



Mersey-Forth Water Management Review

FACT SHEET

Mersey-Forth Acid Drainage Investigation Study



Field investigations to assess the acid drainage potential at the toe of Wilmot Dam.

The rationale for this technical study arose from multiple lines of evidence, presented in the Mersey-Forth Environmental Review Report, suggesting that acid drainage may occur in the Mersey-Forth catchments.

The evidence included:

- A state-wide assessment of acid drainage which identified the region as a potential acid drainage producing region based on the presence of potential acid forming rocks, high sulphate and metal bearing surface water, and low pH of surface waters (Gurung 2001);

- Elevated metal concentrations in a subset of water samples collected from the toe of the Wilmot Dam;
- Anecdotal reports from Hydro Tasmania field staff of coloured pools at the toe of Wilmot Dam; and
- Iron-staining within Cethana Power Station and in the Wilmot River downstream of Wilmot Dam.

Aim of Study

The study aimed to improve Hydro Tasmania's understanding of whether impacts from acid drainage are exacerbated by Hydro Tasmania's operations.

The objectives of the study were to:

- Identify site(s) in the Mersey-Forth catchments where acid drainage impacts may be affected or exacerbated by Hydro Tasmania's operations; and
- Identify and recommend management options if appropriate.

Process

To achieve the study objectives a number of actions were undertaken:

- A desktop review of available information, including archived water quality results, anecdotal reports from field staff and publicly available maps of acid drainage potential produced by Mineral Resources Tasmania identified sites which may be impacted. These sites of interest were: Wilmot River at the toe of Wilmot Dam and inside Cethana Power Station;
- Field investigations were undertaken at identified sites to assess the acid drainage potential and understand the extent of the issue; and
- Identify how Hydro Tasmania's operations impact on any problems identified.

The consultancy, Technical Advice on Water, was engaged to investigate and report on the investigations.



Iron oxidation at the toe of Wilmot Dam.

Outcomes

The outcomes from the study were:

- Wilmot Dam was constructed using local material which contains acid forming sulphide materials. This is the most likely source of the acid drainage as there is no evidence of acidification within Lake Gairdner. It is considered likely that the flushing of acid drainage from the dam wall increases as the level of Lake Gairdner increases. The acid drainage at the toe of the dam is not considered to pose a significant environmental threat as impacts are localised to a small pond at the toe of the dam and the volumes are low and rapidly diluted in the Wilmot River;
- Acidic seeps were identified within the tunnels of Cethana Power Station. The seeps are due to the movement of natural groundwater through mineral rich bedrock. The volumes are very low and are not considered to pose an environmental risk to surface waters in the catchment; and
- A technical report has been prepared for this study.

Conclusion

Field investigations at the two sites identified the causes of the acid drainage and ascertained that the acid drainage in these locations is unlikely to cause significant environmental impacts. No management actions are recommended.

For More Information

The technical report for this study by Koehnken (2013) is available at www.hydro.com.au/MFWMR-studies.

To see all the Mersey-Forth Water Management Review technical and social studies go to www.hydro.com.au/MFWMR-studies.

Find out more about the Mersey-Forth Water Management Review at www.hydro.com.au/MFWMR.

References

Gurung, S. 2001. *Tasmanian Acid Drainage Reconnaissance Maps 1-4*, Mineral Resources Tasmania.

Koehnken, L. 2013. *Acid Drainage investigation downstream of Wilmot Dam and in the Cethana Power Station*. A report prepared by Lois Koehnken (Technical Advice on Water) for Hydro Tasmania.

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