

Wastewater treatment

Guidelines to the use of Web-based wastewater risk abatement tools

The Water Research Commission (WRC) has launched a new set of guides on using its Wastewater Risk Abatement (W₂RAP) tools.

Background

South Africa needs effective and efficient systems for providing water services if it is to rise above current challenges and provide high quality services to its people. The Department of Water and Sanitation's Green Drop Certification programme follows a risk-assessment based regulatory approach, and the Wastewater Risk Abatement Plan (W₂RAP) is the primary tool with which wastewater services are assessed and monitored.

What is wastewater risk abatement planning?

Wastewater risk abatement planning is a systematic process that aims to consistently ensure acceptable wastewater quality that does not exceed the numerical limits in wastewater treatment works licences/permits by implementing an integrated risk management plan from wastewater collection, through to wastewater treatment, and including final effluent discharge into the environment.

Once the risk has been identified, control measures and corrective actions can be put into place to mitigate these risks. The process also needs to identify systems by which these measures are implemented and monitored. Management plans describing actions taken during normal operation or incident conditions and documenting the system assessment (including upgrade and improvement), monitoring and communication plans, should be included.

Key components of a wastewater risk abatement plan are:

- System assessment – determine whether the wastewater system can deliver effluent of a quality that meets health-based and environmental targets. This should be undertaken for both current and planned new systems.
- Identifying control measures – conduct a risk assessment to collectively control identified risks and hazardous events and ensure that health-based and environmental targets are met. For each control measure identified, an appropriate means of operational monitoring should be defined.
- Management plans and risk management – to develop plans describing actions to be taken during normal operation or incident conditions and documenting the system assessment (including upgrade and improvement), monitoring and communication plans and supporting programmes.

Using W₂RAP

A W₂RAP cannot be completed as a desktop based exercise. It must involve site visits to confirm the knowledge, information and schematics available to the water service institutions (WSI). Site visits need to include inputs from those who work at the sites and/or within catchment (from the wastewater influent till the disposal of the sludge) and have detailed local knowledge.

The WSI should take the lead in the wastewater risk abatement planning development but it is advised not to do this in isolation.

When using this tool, and in particular when conducting risk assessments, it is important that the same risk rating methodology be used through the WSI (i.e. all systems within that WSI are assessed using the same tool/risk rating methodology).

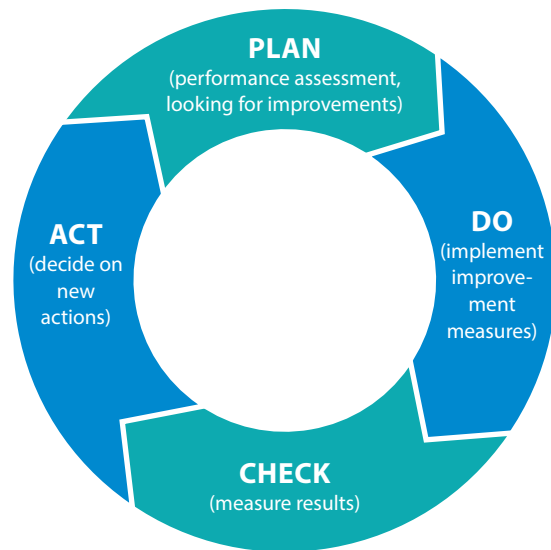
This tool contains the following:

- Evaluation tables
- Risk assessment tables
- Summary report of your top 15 identified risks
- Control measures for these risks
- Residual risk profile for these risks
- Implementation plan (short, medium and long term)
- Management commitment and sign off.

During this project four tools were developed, namely, the Web-based W₂RAP tool, Web-based W₂RAP status checklist tool, spreadsheet-based W₂RAP tool and spreadsheet-based W₂RAP status checklist tool.

The Web-based tools can be accessed at www.riskq.co.za

The objective of the accompanying guideline document is to briefly introduce wastewater risk abatement planning, highlight key steps to be considered when developing such a plan and to provide step-by-step guidance as to how to use the W₂RAP tools.



Further reading:

To order the report, *Guidelines on Using the Web-enabled and Supportive Spreadsheet-based Wastewater Risk Abatement Planning (W₂RAP) Tools* (**Report No. 2142/1/14**) and/or the *W₂RAP template* (**Report No. TT 624/14**) contact Publications at Tel: (012) 330-0340, Email: orders@wrc.org.za or Visit: www.wrc.org.za to download a free copy.