



## **Principles of Wastewater Microbiology Course**

**Wednesday 14<sup>th</sup> and Thursday 15<sup>th</sup> July, 2010**

### **Course Outline**

The aim of this course is to teach the microbiological principles that underpin biological wastewater treatment processes. Learn how carbon is removed in biological wastewater treatment systems.

- Who is responsible ?
- How do they do it ?
- How do we control them ?
- Who are the troublemakers ?

Problems such as bulking and foaming will be discussed, and practical control strategies presented.

### **Day 1 – Wednesday 14<sup>th</sup> July**

#### **10am to 5pm**

##### Principles

- What is microbiology and which organisms are microbes ?
- What roles do microorganisms play in wastewater treatment ?
- How do they obtain energy and grow ?
- What is the difference between aerobic and anaerobic organisms ?
- What is the cell genome and what does it do ?

##### Microbiology of activated sludge

- Which organisms are found in activated sludge plants ?
- What do they do there ?
- Methods used to study microorganisms
- How do we study activated sludge microbiology ?
- Conventional and advanced methods

##### Problems that microbes cause in activated sludge

- Which microbes cause bulking and how are they controlled ?
- Which microbes cause foaming and how are they controlled ?
- What is a selector and why does it work ?

## **Day 2 – Thursday 15<sup>th</sup> July**

### **9am to 4 pm**

#### Microscopy

- Learn how to identify microbes using a microscope.
- Hands on use of microscopic techniques.
- Analyse local activated sludge samples.

Workshop on use of microscopy to troubleshoot plant operation.

#### PRESENTERS:

##### **Bob Seviour**

Prof. Bob Seviour has an international reputation for his work on biological phosphorus removal and developing molecular methods for identifying the filamentous bacteria in activated sludge systems. He has published more than 100 papers on activated sludge microbiology, and is the co-editor of the book "Microbiology of Activated Sludge".

Bob is well recognized as a contributor to local and international activated sludge training courses as well as one of the creators of the Latrobe University Biotechnology Research Centre trademark Filament ID posters.

##### **Beth Seviour**

Ms Beth Seviour is recognized as one of the world's leading practitioners in the identification of the filamentous bacteria causing bulking and foaming in activated sludge plants, and has published extensively on these organisms.

Beth has carried out filament ID and troubleshooting consulting for hundreds of treatment plants individually and as part of major projects over the past 20 years, as well as conducting seminars and workshops for wastewater professionals.

#### LOCATION:

The University of Adelaide, Waite Campus, Adelaide, South Australia

See Attached Map

Meeting Place – 10am, Wednesday 14<sup>th</sup> July at Lirra Lirra Café, McLeod House.

#### COST:

\$600 plus GST per person.

**NOTE: Please bring your own white lab coat!**



**PRINCIPAL OCCUPIERS**

- ADELAIDE UNIVERSITY
- C.S.I.R.O.
- SOUTH AUSTRALIAN RESEARCH & DEVELOPMENT INSTITUTE (SARDI) & PRIMARY INDUSTRIES RESOURCES SA
- THE AUSTRALIAN WINE RESEARCH INSTITUTE
- DEPT OF WATER, LAND & BIODIVERSITY CONSERVATION

**SECURITY  
PH: 8303 7200**

Meet at Lirra-Lirra Cafe, McLeod House



**THE UNIVERSITY OF ADELAIDE AUSTRALIA**

Waite Campus

**CAMPUS LOCATION MAP**  
7.6KM TO CBD

- PRINCIPAL ENTRANCES
- MAJOR CAR PARKING
- ACCESSIBLE TOILETS
- DISABLED CAR PARKS
- CAR PARKING
- GLASSHOUSES
- WAITE ARBORETUM
- INFORMATION POINTS/ENQUIRIES
- EATING FACILITIES
- SECURITY CALL POINT