

This is the second edition of a newsletter which aims to keep the Randwick and Botany communities informed about progress of the activities associated with the Orica (formerly ICI Australia) Groundwater Stage 3 Remediation Program. This newsletter has been prepared by Orica on behalf of the Community Liaison Committee (CLC) and is being distributed to Orica's industrial and residential neighbours. Publication of the newsletter coincides with the normally quarterly meetings of the CLC.

Since the last newsletter, two meetings of the CLC have been held: Meeting 6 on Friday 28 May; and Meeting 7 on Wednesday 25 August.

The community representatives suggested that the work being undertaken, especially the installation

due to be completed this year. This will prevent contaminated sediments in the drain section on Orica land flowing to Penrhyn Estuary.

The **monitoring program** has revealed the contaminated groundwater plume associated with one of the contaminants, ethylene dichloride

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Summary of CLC Meetings 6 and 7

of the **Pilot Scale Reactive Iron Barrier (PSRIB)** [see Focus on Technology], could be of interest to local media. Orica stated that *The Bulletin* may run a story in the future.

Project Manager Peter Russell provided an update on the PSRIB, installed in February 1999. Results from the first two rounds of sampling were most encouraging. Evaluation of the Pilot Scale Barrier will continue into the first half of 2000. Installation of the full scale barrier is still on track for the end of 2000, subject to the outcomes of the Pilot Scale results.

Orica reported that the contract for the **repairs to the stormwater pipes** had been let and work has commenced on site. The pipes, which drain rain water runoff from the operating site, presently also intercept contaminated groundwater and convey it to Springvale Drain. The repairs will seal the pipes and prevent the contaminated discharge from the pipes. The first step is a closed circuit TV survey of the pipes, which is underway. The repairs to the stormwater pipes are expected to be complete by October 1999.

The project involving the **realignment of Springvale Drain** was also progressing with work

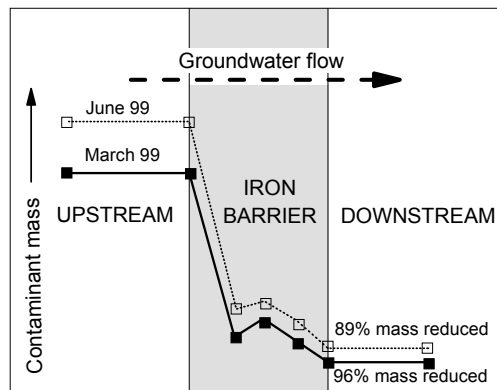
(EDC), has three components from separate sources on the Orica site. The high concentration front of the middle EDC plume has moved beneath the Nant Street Tank Farm and the northern corner of Block 2 of Southlands. Orica has installed extra monitoring wells to further define the position of the plume and to monitor any further movement.

The **Human Health Risk Assessment** has been reviewed and has been discussed with the appropriate regulatory agencies, with all agreeing that the actions taken to date and currently in progress address potential health risks. At Penrhyn Estuary, Botany Bay City Council has cleared the facilities at the old boat ramp and erected new warning signs. Orica will be entering a voluntary agreement with the EPA under the Contaminated Land Management Act, covering investigation and remediation.

Focus on Technology - Reactive Iron Barriers

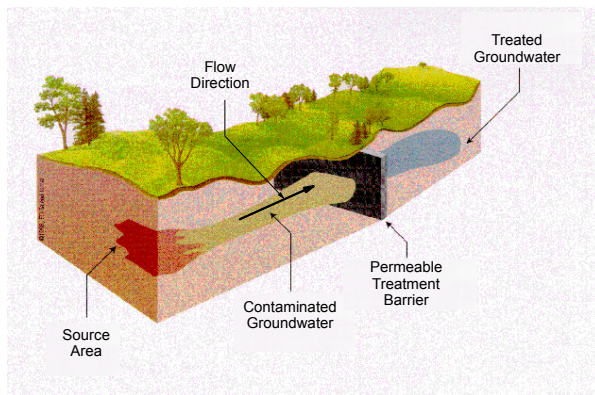
Although scientists have known for some time that chlorinated hydrocarbons (CHCs) degrade when they come into contact with iron surfaces, it was not until relatively recently that this knowledge was developed into a technique for remediating contaminated groundwater.

The man widely attributed with this development is Professor Bob Gillham of the University of



Waterloo, Ontario, Canada. With his input, EnviroMetal Technologies Inc (ETI) was incorporated to license and commercialise the technology for the University. Their first reactive iron barrier was installed in California in 1992.

Since that time approximately 75 pilot scale or full scale reactive iron barriers have been installed in the United States, United Kingdom, Germany, Denmark and now Australia. Orica's pilot scale barrier is the first in the Southern Hemisphere.

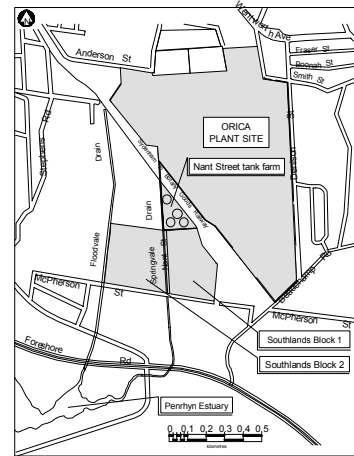


But how does it work? Put simply, a trench is dug into the soil, intercepting the contaminated groundwater plume. It is then filled with granular iron (about the size of coarse sand) which is more permeable than the surrounding soil. As the groundwater flows through the iron barrier the chlorine in the CHCs reacts with the iron and is removed from the groundwater. When all the chlorine has reacted only harmless gases and salt remain.

Meeting 8 will be held at Orica's Botany Site on Wednesday 24 November 1999, commencing at 1 pm. If you wish to enquire further about the Committee or the meetings, please contact Orica on its Community Hotline on 1800 025 138.

Historical Background

The Botany Groundwater Survey commenced with a Stage 1 'snapshot' understanding of Orica-sourced contaminants in soil, surface water and



marine biota in and around the site. This work was reported in 1990. This was followed by a Stage 2 detailed investigation of the nature and extent of the contaminants identified in Stage 1 and how they could be addressed. The Stage 2 report was released in August 1996. Both reports are available in Pagewood Library.

Stage 3 Remediation Program

A five year Remediation Plan was issued in November 1996 with the objective of reducing the contaminant load to the environment, particularly Penrhyn Estuary, by 50% in the shallow groundwater. The Plan comprises a number of planned modules.

Community Liaison Committee

The Community Liaison Committee (CLC) was formed at the start of the Survey to involve the community in the process. The Committee comprises representatives from **government** (Environment Protection Authority (EPA), Botany Bay City Council, Randwick City Council, Department of Land & Water Conservation, South Eastern Sydney Public Health Unit, National Parks & Wildlife Service, Freightcorp and Sydney Ports Corporation), **local residential groups** (BEREPA, Botany Environment Watch and BBPPC), and **industry** (Orica, Amcor Packaging and Solvay Interlox). The independent Chair for the Committee is Assoc. Prof. Ronnie Harding from UNSW Institute of Environmental Studies.

Distribution: This newsletter is distributed throughout the suburbs neighbouring the Orica Botany Site including Banksmeadow, Botany, East Botany, Pagewood, Hillsdale and Matraville