



## Form: Project initiation – Update to Good Practice Guide

### **Title**

Update the 'Good Practice Guide to the Operation of Drinking Water Supply Systems for the Management of Microbial Risk' (GPG), WRA Final Report Project 1074, ISBN 978-1-921732-27-0).

### **Focus Area**

Updating the GPG will improve Operational (Service) Risk Reduction and Productivity (Focus Area 9).

### **What is the problem?**

The GPG, originally published in October 2015, has been utilised by several water authorities over more than 70 water supply systems that we know of. It has developed into an evaluation and benchmarking tool and is being utilised to set upgrade priorities and budgets. In these processes areas for improvement have been identified to make it a more refined benchmarking resource and provide an improved tool for water authorities to ensure that microbial risks are successfully managed and consumers' safety secured.

The GPG also has scope to make the content more accessible and user friendly by improving clarity of definitions and removing ambiguity over assessments of "partial compliance". An easy to use template has also been requested.

### **Background**

The GPG's main purpose is to provide the senior managers and operational staff of drinking water utilities with a concise reference document on the requirements for optimising the processes that are used to produce drinking water that is safe from microbial contamination. The GPG is like registering a car; if it passes assessment then it is capable, robust and roadworthy! Theoretically a fully compliant WTP is going to be able to produce good water. Our assessments to date have actually found that poor, regional, older WTPs are as low as 35 % compliant, whereas few of even the better WTPs achieve more than 85 % compliance. They all need work and the GPG focuses where this is best directed, by generating a set of targets and tasks to be achieved.

The GPG references the myriad of guidelines and frameworks available and consolidates the information contained therein together with current industry good practice to provide targets (both numerical and observational), which, if implemented, will achieve a reduction in microbial risk thus helping to ensure the production of microbially-safe drinking water.

Assessing a WTP against the GPG targets produces an objective score that allows for it to be benchmarked against industry best practice and other facilities, and identifies where improvements can be achieved. As its use spreads, the GPG is proving to be a useful tool for evaluating systems and in prioritising where best to spend on projects to achieve quantifiable reductions in microbial risk.

City Water Technology (CWT) and Hydrological's Peter Mosse developed the initial draft of the original GPG which was then distributed amongst industry stakeholders for peer review and input. Following incorporation of the stakeholder feedback, a final version was released in October 2015.

In the years following its publication and adoption by the water treatment industry, further feedback on the GPG and how it's implemented indicate that some revisions could be made that would make it more user friendly as well as filling in technologies that were overlooked in the first run. The addition of auditing templates would also make assessments uniform and provide objective benchmarked evidence of where risks can be reduced.

### **What is the desired outcome?**

It is envisaged that the project will deliver a revised version of the GPG to include:

- Update of the existing content to reflect any changes in guidelines or practice, and the addition of any water treatment process technologies that were omitted from the original version or subsequently brought to market;
- Refining and improving accessibility to make it a more user-friendly resource; and
- Development of auditing tools and templates for inclusion as an addendum:
  - CWT has created internal GPG templates for assessing compliance which could be further developed upon to produce a template for wider adoption by the industry.
  - Potential for development of a (mobile/tablet) software application that can be used to assist in conducting audits and measuring compliance.

### **Why would this idea be of benefit to the water industry?**

Assessing the compliance of water supply systems against safety guidelines and industry good practice needs to be done in a uniform and objective manner. By comparing a WTP against the recommendations contained within the GPG, a benchmark score is able to be ascribed that quantifies/measures/ranks its compliance against both other facilities and a minimal risk ideal. Problematic areas are thus identified and actions to remedy the deficiencies can then be developed. If the process is followed through on, the end result is a quantifiable decrease in microbial risk posed to consumers.

### **How would the work/project be delivered?**

Incorporating our own experiences of implementing the GPGs recommendations and auditing templates developed as well as feedback garnered from discussions with industry received since the GPG's publication, the updates/revisions and development of templates will be completed by CWT before selected stakeholders are invited to review and offer feedback. As wider input into the GPG's content and envisioned implementation were already taken into consideration during the original GPG's development, in order to make the update process an efficient and cost-effective process which avoids introducing undue complexity that would compromise user-friendliness, document review will be limited to a Technical Advisory Group comprised of the members below and reflecting the GPG's application nationwide:

- expert water treatment specialists who have demonstrated hands-on experience with managing water treatment processes in Australian and New Zealand;
- WaterRA Regulatory Advisory Committee; and
- WSAA.

Breaking the scope into deliverable tasks, the following are proposed:

1. Update of content to cover omitted technologies;
2. Redefine assessment measures to avoid ambiguity surrounding "partial" compliance;
3. Refine the columns "*Frequency and Measure of Assessment*" and "*Required Result*" to improve clarity;
4. Refine and further develop audit templates to streamline and standardise the assessment process (to be included as an addendum to the revised GPG); and
5. Coordinate peer review and incorporating feedback/input.

Based on the above tasks, estimated costs to deliver the updates GPG are expected to be approximately \$30k ex GST.

A possible extension is to provide a template with guidance notes and automatic assessment for use on an ipad would add about \$15k. Turning this into an iphone or android app would be a next step – uncosted.

### **Is there wider support for the project idea?**

Implementing the GPG and its recommendations is gaining wider traction within the water treatment industry. It is recognised as a valuable resource to guide audits and allow for the benchmarking of WTPs against both other facilities and a minimal risk ideal so that microbial risks to public health can be minimised and capital works prioritised.

The proposed updates will make the GPG a more accessible, user-friendly resource which will further encourage its adoption and implementation to a wider audience. This will be especially welcomed by smaller water supply authorities with limited resources and who would otherwise lack the technical knowledge required to identify and mitigate microbial risks to their potable water supply. Several organisations have taken an interest in this.

**List any relevant references**

- *Good Practice Guide to the Operation of Drinking Water Supply Systems for the Management of Microbial Risk* (WRA Final Report Project 1074, ISBN 978-1-921732-27-0).