CASE STUDY

DISCHARGE TO SEWER

Nepenthe

Adelaide Hills, SA

Nepenthe Wines in the Adelaide Hills couldn't recycle treated wastewater onto vines or discharge it into waterways due to environmental conditions. Wastewater was adjusted to pH 7 then trucked off-site for discharge to sewer as trade waste.

Until early 2008, wastewater disposal costs were about $250 per 10,000 L for local sewage discharge.

Wastewater production at the site was around 850,000 L, with wine production of around 50,000 cases (1,200 tonne crush). Water use on the site was approximately 0.95 L of water/L wine. This benchmarks favourably against other wineries without bottling lines that averaged 1.9 L/L (Kumar et al 2009).

In 2008, Nepenthe was no longer able to dispose of wastewater in the Adelaide Hills and had to truck it about 50 km to the main Adelaide wastewater treatment plant at Bolivar.

The total cost of wastewater treatment at that time was about $500 per 10,000 L. This equates to about $25,000/ML or 1.8¢ per bottle of wine for discharge locally or $50,000/ML of wastewater or (3.5¢ per bottle) for discharge at Bolivar.

Considering the difficulty of exporting wastewater for external treatment, this compares reasonably favourably with benchmark costs for on-site treatment, which averaged $19,000/ML ($8,300 to $35,000/ML) for wineries with a crush of 1,000 to 2,500 tonnes (Kumar and Christen 2009).

Note: Although this site is not currently in use, it is an excellent case study in wastewater management.

References

Kumar A & Christen E. (2009) *Developing a systematic approach to winery wastewater management.* CSL05/02.' CSIRO. Adelaide SA

Kumar, A. Frost, P., Correll, R. and Oemcke, D. (2009) *Winery Wastewater Generation, Treatment and Disposal: A Survey of Australian Practice.* CSIRO Land and Water Science Report Series ISSN 1834-6618

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Grant Burge Wines' Illaparra Winery

Tanunda, Barossa Valley, SA

The Grant Burge Illaparra Winery is at Tanunda in the Barossa Valley. The site has a 4 ha vineyard, winery and cellar door/restaurant that is situated close to the township. The winery produces about 230,000 cases of wine (3,000 tonne crush) annually, with a wastewater discharge of about 5 ML (2.4 L water/L wine), which is typical for a winery of its size (Kumar et al 2009).

The winery discharges pre-treated effluent to the local septic tank and effluent disposal (STED) scheme, where the waste receives some primary treatment. It has been discharging to the STED scheme for 2½ years.

Wastewater treatment consists of:

- a 2 ML, 900 m^2 aerated treatment dam (up to 18.5 kW of aeration) with a notional retention time of 30 days;
- a 250 kL gravity settling tank following the dam;
- two 15 kL tanks in series following the settling tank; and
- discharge to the STED scheme.

Its discharge licence requires that it monitor BOD, suspended solids (SS) and pH fortnightly. The license limits are: BOD <600 mg/L; pH 7-9; and suspended solids <500 mg/L. Typical discharge parameters are: BOD 38 mg/L; pH 7.6; and suspended solids 184 mg/L. They have had no licence exceedences.

The cost of discharge to the STED scheme is $4,000 a year, the capital cost of the wastewater treatment system was $100,000 and operational costs are $6,000. This benchmarks favourably with the $13,000/ML average ($5,700 to $35,000/ML) for on-site treatment for wineries with a crush of 1,000 to 5,000 tonnes (Kumar and Christen 2009).

References

Kumar A & Christen E. (2009) *Developing a systematic approach to winery wastewater management.* CSL05/02.' CSIRO. Adelaide SA

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