sub> e/tonne PVC produced	To control our greenhouse emissions to be <500 kg CO <sub>2</sub> e/tonne PVC produced
	10% reduction in energy (MJ) per tonne of ModWood by Jan 2009	Achieved: 13.4% reduction in MJ per tonne by 30 June	
<b>Wastes and Emissions</b>	Zero Accidental Emissions from unlicensed points of the plant	Achieved. However, there were 3 instances of exceeding the licence limits	Zero Accidental Emissions from unlicensed points of the plant.
	Total VCM emissions of <30 grams/tonne of PVC produced	Achieved: 28.1 g/ tonne PVC produced	Total VCM emissions of <25 grams/tonne of PVC produced
	Reduce total waste sent to landfill by 5% from 2006-07 level	Achieved: solid waste sent to landfill from AV & ModWood was estimated to be 2203 tonnes, a decrease of 8% on last year	Reduce waste sent to landfill
<b>Materials, Processes and Products</b>	Meet all relevant commitments in the Australian PVC industry's Product Stewardship Program	2008 Commitments met with one exception.	Meet all relevant commitments in the Australian PVC industry's Product Stewardship Program
	Supply finished resin with residual VCM content of <1 ppm	Actual Residual VCM 0.12ppm	Supply finished resin with < 1ppm residual VCM
<b>Health and Safety</b>	Zero Injuries	Not achieved. WPI case rate 14.0 per million hours	Zero Injuries
	Zero Exposures	Not achieved: 7 exposures >1ppm, although no exposures > 5ppm regulatory standard.	Zero Exposures

# company review

Australian Vinyls aims to manage all its activities with respect and care for people and the environment. We believe all work related injury and illness and work related safety and environmental incidents are preventable.

We are committed to open communication of our sustainability performance. We believe consultation with the community, the regulatory authorities, our customers and our employees will contribute to our plans and improve our performance.

These values and commitments provide the framework for our sustainable business approach. During 2008-09, we planned the review and update of our three year Environment Improvement Plan in conjunction with local community representatives and extended it to develop a Sustainability Plan. The Sustainability Plan, agreed in June 2009, details the processes we will use to continually improve our performance and eliminate unacceptable social, health and environmental impacts from our operations and our product.

The consultative process used to develop this Sustainability Plan will continue. Our stakeholders will have a direct role in reviewing and assessing our

progress and, most importantly, in working with the company to address key sustainability issues.

As this report indicates, 2008-09 produced mixed results for our performance. While our energy consumption and efficiency performance was on track, we fell short of a number of our other targets. In part, this was due to continuing recovery of production volumes after the prolonged plant shut-down in 2007-08. By the end of the reporting year, we had not yet returned to previous levels of efficiency.

I would like to acknowledge the help and support that our community members give us in developing, improving and monitoring our activities. We would also like to thank our employees for their hard work in all areas, but especially in sustainability. It is the contributions of our stakeholders that have made our sustainability awareness culture so strong.

**David Cooper General Manager**



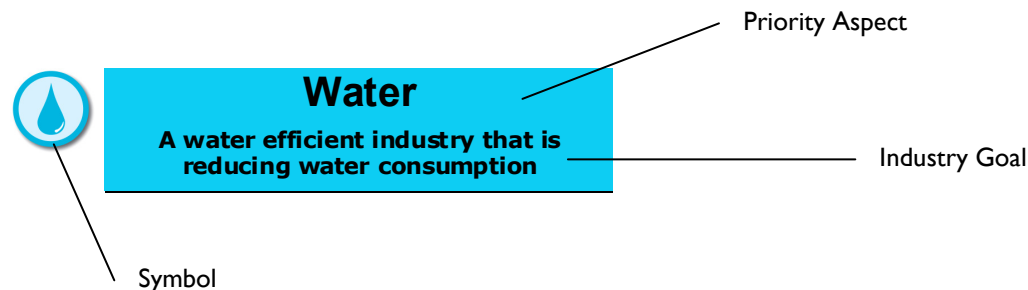
# scope of report

In order to provide information to our stakeholders, this report has been prepared based on the data collected and provided for the annual sustainability report of our parent company, CSBP Ltd. A copy of the 2008-09 report is available at [www.csbp.com.au](http://www.csbp.com.au)

CSBP Ltd provide performance data to the annual sustainability report of the group company, Wesfarmers. Our data for these reports is independently verified.

This report provides a summary of the environmental, social and health performance of Australian Vinyls' activities including that of our subsidiary, ModWood.

As a signatory to the Sustainability Leadership Framework developed by the Plastics and Chemicals Industries Association (PACIA), we have structured the content of this report around the indicators of the key priority areas relevant to us under the Framework. Each indicator has a symbol to represent it> We have used these symbols were appropriate and note the industry priority or goal as given in the Framework.



Australian Vinyls has not yet developed performance goals for each indicator but is exploring how we may incorporate the additional priority areas identified for the plastics and chemicals sector, in future measurement and reporting.

The Sustainability Leadership Framework is a process for aligning our existing sustainability systems and metrics and further integrating sustainability into our business. For more information, visit [www.pacia.org.au](http://www.pacia.org.au)

## Symbols of Framework Priority Areas



## Symbols of Framework Strategic Pathways





# Water

A water efficient industry that is reducing water consumption

## AV's priorities:



- To control our water consumption to be <4.5 kilolitres per tonne PVC produced.



- To reach a long term target of zero fresh water use in manufacturing at the Laverton PVC plant.

## Progress

### Laverton North

Australian Vinyls Laverton North plant utilises water in both the services part of the plant, and the reaction process. The plant is listed in Melbourne's Top 200 water users.

We have had a constant focus on our water use and have been working to reduce it for many years.

During the year, the plant consumed a total of 604.3 megalitres, up 13 per cent on the previous year. We did not reach our efficiency target as our water use was 5.1 kL/tonne PVC produced. Water efficiency had exceeded our target since the production difficulties experienced from March 2008 and only improved to below the target in the final quarter of the 2008-09 year.

However, a significant step in moving to our long term goal was achieved in 2008-09 with the

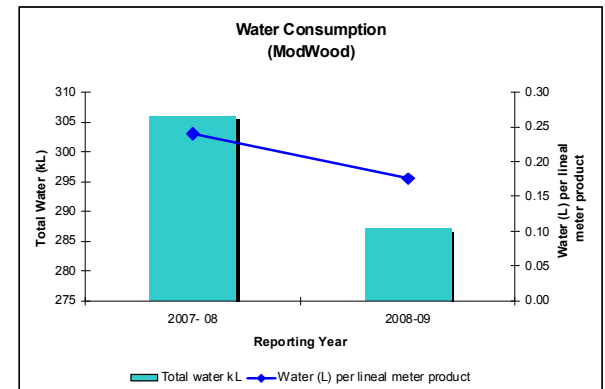
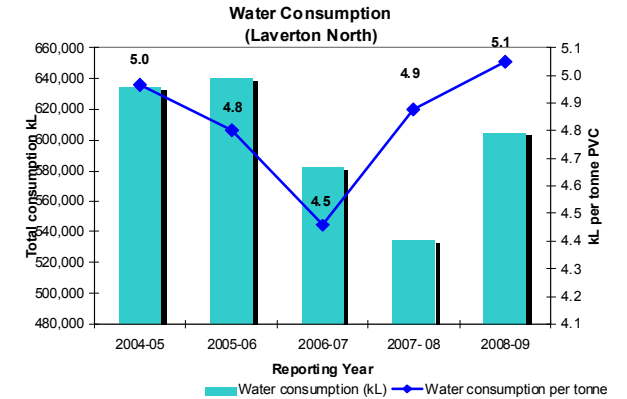


completion of construction of an on-site effluent recycling plant to recover and recycle water for reuse back in the plant. By the end of the year, commissioning had commenced and the \$5.3 million recycling plant is expected to be fully operational in February 2010.

The new plant will recycle approximately 340ML of effluent per annum, and will reduce our fresh water in-take by approximately half.

### ModWood

In 2008-09 ModWood used 287 kL of water. This is a decrease of 6.2% on 2007-08. ModWood also increased production in this year, so its efficiency improved by 25%.



## Future focus

CSBP's priority in 2010 is to maximise use of recycled and reclaimed water supply sources. Australian Vinyls will work towards its long term goal of zero fresh water use in its PVC manufacturing operations.



# Energy and Greenhouse

## An energy efficient industry that is reducing greenhouse emissions

### AV's Priority:



To control our greenhouse emissions to be <550 kg CO2e/tonne PVC produced.

### Progress

#### Laverton North

Australian Vinyl's Laverton plant accounts for four per cent of CSBP's total greenhouse gas emissions.

We achieved our target with carbon dioxide equivalent emissions of 500 kg per tonne of PVC, an improvement of seven per cent on 2007-08.

Although our electricity consumption efficiency improved slightly for 2008-09 compared to 2007-08, our gas energy efficiency was below target for the year despite showing steady improvement during the year as production levels resumed.



#### Transport-related emissions

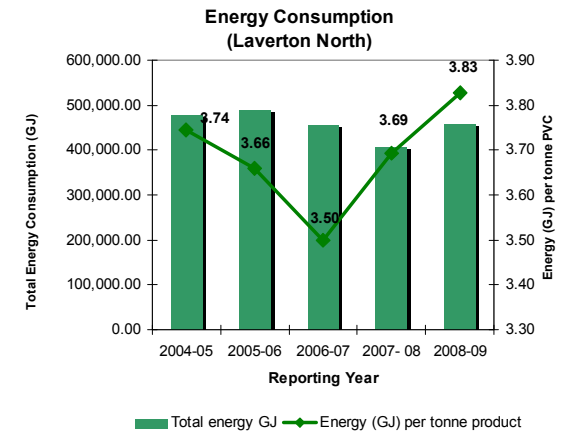
As in previous years, we have also quantified our Scope 3 emissions from the transportation of our product and some feedstock. Our Scope 3 emissions for 2008-09 included emissions associated with our scope 1 and 2 emissions, in addition to road transport of our bulk PVC, Caustic and vinyl chloride and our petrol use.

In 2008-09 this equated to approximately 7,777 tonnes CO2e equivalent to 11.4% of our total greenhouse emissions. This is higher than in previous years, as we continue to improve our data capture in this area, with more transport counted and the addition of Scope 3 emissions from Scope 1 and 2 emissions. These emissions are not included in the charts.

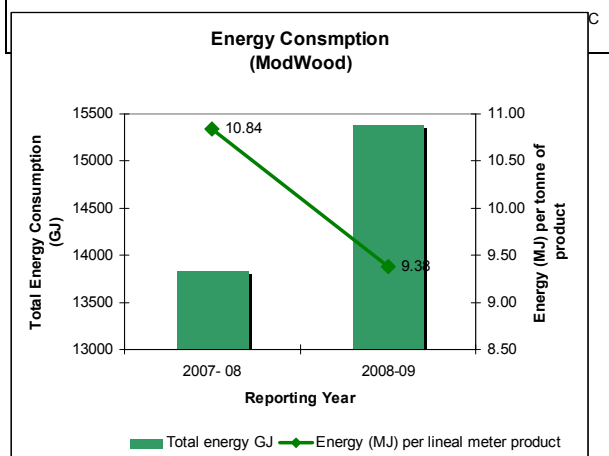
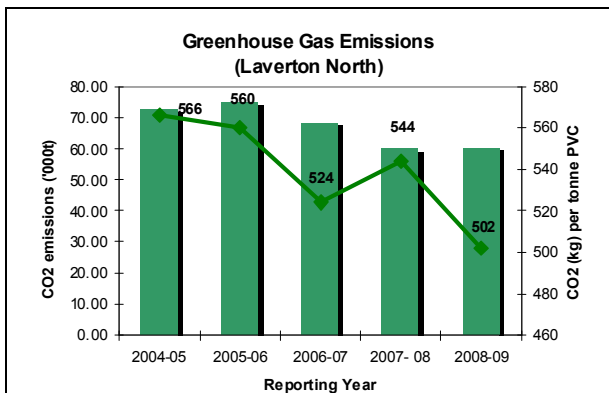
#### ModWood

Production at ModWood increased over the year, resulting in more energy being used and greenhouse gases being produced. However, efficiency improved reducing the embodied energy and greenhouse per tonne of ModWood board.

Carbon dioxide equivalent emissions for ModWood were 0.9 tonnes per tonne of board, down 23 per cent on the previous year.



Note the Laverton North graph represents Electricity and Natural Gas use.





# Waste and Emissions

## An industry aiming for zero wastes and emissions

### AV's Priority

- Zero Accidental Emissions from unlicensed points of the plant
- Total VCM emissions of <30 grams/tonne of PVC produced
- Reduce waste sent to landfill by 5% from 2006-07 level

### Progress

#### Laverton North: Recycling and Waste Avoidance

AV and ModWood sent an estimated 2,203 tonnes of solid waste to landfill in 2008-09, a decrease of eight per cent on the previous year.

During the year, one of our customers converted from packaged PVC to bulk deliveries. This resulted in a reduction in the percentage of packaged PVC sold from our Laverton North plant to 15% from 26% the previous year.

Only 2.2% or 34.4 tonnes of AV's solid waste is categorised as hazardous, with the remaining 1,538.5 tonnes, being general waste. Of the total solid waste generated at Laverton North, 24.7% or 388.6 tonnes

was recycled, with 74.3% or 1168.2 tonnes going to land fill. A small amount of waste is in storage until a suitable outlet can be found for it.

One strategy to target waste in the business was the introduction of a Waste Reduction Squad, to identify and champion waste reduction activities.

A small quantity of PVC-sheathed cabling removed from the previous Distributed Control System at the plant was sent to a reprocessor for recycling.

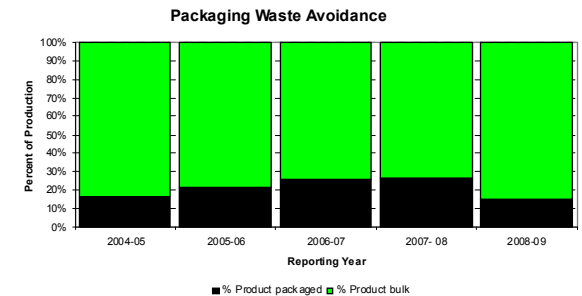
#### Effluent

Both total trade waste discharge and the trade waste per tonne of PVC produced for the year rose. A total of 444,897 kilolitres of trade waste effluent was discharged.

However, we completed construction of the effluent recycling plant, and this will have a significant impact in reducing our effluent discharge from the Laverton North plant when it is fully operational.

#### VCM Emissions

VCM is a liquefied gas maintained at pressure and is the primary raw material required for the manufacture of PVC. Australian Vinyls operates a real-



time emissions monitoring system to measure licence point emissions and minimise fugitive emissions.

Total VCM emissions to air and water from the plant were higher than the previous year due to some ongoing commissioning issues with the new Distributed Control System. This, coupled with a lower production year than typical, has resulted in higher VCM emissions per tonne of PVC produced, although still below our internal target of 30 grams/tonne PVC produced.

During the year, we had 3three instances where we exceeded our EPA Waste Discharge Licence limit for VCM to atmosphere from one of our licensed emission points. Two of these instances related to a single power failure event in the western suburbs of Melbourne. A total of 136kg was estimated to have been released as a result of these incidences.

Following several years of successfully meeting it, the Australian PVC industry’s Product Stewardship Program has lowered the VCM emission standard expected of Australian Vinyls from 50g/tonne to 30g/tonne. As a result, for 2009-10, we have lowered our internal target to 25 grams/tonne PVC produced.

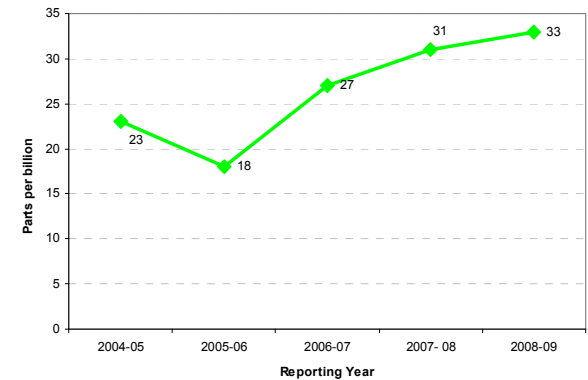
### XI6 Emissions

XI6 (ethyl chloroformate) is an initiator used in the reaction process. Emissions for the year are up slightly because we used more XI6 during the year (why?), resulting in more tank venting during the filling process. The same real-time monitoring system mentioned above, monitors these emissions. We breached our EPA Waste Discharge Licence when our XI6 analyser failed to continuously test and record data for up to six days.

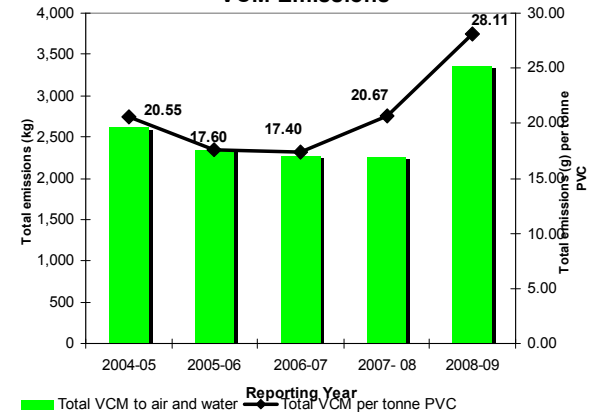
### National Pollutant Inventory

NPI results reported in this report are for the 2008-09 year, however these results, while they have been reported to EPA Victoria, have not been published by the Department of the Environment, Water, Heritage and the Arts. Total Volatile Organic Compounds emitted were 4,221 kg. This was impacted by a higher VCM emission for the year, as noted above.

Ambient Average VCM Concentration



VCM Emissions



### Ozone Depleting Substances

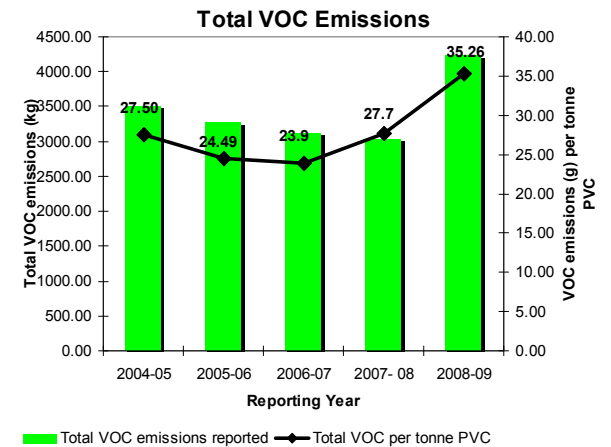
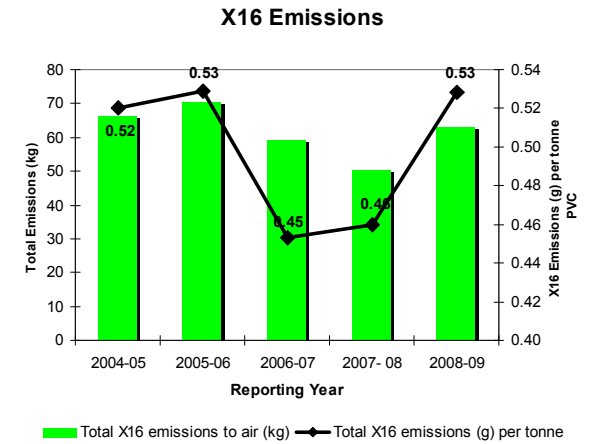
The York chilling units used in part of our process currently utilise the refrigerant R11, which is listed as an ozone depleting substance. We hold a licence to purchase and use R11 in these units. During the year, we used 400 kg of our R11 stock.

### National Packaging Covenant

We submitted a new 3 year action plan to the National Packaging Covenant in July 2008. This plan covers our on-site activities in reducing our packaging waste. For further information on the National packaging Covenant please visit [www.npc.gov.au](http://www.npc.gov.au).

### Future focus

CSBP's 2010 priority is to reduce contaminant emissions to air and water. Australian Vinyls will aim for zero accidental emissions and total VCM emissions of less than 25 grams/tonne of PVC produced. We will aim for a further reduction in waste sent to landfill.





# Materials, Processes and Products

An industry taking a life cycle view of materials, processes and products

## AV Priority:



As a Signatory to the Australian PVC industry's Product Stewardship Program, meet all relevant commitments.



Supply finished resin with residual VCM content of <1 ppm

## Progress

### Laverton North

Australian Vinyls has been a signatory to the Australian PVC industry's Product Stewardship Program since its inception in 2002. The program is a series of commitments agreed to by members of the PVC supply chain in Australia to address issues associated the life cycle of PVC and PVC products.

For the Program's 2008 reporting year, Australian Vinyls met its relevant commitments except for the requirement that resin it supplies to the market should contain no more than 1 ppm vinyl chloride. In 2008, we imported a significant amount of PVC during the plant shut-down which we specified to have less than 1ppm residual VCM. However, on subsequent testing of product from a new supplier, one batch of imported resin was found to have a residual VCM of 1.8ppm.

## Life cycle data

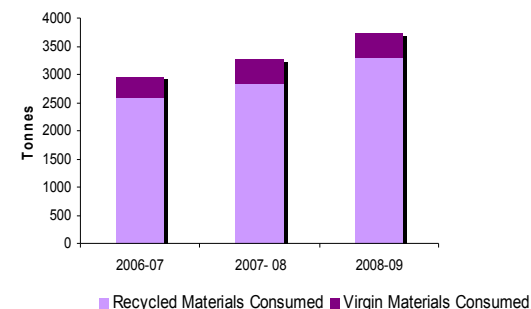
During 2008-09, Australian Vinyls commenced a study to assess existing life cycle data for PVC resin produced at Australian Vinyls and update the data set where required. The existing life cycle study for Australian Vinyls' PVC production was prepared by Boustead Consulting Ltd in June 1997. This data is now out of date as a number of Australian Vinyls' suppliers have changed, particularly for vinyl chloride monomer. It is expected that this will impact greatly on this study due to different transportation, production and energy impacts. It is hoped that eventually this study will be peer assessed and released to the national life cycle inventory database being developed in Australia for public use.

## ModWood

ModWood board is manufactured from recycled High Density Poly Ethylene (HDPE), sourced from post-consumer milk bottles, and timber off cuts milled into wood flour.

In 2008-09, the recycled content of ModWood's products was approximately 87%, or 3300 tonnes of recycled wood and HDPE.

ModWood Resource Use



## Future focus

CSBP's priority for 2010 is to continue to improve and review the company's products, processes and services. Australian Vinyls will do this by continuing to participate in the PVC industry's Product Stewardship Program, developing an updated life cycle inventory for PVC and maintaining the residual VCM standard.



# Health and Safety

An industry where people are safe and free of injury and disease

## AV's Priorities:



Zero Injuries



Zero Exposures

## Progress

### Overall Business

In 2008-09, we had four Work Place Injuries (WPI), two of which were Lost Time Injuries. This is a disappointing result as we work to eliminate all injuries; however, it is a decrease on the number of WPIs from the previous year. We have now converted to reporting WPIs per million hours worked instead of 200,000 hours. The graph shown has been converted for historical comparison.

There were also two reportable incidents to Energy Safe Victoria, the state's electricity safety regulator.

### Laverton North

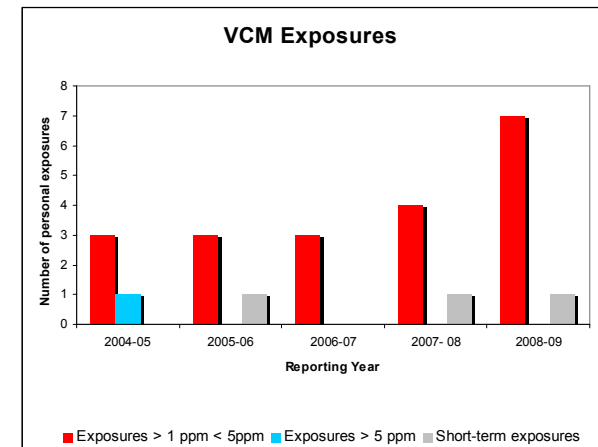
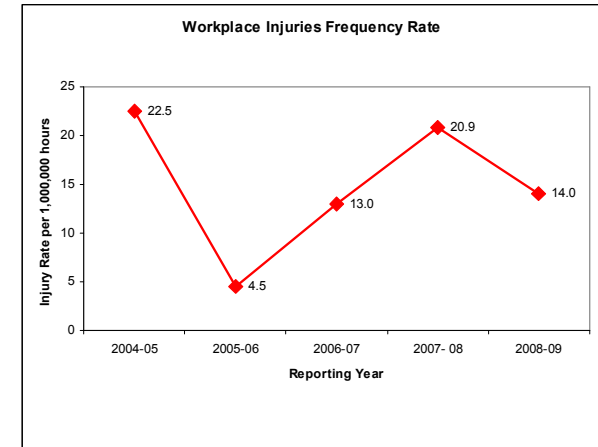
#### Vinyl chloride exposures

There were no VCM personal exposures greater than the statutory limit of 5ppm Time Weighted Average (TWA) over an 8 hour day; however, there were seven instances where personnel received an exposure of greater than 1ppm TWA, our internal

standard. We also had one short term exposure, where a person was exposed to greater than 1ppm for a short period of time. This was a poor result for the year and higher than usual. We continue to investigate any exposure greater than 1ppm to prevent reoccurrence.

Process safety is an important component of the Laverton North facility, as it is one of Victoria's Licensed Major Hazard Facilities. The Laverton North plant has various control measures in place, made up of both engineering featured and procedural controls. Assurance that these controls are working is provided by continuous monitoring through our Measures of Performance, agreed annually for operational and business teams. Every control measure that is critical to the safety of the plant is monitored and reviewed through a structured process led by the Sustainability Manager.

WorkSafe Victoria performed their annual inspection of our facility in June 2009, finding all inspected control measures and elements of our safety management system implemented and functional.



The Laverton North facility continues to be certified to AS4801 Occupational Health and Safety Management Systems.

### Employee health monitoring

At Laverton North, we maintain a health centre on site, with a part-time Occupational Health Nurse and physiotherapy services. This centre also provides services to our ModWood facility. During the reporting year, we implemented additional health assessment requirements for VCM, following updated information from the Internal Agency for Research on Cancer (IARC).

There is a gymnasium at Laverton for employee use.

### Other aspects

There were no detectable legionella readings in the plant's cooling towers for 2008-09.

WorkSafe Victoria issued an improvement notice for insufficient guarding on a milling machine . The machine was subsequently suitably guarded and the notice was lifted.

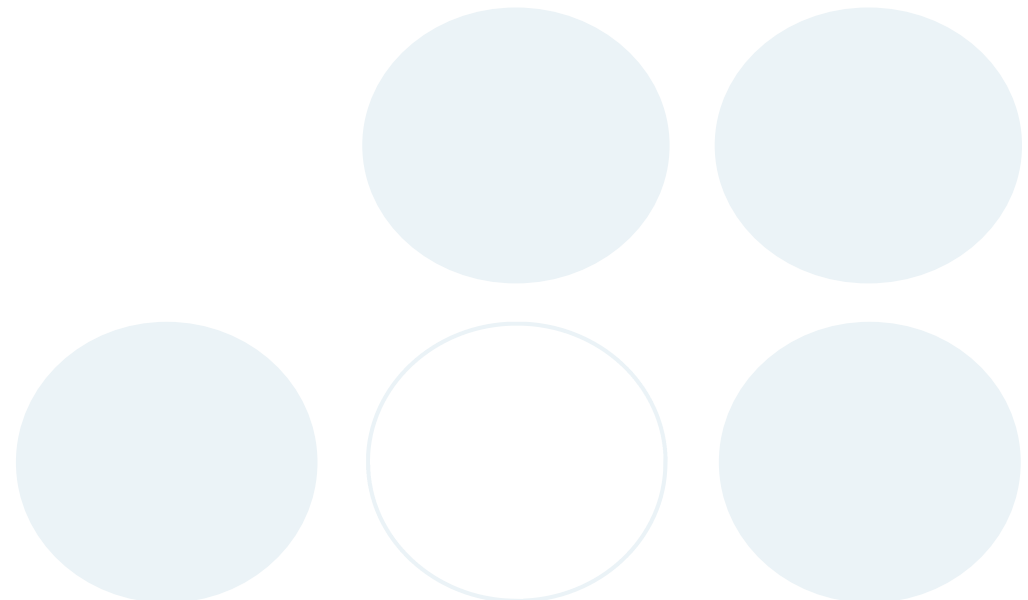
## ModWood

We continue to work toward ModWood being incorporated in our Certification to AS4801.

### Future focus

CSBP's 2010 priority is to operate its manufacturing and storage facilities to high standards of process safety and to improve workplace safety, control security and risk and minimise injury.

Australian Vinyls will continue to aim for zero injuries and zero exposures.





# Workforce

**A healthy, skilled and engaged workforce, available to meet the needs of the industry**

## AV's Progress

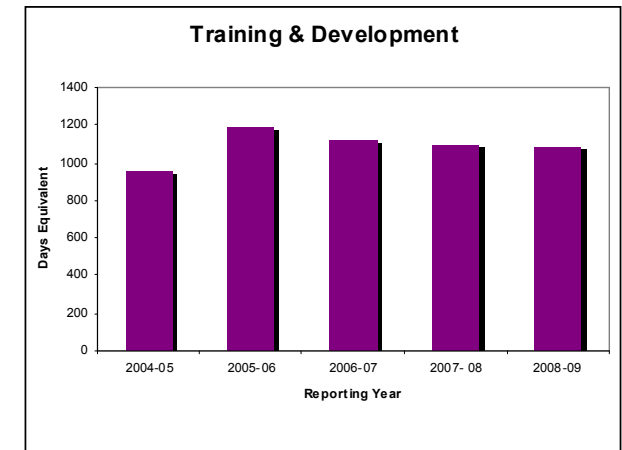
A skilled workforce is a vital component of our business. In recognising this, we continued to provide a high level of training across the business. Approximately \$2.1 million was spent by CSBP Ltd on training and development across the company, equating to 2.3 per cent of payroll costs.

Of the training Australian Vinyls conducted, 290 days were related to health and safety.

As a further commitment to the Workforce, AV reintroduced the role of Human Resources Manager.

## Future focus

CSBP's 2010 priority is to continue to develop a skilled and engaged workforce.





# Community and Stakeholders

The people important to our industry and operations are engaged, participating and supportive

## AV's Progress

Australian Vinyls maintains a strong commitment to the local community and its stakeholders.

Maintaining mutually beneficial relationships with the community in which we operate is essential in ensuring the long term sustainability of our business.

Our Environment Monitoring Team, consisting of local residents, council representatives, City West Water and EPA Victoria, continued to meet on a two monthly basis. This group agreed a new Sustainability Plan for the company, replacing and updating the previous Environment Improvement Plan.

We continued our partnership with the Western Chances Education Foundation which assists young people in the western suburbs of Melbourne to achieve their potential through the provision of scholarships and similar programs. In addition to this, the company contributed a total of more than \$4,500 in donations, including contributions by employees.

Australian Vinyls is active in industry with membership, either directly or through our parent company, of the following industry bodies:

- The Plastics and Chemicals Industries Association Inc (PACIA)
- The Vinyl Council of Australia
- The Plastic Pipe Industries Association
- The Australian Industry Group
- The Committee for Economic Development of Australia.

Australian Vinyls continues to remain active in the legislative environment, with the company nominated to represent industry on the WorkSafe Victoria Major Hazard Facility Advisory Committee and the Safe Work Australia OHS Harmonisation Temporary Advisory Group on Major Hazard Facilities. In addition to this the company is a member of the National Pollutant Inventory Industry Liaison Group.



Members of the EMT sign the 2009-2012 Sustainability Plan



# Accountability

An industry that is open, accountable and communicating progress

## AV's Progress

Australian Vinyls' Laverton North plant is a licensed Major Hazard Facility (MHF) in Victoria. Our current, five year licence expires in 2012. We also hold an EPA Victoria Waste Discharge Licence and City West Water Trade Waste Agreement. We are not aware of any non-compliance during the year with licensing or approval conditions or other requirements, other than any already discussed in this report.

We maintain an Environment Management System for our PVC operations and implement a community-agreed, three year Sustainability Plan (2009-12) identifying actions to improve company safety, health and environmental performance. The company has a Health and Safety and an Environment Policy which requires us to recognise the principle of sustainable development in developing and improving our products and processes.

Australian Vinyls has been a Signatory to the PVC industry's Product Stewardship Program since 2002 (refer to [www.vinyl.org.au](http://www.vinyl.org.au)). One of the obligations within the Program is "Open Disclosure" requiring

signatories to provide information to stakeholders about raw materials and substances used in manufacturing. We uphold this commitment.

We have published annual environmental, health & safety or sustainability reports continuously since 1998-99 and provide information on our business, our operations and our products – including health, safety and environmental aspects – on our website.

In 2008-09 the company worked toward embedding the priority areas of the PACIA Sustainability Leadership Framework (refer to [www.pacia.org.au](http://www.pacia.org.au)) into its business.

We are committed to working constructively with our stakeholders and being open in our communication about our operations and products to protect the health and wellbeing of our employees, customers and community.

If you have any feedback or comments on this report or other aspects of our operation, please contact us at [info@av.com.au](mailto:info@av.com.au) or 03 9368 4800.



**Australian Vinyls**

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