Final Water Resources Management Plan 2024

Appendix 1B - Drinking Water Safety Plan Risk Assessment 2022

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1 INTRODUCTION

The statements below are made in the context of DWSP risk, not project risk.

A standard Drinking Water Safety Plan (DWSP) risk assessment looks at risks that are likely to impact consumers within the current and next Asset Management Periods (AMPs), with a maximum view extending to 25 years, if this is a relevant time period. The hazards assessed are; the risk to insufficient supply and, Drinking Water Inspectorate (DWI) reportable parameters.

The Price Review 2024 (PR24) takes into account the next AMP or 2 AMP requirements linked mainly to DWI parameter hazards. The DWSP team provides the Price Review (PR) process data on which to base decisions about asset and non-asset-based projects for risk mitigation. These risks will then be offered mitigation if they are found to be intolerable in accordance with the company risk strategy. Risks put forward in PR24 will then be detailed in the response to DWI to confirm they are needed as part of the Price Review.

The sufficiency of supply risks are dealt with via the Water Resources Management Plan (WRMP). This is outside of the PR cycle. The proximity of certain risks is often beyond the PR medium term view and these risks are dealt with in the scope of the WRMP. Whilst the WRMP can look at alternative sources for ones that are currently presenting high risk for DWI parameter hazards, they often focus on the sufficiency of supply hazard looking from 0 - 5+ AMPs ahead.

There is a degree of overlap between PR and WRMP processes, but in the simplistic view of the DWSP:

- PR24 -resolves medium term sufficiency of supply & DWI parameter hazard risks.
- WRMP - resolves long term sufficiency of supply risks.

The DWSP reports on a monthly and annual basis to DWI for Portsmouth Water and looks at the risk of there being sufficient supply of good quality water. The DWSP works to a documented methodology as stated to DWI. This is under constant review and is updated on a regular basis.

When the DWSP team becomes aware of any risks to sufficiency of supply they are included in the next round of catchment or abstraction audits - currently planned for Jan/Feb each year.

The WRMP Options below have been created by the WRMP team because of the 2 to 5 AMP predictions of water supply in the South East based on work with the EA on changes to the extraction permits along with estimations of the effect on climate change. This work was not carried out by the DWSP team but will be included in the next round of DWSP abstraction audits. Therefore the sufficiency of supply hazard for all WRMP projects will be High Risk. according to the DWSP scoring mechanism. These risks can then be used in defining the need for the project with the outcome of maintaining sufficient quality of DWI quality water.

To mitigate these risks a series of control measures have been proposed in the WRMP. The information provided in the Atkins packs indicate that all of them will reduce the risk of sufficiency of supply to a tolerable level based on current knowledge. Once these projects are completed the sufficiency of supply risk will be reduced to low risk. This assumes the options will be delivered as stated and there are no new factors to consider. Since the DWI risk maturity category for these projects will be E or D it must be noted that once incorporated into the DWSP these risks will increase the Portsmouth Water Risk Assessment Risk Index (RARI) score significantly. This is a metric used by DWI to look at risk levels on a normalised basis across all companies.

Southern Water also has a significant DWSP risk in the quantity of water available for supply in their Hampshire and IOW areas. To mitigate this the control measure they are proposing is to use the Havant Thicket impounding reservoir as a new source of supply. This will reduce the risk to a tolerable level for the time frame expressed in their WRMP.

DWI parameter risks are all as stated in the current DWSP for the sites supplying the WRMP options with the exception of the Havant Thicket. This is a new source and cannot be fully assessed until it is operational. The sources of supply are assumed to be the feed from Source B Springs and the SRN Works A Recycled water. DWI parameter risk from Source B springs are passed to the storage facility of the impounding reservoir - cryptosporidium being the most significant risk at abstraction. Because the Havant Thicket is an open water impounding reservoir this risk will be high as it enters the treatment works. The Source B2 sources are also occasionally turbid but this will be considered low risk as it feeds into an open water impounding reservoir. Given the acceptance criteria specified for the recycled water from SRN Works A there should be no parameter causing concern so long as the treatment process is fully operational. The risk of operating the plant has not been considered at this time because it is only in the early design stage and it is anticipated there will be auto-shutdown on treatment failure.

The notes below show the DWSP risk assessment on the 5 high level options and what is predicted to be in place as control measures if the options are fully delivered with all control measures working as intended. Please note: the post control measure assessments are carried out outside the normal DWSP methodology because they are all based on assumptions of successful work to be carried out and on a time frame longer than is usual. Portsmouth Water does not currently have a DWSP modelling tool to assess options for PR24 or WRMP.

2 DWSP RISK ASSESSMENTS FOR WRMP OPTIONS (NOT PROJECT RISK)

1. Havant Thicket Raw Water for Portsmouth Water use only - DWSP risk assessment assumes the impounding reservoir will be filled with a mixture of Portsmouth Water's Source B springs and recycled water from Southern Water's SRN Works A wastewater treatment works.

Hazard	Risk before H/M/L	Control Measure at Havant Thicket	Risk after H/M/L
Insufficient water in Hampshire	H	Structure of the reservoir and supporting infrastructure to deliver the raw water	L
Cryptosporidium	H	None in Havant Thicket - treatment downstream at Works A	H
Turbidity	H	None in Havant Thicket - treatment downstream at Works A	H
Microbiology	H	None in Havant Thicket - treatment downstream at Works A	H

1a. Works A WTW enhancements - intermittent use of DAF plant on Havant Thicket raw water on specified triggers.

Hazard	Risk before H/M/L	Control Measure at Works A	Risk after H/M/L
Insufficient water in Hampshire	L	none	L
Cryptosporidium	H	Fully functional DAF plant in addition to current treatment on site	L
Turbidity	H	Fully functional DAF plant in addition to current treatment on site	L
Microbiology	H	Fully functional DAF plant in addition to current treatment on site	M

2. Works A to Reservoir B Transfer (10/20/30 ML/d)

Hazard	Risk before H/M/L	Control Measure on the strategic main Works A to Reservoir B	Risk after H/M/L
Insufficient water in Hampshire	H	Cathodic protection/maintenance strategy/pressure control	L
Cryptosporidium	L	none	L
Turbidity	L	Flushing regime	L
Microbiology	L	Chlorine dosing	L

3. Havant Thicket Raw Water for Portsmouth Water & Southern water use - DWSP risk assessment assumes the impounding reservoir will be filled with a mixture of Portsmouth Water's Source B springs and recycled water from Southern Water's SRN Works A wastewater treatment works.

Hazard	Risk before H/M/L	Control Measure at Havant Thicket	Risk after H/M/L
Insufficient water in Hampshire/IOW	H	Structure of the reservoir and supporting infrastructure to deliver the raw water	L
Cryptosporidium	H	None in Havant Thicket - treatment downstream at Works A or SRN Source A	H
Turbidity	H	None in Havant Thicket - treatment downstream at Works A or SRN Source A	H
Microbiology	H	None in Havant Thicket - treatment downstream at Works A or SRN Source A	H

4. Source S Drought Permit: increase in Source S output in emergency situations

Hazard	Risk before H/M/L	Control Measure at Source S treated water	Risk after H/M/L
Insufficient water in Reservoir C	H	Pumping capacity	L
Cryptosporidium	L	none	L
Turbidity	L	Flushing regime	L
Microbiology	L	Chlorine dosing	L
Nitrate	H	None at WTW control measure is downstream; Blending of nitrate in Service Reservoir	H

5. Network Enhancements - Portsmouth Water. The risks below are for any generic network enhancement and assumes all controls are functioning satisfactorily.

Hazard	Risk before H/M/L	Control Measures - strategic mains	Risk after H/M/L
Insufficient water in Hampshire	H	Cathodic protection/maintenance strategy/pressure control	L
Cryptosporidium	L	none	L
Turbidity	L	Flushing regime	L
Microbiology	L	Chlorine dosing	L
Iron/Manganese	L	Cathodic protection/maintenance strategy/pressure control	L
Chlorine degradation	L	Network modelling	L