

Monitoring Program

Description

The Orica Botany Groundwater Project comprises a complex range of contaminants and environmental media. Through its consultants, Orica has undertaken extensive monitoring of soil, sediments, groundwater, surface water, air quality and biota. This is an ongoing program that will continue throughout the Orica Botany Groundwater Project.

Objectives

- To monitor conditions in the environment
- To provide data for the ongoing review of the Health Based Risk Assessment, which enables the identification of the need for further action
- To provide data for designing and implementing research and remediation modules
- To evaluate the impacts of research and remediation modules
- To measure success in remediation effectiveness
- To measure against key project milestones and goals

Technology

There are four principal monitoring modules, each requiring specialist sampling techniques:

- **Marine biota** monitoring entails the collection of targeted fish species at strategic locations within Botany Bay using gill nets; according to their size and likely mode of human consumption, they are analysed for semi-volatile chlorinated hydrocarbons (CHCs) and mercury on whole-fish or muscle-tissue basis;
- **Air emissions** from surface soil are measured using an emissions flux hood; samples are collected in multisorbant tubes and analysed for volatile CHCs;
- **Surface water** samples are collected from strategic locations in Springvale and Floodvale Drains, and in Penrhyn Estuary at high and low tides; the principal analytes are volatile CHCs;
- **Shallow and deep groundwater** samples are collected from strategically located long-screened monitoring wells and multilevel piezometers (which provide discrete samples at known depths); again, the main analytes are volatile CHCs.

Resources

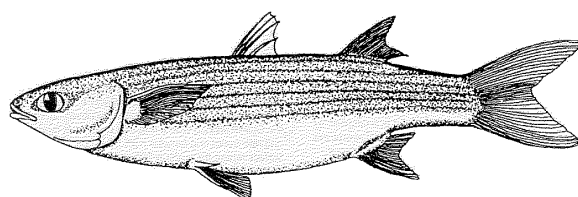
Project management: Orica
Consultants: URS Australia
The Ecology Lab (for marine biota)

Measures

- Identification of emerging contaminant trends and consequent human health risks
- Collection of accurate and useful data for designing and implementing remediation
- Evaluation of remediation against agreed objectives

Timing

Ongoing.
Frequency varies for each monitoring module, and is revised according to project requirements.



Sea mullet – one of the target fish for marine biota monitoring