

Dentists self-regulate to reduce mercury discharges to sewer

SUSTAINABILITY COVENANT CASE STUDY

Since 2006, Ai Group has granted funding assistance for 25 sustainability and environmental projects involving 45 participating organisations.

More than \$320,000 was spent in the past two years, and just over \$600,000 has already been committed to projects in 2008/09.

Key outcomes

MERCURY LOADS TO SEWERS FROM DENTAL PRACTICES IN VICTORIA

PRIVATE DENTAL PRACTICES

TODAY'S LOADS (KG/YR) 193.4

REDUCED LOADS FOR BMP SCENARIO LOADS (KG/YR) 30.7

PUBLIC & PRIVATE PRACTICES COMBINED

TODAY'S LOADS (KG/YR) 210.4

REDUCED LOADS FOR BMP SCENARIO 32.9

TOTAL CAPITAL COSTS FOR PUBLIC & PRIVATE SECTOR FOR AMALGAM SEPARATORS: \$6.5-\$13 MILLION

\$1 million cooperative project achieves wins for water, the environment and the dental profession

An \$80,000 survey into mercury disposal practices by Victoria's dental profession has resulted in a new self-regulating commitment, along with a \$1 million program for the installation of specialised equipment to capture mercury for recycling.

The survey was commissioned in late 2006 amid growing concerns about the amount of mercury discharged to sewers from industrial, commercial and domestic premises.

Mercury is widely recognised as a potentially high environmental and health hazard and, while there was no conclusive evidence, data suggested that approximately 200kg of mercury discharged to Victoria's sewerage systems annually resulted from the placement and removal of amalgam fillings. (Amalgam contains up to 50% mercury, along with other metals.)

Regulations covering the discharge of liquid wastes from dental surgeries have not traditionally focussed on reducing mercury levels to best practice. The dental profession was keen not only to self-regulate, but to introduce best practice management (BPM) for mercury separation for recovery and reuse rather than more stringent regulation.

The Australian Industry Group (Ai Group), through its sustainability covenant with EPA Victoria, agreed to contribute \$35,000 to the survey and the Melbourne water industry, represented by South East Water,

contributed \$40,000. ADAVB contributed the final \$5000.

ADAVB's Chief Executive Officer, Garry Pearson, said the association was "indebted" to Ai Group for its assistance.

"We were greatly appreciative of the Ai Group for involvement in developing and implementing the project," he said.

The 2007 survey assessed current disposal practices for amalgam waste from dental surgeries; the amount of mercury discharged to Melbourne's sewers by dentists; options for reducing this discharge; a cost and benefit analysis for the preferred option and recommended an implementation strategy.

The survey estimated that mercury loads to sewers could be reduced by about 40% under a BMP scenario which involved 90% of Victoria's private and public dental surgeries installing amalgam separators. These devices enable the recycling of amalgam so mercury and other metals can be recovered.

"Dentists have been using coarse amalgam filters for years," Mr Pearson said. "But it was the small flakes that were shaved off when an old filling was replaced or a tooth was polished that were causing problems in the sewerage process."

Discussions with dental equipment suppliers in Victoria revealed that only about 1% – 2% cent of dental surgeries actually used amalgam separators.

Installation in 90% of Victoria's private surgeries would carry a price tag of anywhere between \$5 million and \$10 million, the survey concluded.

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Further information

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ADAVB regrouped with Ai Group, the Victorian water industry and the Environment Protection Authority Victoria (EPA) and agreement was reached to fund a \$1 million rebate program.

ADAVB launched a communication program to its members, to equipment suppliers and installers in March 2008. By July 30 2008 it had received a positive response from 500 dental practices, which was more than half of its three year target.

Mr Pearson described the 60% response after four months as "astonishing".

The program, which covers only the cost of the separator and its installation, will give each practice a flat \$1000 rebate in the first

year, or a 20% rebate if the cost is greater than \$5000. In the second and third year, the rebate level will be reassessed.

The minimum cost for purchase and straightforward installation is around \$2500, but some installations in high rise buildings and those with complex plumbing and electrical needs can cost more than \$30,000.

BPM has also ensured that all separators will filter 98%-99% of residue (the international standard is 95%).

Mr Pearson said the cooperative project was "a fantastic exemplar" for other industries and professions which could work towards a common interest with government agencies.

