

SWANS-SIG – Small Wastewater and Natural Systems Special Interest Group

NEWSLETTER No. 13 – AUGUST 2010

EDITORIAL FEATURE – OSET NTP FUNDING

The On-site Effluent Treatment National Testing Programme (OSET NTP) administered by SWANS-SIG at the Rotorua OSET Testing Facility (TestFac) has just completed the second 9 month Trial under its oversight. This is Trial 5 in the series that began with Trials 1 to 3 under Environment Bay of Plenty management. The OSET NTP involves a three strand approach to testing and performance evaluation of household size domestic on-site wastewater treatment units. Strand 1 comprises a formal effluent quality testing programme under controlled conditions at the TestFac located in the grounds of the Rotorua City wastewater treatment plant. Each treatment unit is set up on a ground level test platform and fed screened raw wastewater at 1,000L/day under simulated household discharge conditions. Units are insulated against the cold winter conditions inherent in Rotorua's climate so as to reflect the buried conditions in field installations. With sampling at 6-day intervals from November through to July both summer warm and winter cold operational conditions are covered. In addition to detailed reporting on test results to the individual manufacturers and the Funding Partners supporting the OSET NTP, a Strand 1 performance certificate is published on the Water NZ SWANS website pages. Strand 1 effectively benchmarks treatment performance under controlled conditions against a 6 parameter set of effluent quality criteria.

Strand 2 involves field testing over a 12 month period for a cohort of 10 units which have been trialed under Strand 1. The cohort units are randomly selected from throughout all areas of the country where the specific model of treatment unit has been installed and operating for around 12 months. The test results are then aggregated to give a field performance rating. Strand 3 involves assessment of product integrity in terms of hardware and control systems.

Three questions keep coming forward to SWANS-SIG re the OSET NTP.

- Why is not testing made mandatory for all of the 30 plus treatment unit manufacturer/suppliers in NZ (only 12 companies have trialed systems at the Rotorua TestFac over five years of trails)?
- Why are not all councils supporting the trials as Funding Partners?
- Why are not Strands 2 and 3 of the OSET NTP being implemented now when it is field testing that really tells how well systems are performing, and product integrity testing that will sort out the poorly manufactured systems that make the news reports of system failures?

First, the OSET NTP trials are a “bottom-up-approach” to lifting the standards of on-site wastewater treatment units in NZ, as no central or local government controls operate in this area. Admittedly the Ministry for the Environment has a strong interest in seeing good performance from on-site wastewater systems in terms of the potential impacts on health and environment from poorly performing systems. Meanwhile professionals in the on-site wastewater industry are driving the testing process.

Second, funding support for management of the OSET NTP is voluntary. Manufacturers/suppliers currently pay \$20,000 to cover the operations and testing process at the TestFac, with council Funding Partners covering the costs associated with management of the programme and the
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evaluation and reporting processes. Although all councils have been invited to participate in supporting the programme, clearly many have other priorities.

Third, Funding Partner contributions are currently only sufficient to cover Strand 1 testing. The initial setting up of OSET NTP in 2008 was funded by contributions from Establishment Funding Partners comprising:

- Ministry for the Environment
- Water Services Managers Group, Water New Zealand
- Environment Bay of Plenty
- Environment Waikato
- Rotorua District Council
- Gisborne District Council
- Horizons Manawatu

Following an approach to all local government agencies throughout NZ in June, current funding partners comprise 12 councils as follows:

- Environment Bay of Plenty
- Rotorua District Council
- Environment Waikato
- Gisborne District Council
- Marlborough District Council
- Auckland Regional Council
- Hawke's Bay Regional Council
- Franklin District Council
- Ruapehu District Council
- Northland Regional Council
- Tasman District Council
- Horizons Regional Council

To progress toward Strands 2 and 3 requires the support of at least another 8 to 10 Funding Partner councils. The contributions being made in support of the OSET NTP are quite modest at:

- Regional Council \$5,000
- Unitary Council \$3,000
- District Council \$1,500

Overall Environment Bay of Plenty (EBOP) and Rotorua District Council (RDC) are carrying the major load in financial support for the NTP having invested tens of \$1,000s over the five years – RDC in a complete rebuild of the TestFac in 2007 as well as substantial staff commitment to operations; EBOP in staff support of data management and reporting. In addition to receiving the individual test reports for each system completing the trials, Funding Partners receive an exclusive comparative results review for each trial (in hard copy so as to protect their investment in the trials). This “for council eyes only” review will aid the Funding Partner councils to fine tune their regulatory oversight of treatment units in terms of protecting the environment (regional and unitary councils) and issuing building consents (unitary and district councils).

If enough council Funding Partners can be recruited to add to the 12 listed above then the OSET NTP will be able to move ahead in implementing the full Strands 1 to 3 testing programme. If you are a council officer reading this and cannot see your council listed above, maybe you might enquire as to why the council does not appear to be supporting the programme and thereby receiving the benefits of the reports available to Funding Partners.

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NOTES from the CHAIR

Hi all – very brief notes this time.

I attended the Water NZ board meeting in February to present an update of where the SIG is at and to present our Draft Work Plan for 2010. It appeared to be well received.

There is a lot happening in the water sector at the moment; with Land and Water Forum, ECan governance being given to Commissioners, etc. These are all at a higher and larger level than on-site, small community and natural wastewater systems. However, it all trickles down.

Please try and attend the Water NZ Conference in Christchurch in September. There are some interesting papers in the SWANS stream along the lines that members have been requesting, such as more “natural systems” information. We also wait with interest for the paper on the safe separation distances between septic tanks and bores.

Regards

Rob Potts

SWANS-SIG WEB FORUM

SWANS-SIG joined the Water NZ Web Forum last October with an introductory welcome from SWANS-SIG Liaison, Susannah Peddie. Susy set out the aim of the forum as “information sharing and discussion of topics particularly related to Small Wastewater and Natural Systems (SWANS)”. Instructions on registration and use of the forum are provided in her welcome statement. To access the forum web pages either click on the link on the Water NZ homepage www.waternz.org.nz or go direct to <http://forum.waternz.org.nz>.

Anyone can read the forum posts and responses, but to participate as an “author” to add a topic or ask a question, and to get involved in replying and responding to posted topics, requires registration with a “pen name” and a password. From then on you have access via a log-in box to add a new topic or post a reply to an existing topic.

Three topics currently occupy the SWANS forum. The first is on “on-site domestic wastewater treatment units” and was posted in October last year to seek feedback on types and models of treatment units together with names of suppliers and/or manufacturers of such systems. The information was then used to assist preparation of a manufactures/suppliers directory for NZ which was subsequently published within the SWANS pages of the Water NZ web-site on 18 January this year. The final forum post on this topic provided access to a direct link to the directory. [It should be noted that the 18th January issue of the directory has been updated as of 6th August – go to <http://waternz.org.nz/swans.html>.]

The other two topic areas are still actively open for discussion. The “on-site wastewater systems failure” topic was posted early June in response to quite a bit of activity in the news media around septic tank failures and where NZ was going in dealing with such issues. The posting invited comment on the main reasons for system failures and invited comments and case study information. Three areas related to causes of failure were listed [treatment system inadequacies; disposal (land application system) deficiencies; owner/user neglect].

The first response to the “failures” topic was not posted on the forum pages but directly e-mailed to the topic author. It was from a local authority officer who stated that for obvious reasons the council would not be posting a detailed response on an open web-site. However, for the particular council area they had experienced failures under all the headings posted, and are having to deal

with them on a day to day basis. The question of eventual failure of a majority of on-site systems, and when, why and for how long, would make a good doctoral study, and that could be accomplished by using information from only one council area!

The second response on “failures” came in very recently in the form of a case study which confirms that if designers are not engaged to follow through on their design work by being given installation and commissioning responsibility, then systems are set up to potentially fail.

The latest topic opened up for discussion (5 August, from “Kenny” – no, not the Australian septic tank pumpout contractor in the highly successful mockumentary movie of 2008) related to mandatory testing for all on-site domestic wastewater treatment units in NZ. “Kenny” is concerned that there are some pretty poor attempts at building AWWTS (advanced wastewater treatment systems) in NZ, but “we let it happen and it tarnishes the reputations of those with better quality products that have been tested and passed” under the OSET NTP (on-site effluent treatment national testing programme) trials. “Kenny” referred to a specific case in Northland which featured on TV3 Campbell Live 14 June where an AWWTS unit (referred in the programme as a septic tank) was reported as “broken” to the extent that the on-site wastewater system was unserviceable and the owners had to move out of their house. What “Kenny” is arguing for is full council support for the OSET NTP trials in Rotorua, and that all AWWTS systems in NZ be required to participate.

Given the short time the SWANS web forum has been running, and the small number of topics (three to date) it is interesting to note the number of views for each topic:

- On-site Domestic Wastewater Treatment Units (opened 14th October 2009 – 2,360 views to 7th August).
- On-site Wastewater System Failures (opened 4th June 2010 – 455 views to 7th August).
- Mandatory OSET testing for ALL AWWTS in NZ (opened 3rd August 2010 – 57 views to 7th August)

MEDIA REPORTS and SEPTIC TANK SYSTEMS

Septic tank systems have been spotlighted in news reports on TV and radio over recent months starting last year (May 30th) with a report on TV One entitled “new standards for septic tanks” re the proposed MfE WOF inspection scheme for on-site wastewater systems. Since then:

- publicity has been given to the problem of leaks from septic tank systems on small lots at Little Waihi in the Bay of Plenty (TV reports, 29th May) leading to owners being told they would have to leave their waterside properties;
- a major Campbell Live story broke on TV 3 (13 June) re a Northland couple in a relatively new home (3 years old) having to cope with a “cracked septic tank”; and
- Radio NZ National aired an item on looking after your septic system on the “This Way Up” programme (26th June).

The Campbell Live story is both a “bad news” and a “good news” story. For the “bad news” part of the story go to <http://www.3news.co.nz/Cracked-septic-tank-causing-a-stink-between-family-and-Sovereign/tabid/209/articleID/161609/Default.aspx> to view the full TV interview with homeowners Matthew and Sacha Hobman-Williams.

It highlights a problem related to oversight of on-site wastewater treatment plant manufacture, installation and operation. The company involved in this case was Pacific Waste Systems Ltd, and the product was the AquaClear™ aerated wastewater treatment plant claimed to be a design which evolved in the USA over a 15 year period, with some 100,000 systems in operation. No trace of either AquaClear, Pacific Wastes or the Director of Pacific wastes can be found anywhere on the internet or in phone directories – commentators on this matter have indicated the promoters of this system have “done a runner”, which on the face of it casts a bad light on the

whole of the on-site wastewater industry. Not only that, Pacific Waste claim in their reference materials to be a member of NZWWA.

However, the latest media report on this issue is the “good news” part. The Northern Advocate covers the solving of the Hobman-Williams predicament as follows:

Family's delight as firms rally to fix wastewater woes by Peter de Graaf, 29th June 2010

For the past five weeks the Hobman-Williams family has been taking number ones in the back yard. For showers or number twos they have to visit friends or family. Water from the dishes or the laundry is tipped on to the garden. "It's like camping, but with a \$250,000 mortgage," quipped Matt Hobman.

Jokes aside, the family - Matt, wife Sacha Williams and kids Astyn, 3, and Kingston, 7 months - has been all but homeless since their on-site wastewater treatment system failed five weeks ago. Matt, a building consultant, has been staying with friends as often as he can; Sacha, a part-time teacher, and the kids have been regular guests at her parents' place in Kaitaia; and when they've been home, they've had to improvise. When the company that provided their home and wastewater system three years ago said it wasn't to blame, that left the couple to somehow find \$20,000 for a new treatment system - or be forced to move out altogether once their home at Waimate North, near Kerikeri, was declared insanitary.

But the family's fortunes changed dramatically after their plight screened on TV3's Campbell Live on Friday night. By the time you read this - thanks to the generosity of a plastics firm and local contractors - they'll be able to flush and shower as much as they please. Phil Brenchley, of the Ashburton-based company RX Plastics, was having a beer and watching telly with his workmates after a day at Fieldays in Hamilton when the Campbell Live piece screened. "The story really caught my eye. I said, 'We've got to help these people' - so we called the boss and he said, 'Go for it!'"

Mr Brenchley left his Napier home on Sunday night, picked up a new AirTech 9000 advanced wastewater treatment system from the Hamilton factory at 5am yesterday, and by lunchtime it was in the ground at the Hobman-Williams' home. It was expected to be up and running by this morning at the latest, at no cost to the family. Helping install the new system yesterday was a small army of Bay of Islands contractors, also working without charge. Among them were Granada Contracting, Andrew Younger Contracting and Haruru Falls Electrical. "I don't like to see young families in a bind. When people are trying to make a start, you help them out," Granada's Dave Miller said. Mr Hobman said: "Words can't express how grateful we are.

Normally the system plus installation would have cost more than \$20,000. Far North District Council spokeswoman Alison Lees said the original system's failure was most likely due to tank fracture, which would mean it had failed the 15-year durability requirement in the Building Act.

PAPERS for SWANS-SIG STREAM at WATER NZ ANNUAL CONFERENCE,
Wednesday 22 September 2010

The SWANS-SIG papers at conference include eight papers in three sessions on the opening day of conference, Wednesday 22 September. Topics are as follows:

- Village-Scale Wetland Wastewater Treatment on the Coral Coast of Fiji – the Wai Votua Project [Chris Tanner, NIWA]
- Floating Wetland – A Different Way to Treat Your Wastewater [Stephen Finnemore, Harrison Grierson]
- Pure by Plants Botanical Wastewater Treatment Systems [Uli Rambeck]
- Time is the Essence to a Coliform Reduced Presence [Bridget O’Dempsey, CH2M Beca]
- Keeping Waters Apart – New Separation Distance Guidelines for Septic Tanks and Bores [Chris Nokes, Institute of Environmental Science and Research]

- Effects of Composting processes on Microbial Indicators [Geeta Hariharaputra, Watercare Services]
- The South Australian Approach to Rural Township Community Wastewater Management [Martin Loipersberger, HDS Australia]
- A Successful Solution for the Discharge of Construction Dewatering Water at the University of Canterbury [Hilary Lough, Pattle Delamore Partners]

Session 1 commences at 11:00am after the conference official opening, keynote address, and morning tea.
