

Consents On-site Wastewater Training – Where are we at? Soil Wastewater

Jane Petch

Hamish Lowe

Brett Marias







Introduction – Where?





Unit Standards



25124:	Demonstrate knowledge of domestic wastewater treatment processes
25125:	Describe domestic wastewater land application systems, and their selection
25126:	Demonstrate knowledge of hydraulics and pump types and fittings for OSW systems
25127:	Carry out a site and soil evaluation for an OSW system
25128:	Design an OSW system, and describe regulatory requirements
25129:	Describe package treatment, and wastewater land application systems







Course Material – Evolved to...



Course with 3 modules Course with 2 modules



Course Material – Current M1



Day 1

- O1 Definitions and History
- O2 Characterisation of Wastewater
- O3 Details of Each System
- O4 Secondary Treatment Processes
- O5 Disinfection
- O6 Advanced Treatment/Nutrient Reduction
- O7 Alternative Treatment Systems
- O8 Soil Treatment Processes
- O9- Solids disposal
- O10 Sampling

Day 2

- Session 1 Introduction
- Session 2 Understanding the Receiving Environment and Soils
- Session 3 Site and Soil
- Session 4 Evaluation Exercise
- Session 5 OSET Trials and Resource Information

Day 3

- Session 6 Legislation
- Session 7 Introduction to Design
- Session 8 Discharge Options
- Session 9 System Selection
- Session 10 System Selection Exercise
- Session 11 Evaluation and Design Reporting
- Session 12 Risk Management

Course Material – Current M2

Day 1

- O1 Physical Properties of Wastewater
- O2 Fluid Statics
- O3 Fluids in Motion
- O4 Flows in Pipes
- O5 Pipework Design and Installation
- 06 Pumps
- S1 Introduction
- S2 Recap of Module 1
- S3 Local Regulations and Problems

Day 2

- Session 4 Receiving Environment
- Session 5 Soil Properties
- Session 6 Soil Texture
- Session 7 Soil Texture Analysis
- Session 8 Local Features

Day 3

OPUS Environmental

mpact

- Session 9 Site and Soil Evaluation
- Session 10 Treatment and Discharge Options
- Session 11 System Design and Reporting
- Session 12 Design Calcs and Variations
- Session 13 Assessment

Recognition of Prior Learning

OPUS L W E Environmental I m p a c t



Attendance – Courses





Attendee Background





Location of Course Vs Attendees Location





Course Numbers v Course Location





Limitations to US



Unit Standards refer to AS/NZS: 1547:2000 instead of AS/NZS:1547:2012

Unit Standards have some impractical expectations

Assessments are expected to be completed in accordance with the AS/NZS: 1547:2000. However many of the course attendees are from the Auckland region and would use TP58

Not enough emphasis on identification of receiving environment

Out of date with current industry and onsite wastewater management

Limitations to US



Technical Complexity

• Required to address technical engineering solutions and methodology

Regulations and receiving environment

Heavily systems and engineering focused

Demonstrating competence

• Difficult to assess competence

Starting point

• US are complex in places and the information that is expected to be covered would be over long period of time

Cost of Development Changes to Course Material



Development of the Training programme incurs costs					
Resource Material Preparation	Presentation material preparation	Delivery of the courses	Assessments	Administration	

Costs involved in running the course



BoPRC and Auckland Council provided an initial seed fund of \$20,000

Opus and LEI contributed additional funding

LEI have written off \$35,000 to date

• Due to material preparation, discussion with industry and councils to gain additional interest

Costs involved in running the course continued



LEI and Opus have made changes course-to-course

- Changes in locality
- To provide most up to date information
- Variance in participants knowledge

Current course fees \$1,500/attendee for each module

- Includes delivery/assessment
- Dependency on numbers, sometimes a shortfall
- LEI writes off typically \$1,000/module on top of a reduced hourly rate

Future course numbers





Ways to get more numbers on course





Conclusion



Range of people attend the course with the majority being consulting engineers, council staff, drainlayers and designers

Majority of attendees from the Auckland and BOP regions driven by the need to have SQEPs Changes are needed to the US, these need to reflect the updates to standards and guidelines Greater emphasis placed on regulatory requirements and identifying the receiving environment

High costs incurred to trainers beyond budget. To keep the course viable need support from RC's, where there region requires SQEPs in onsite wastewater

Brainstorm Session



How could we change the course delivery?

How can we reduce the costs of course preparation and delivery?

What alternatives to the NZQA US can be provided to assess of the course material?