

Winery Wastewater & Grape Marc Monitoring Report

(Clr Hook) (Report prepared by Rachel Neal)

E360-006-02

Purpose

1. The purpose of this report is to inform Council of the Compliance Group's ongoing monitoring of the discharge of winery wastewater and grape marc to land for the period 1 June 2016 – 31 May 2017.

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| 2. | Rachel Neal will provide a short presentation on winery wastewater and grape marc monitoring (10 minutes). |
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Background

3. Council has been monitoring the land application of winery wastewater annually since 1999 with reports being produced since 2005.
4. The 2017 New Zealand Winegrowers Annual Report indicates that nationally the 2017 harvest of 396,000 tonnes was down 9% on the 436,000 tonnes crushed in 2016. The value of New Zealand wine exports grew a further 6% to reach a new record of \$1.66 billion this year.
5. In 2017 Marlborough had a 79.1% proportion of the grapes harvested in New Zealand (an increase from 74.1% in 2016); with 25,135 producing hectares (up from 24,020 producing hectares in 2016) and 302,396 tonnes processed (down from 323,290 tonnes processed in 2016 and 233,182 tonnes processed in 2015).
6. Liquid waste from the winemaking process predominantly consists of water used for cleaning floors, equipment, fermentation tanks and barrels. Liquid waste is typically seasonal in nature, with the greatest volume generated at vintage time.
7. Winery wastewater can contain some constituents that are an environmental concern. Poor management of the land application of winery wastewater can lead to contamination of surface and ground water and adversely affect soil and plant health.
8. Grape marc is the solid end product once grapes have been pressed for juice. It contains seeds, stems, skins and pulp. In 2017 an estimated 45,400 tonnes of grape marc was produced by Marlborough wineries (down from an estimated 48,500 tonnes in 2016).

Where monitoring was undertaken

9. There are thirty-eight wineries in Marlborough that discharge winery wastewater to land. Thirty-two wineries are located in the Wairau Plains, one is located north of Blenheim and five are located in the Awatere area. For the 2016/2017 monitoring period twenty-three wineries were inspected.
10. The wineries within the Riverlands and Cloudy Bay industrial zones that discharge directly to trade waste and three wineries in the rural zone that have their wastewater taken offsite were not monitored for this monitoring period.

Proposed Marlborough Environment Plan

11. On 9 June 2016, Marlborough District Council notified the Proposed Marlborough Environment Plan (PMEP). The rules for the discharge of liquid and solid agricultural waste had immediate legal effect. This year compliance was assessed against the PMEPP discharge rules.
12. The PMEPP expands on the Wairau/Awatere Resource Management Plan (WARMP) permitted activity standards and contains some new permitted activity standards for the discharge of liquid and solid agricultural waste to land.
13. The PMEPP outlines that the discharge must not occur within 50 metres of a bore, unless the bore intercepts the confined layer of Riverlands FMU or the confined layer of the Wairau Aquifer FMU. There are 5 wineries that have a bore located within 50 metres of their discharge area. The PMEPP states that the discharge of agricultural waste, making or compost/storage of agricultural waste and

storage of compost must not occur within a Soil Sensitive Area. There are 8 wineries that have discharge areas or compost pads within a Soil Sensitive Area.

14. The wineries that have discharge areas or compost pads within 50 metres of a bore or within a Soil Sensitive Area will need to apply for resource consent which will assess the environmental effects and determine what measures need to be put in place for the discharge to continue. As the discharge areas and compost pads were established as a permitted activity under the WARMP, section 20A of the Resource Management Act 1991 (RMA) applies which provides the wineries existing use rights that allow them to legally continue the discharge provided the effects are similar in character, intensity and scale until the PMEP becomes fully operative. Once the PMEP is operative resource consent will need to be applied for within six months of the PMEP being operative.

How monitoring was undertaken

15. The thirty-eight wineries that discharge wastewater to land were monitored according to resource consent conditions and/or the permitted activities standards under the PMEP and Wairau Awatere Resource Management Plan (WARMP). Inspection templates were forwarded to wineries prior to vintage highlighting what information and records are required from them to demonstrate compliance with resource consent conditions and/or PMEP permitted activity standards.
16. There are currently twenty five wineries assessed under the permitted activity standards and thirteen wineries assessed under resource consent.
17. Twenty-three wineries had an annual wastewater onsite inspection during harvest 2017. Wineries operating under the permitted activity standards with small production volumes (less than 2,000 tonnes), no previous onsite compliance issues and no changes to their wastewater system did not have an onsite inspection in 2017.
18. Resource consent conditions for discharge of winery wastewater to land are imposed based on the individual wastewater system and local environments; therefore, conditions vary for each winery. Only twelve wineries are required to undertake annual soil sampling as part of their resource consent conditions (two wineries undertake sampling every two years) to assess what effect the application of wastewater is having on soil properties.
19. The PMEP permitted activity standards for discharge of winery wastewater include: pH level parameters; nitrogen loading to the land; no ponding or anaerobic soil conditions; buffer zones to boundaries, water bodies and bores; no use of a high rate discharge system onto land with a slope greater than 7 degrees; and no discharges into surface water bodies or within a soil sensitive area.
20. The grape marc storage at the wineries was inspected. Additional monitoring was also undertaken for the wineries that compost and/or spread grape marc directly to land to ensure appropriate location, leachate collection and compliance with the PMEP standards.
21. A traffic light system was used for the fourth year to determine the compliance with consent conditions or the permitted activity plan rule. Conditions or rules were assessed as:

Green are compliant and no action is required;

Yellow are technically non-compliant for minor breaches with no-adverse environmental effects;

Orange are assigned for relatively minor breaches requiring corrective action; and

Red are non-compliant and remedial actions may be required.

Monitoring results

22. Thirty-six wineries submitted information (e.g. annual reports, wastewater and/or soil sample results) and data (e.g. records of daily wastewater volumes, discharge dates, disposal area sizes, pH) to demonstrate compliance. Follow up was required with some wineries in order to clarify the information and/or data provided. Two wineries are required to submit their 2017 harvest information at a later date and therefore are not included in this report.
23. There is a large range in processing capacity from the smallest rural winery which crushed 25 tonnes, to the two largest rural wineries which processed just under 30,000 tonnes.

24. This year five wineries (13.8%) operating under resource consent and seven wineries (19.5%) operating under the permitted activity standards were assessed as **green**. Five wineries (13.8%) operating under resource consent and fifteen wineries (41.7%) operating under the permitted activity standards were assessed as **red**.
25. Overall this year twelve (33.3%) wineries (up from eight (23.5%) wineries in 2016 and nine (24.3%) in 2015) were fully compliant with all conditions or rules and were assessed as **green**. One (2.8%) winery (down from three wineries in 2016) was assessed as **technically non-compliant**. Three wineries were assessed as **orange** (8.3%) (up from one winery in 2016). Ten wineries (27.8%) (down from thirteen wineries (38.3%) in 2016) had only one condition or rule assessed as **red**. Ten wineries (27.8%) (up from seven (26.5%) in 2016) had two or more conditions or rules assessed as **red** and/or **orange**.
26. The most common area of non-compliance for this monitoring period was exceeding the permitted range on one or more occasions for pH (9 wineries which is the same as in 2016). Other breaches included the discharge/storage of grape marc being within a Soil Sensitive Area (8 wineries), the discharge/storage of grape marc being within 50 metres of a bore (5 wineries), exceeding discharge rate, and not including all parameters in wastewater or soil sampling.
27. There was one instance of ponding observed during the harvest inspections in 2017. No ponding was observed at the time of the follow-up inspection.
28. It is noted that two of the main areas of non-compliance were the discharge within 50 metres of a bore and within a Soil Sensitive Area which are new rules that have not previously been a requirement.
29. During the winery inspections officers make inquiries with wineries as to where their grape marc is disposed of. Inspections at the wineries during vintage did not identify significant discharge issues, problems with leachate collection and/or odour from their onsite grape marc piles. Ten wineries compost their grape marc on site and then spread it under vines as a soil conditioner. Eight wineries spread their grape marc directly to land. Eighteen wineries have their grape marc transported offsite for compost, stockpiling and/or stock feed.
30. Prior to the 2017 vintage Council provided the PMEP rules and information in regards to the storage of grape marc to industry groups and the wineries. This has helped to raise awareness of the need to responsibly manage grape marc. Council has received a number of queries from wineries in regards to legal requirements for grape marc.

Future activities

31. The 2017/2018 season will continue to focus on education about the criteria required for consent conditions, plan rule standards and achieving compliance. This is to ensure accurate data and records are provided to Council to demonstrate compliance and avoid any adverse effects from winery discharges.
32. For the 2018 vintage the wineries will continue to be monitored and site visits will be conducted based on the size and compliance history of the wineries.

Comments

33. Industry has responded positively to the traffic light rating system reporting that provides a clear visual picture of their compliance status.
34. Based on the information provided to date for Council's compliance reports for the 2016/2017 season, some wineries still need improved record keeping for the entire reporting period.
35. Two main areas of non-compliance, the discharge within 50 metres of a bore and within a Soil Sensitive Area, are new rules that were not previously a permitted activity requirement under the WARMP.
36. Grape marc is an industry issue which requires careful management to ensure that there are no adverse environmental effects. Overall an improved management and awareness of grape marc storage was noted in the 2017 vintage year.

Summary

37. The Compliance Group is continuing to take a proactive and constructive partnership approach to monitoring the discharge of winery wastewater and grape marc with education, relationship building and graduated enforcement when required with the key objective being the mitigation of adverse environmental effects.

RECOMMENDED

That the information be received.