

Winery Wastewater & Grape Marc Monitoring Report

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 2018 – 31 May 2019.

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 2019 New Zealand Winegrowers Annual Report indicates that nationally the 2019 harvest of 413,000 tonnes was down 1% on the 419,000 tonnes crushed in 2018. The value of New Zealand wine exports grew a further 6% to reach a new record of \$1.83 billion this year.
5. In 2019 Marlborough had a 76.6% proportion of the grapes harvested in New Zealand; with 26,850 producing hectares (compared to 26,288 producing hectares in 2018) and a total of 305,467 tonnes processed (down from 313,038 tonnes in 2018).
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 2019 an estimated 45,000 tonnes of grape marc was produced by Marlborough wineries.

Where monitoring was undertaken

9. There are 38 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 2018/2019 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 PMEP discharge rules.
12. The PMEP 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 PMEP 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 five wineries that have a bore located within 50 metres of their discharge area. The PMEP 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 eight 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.

How monitoring was undertaken

15. The 38 wineries that discharge wastewater to land were monitored according to resource consent conditions and/or the permitted activities standards under the PMEP and the 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 24 wineries assessed under the permitted activity standards and 14 wineries assessed under resource consent.
17. Twenty-three wineries had a wastewater onsite inspection during harvest 2019. 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 2019.
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. Fifteen 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 continued to be used for the fifth year to determine the compliance with consent conditions or the permitted activity plan rule. This year the compliance rating schedule has been updated to align with the rating schedule used for all monitoring programs. 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 non-compliant where corrective or remedial action(s) may be required; and
 - Red** are significantly non-compliant, where a persistent or significant breach has occurred.

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. Further information has been requested in order to complete the compliance report for two wineries and therefore their compliance status is not included in this report.
23. There is a large range in processing capacity from the smallest rural winery which crushed 22 tonnes, to one of the largest rural wineries which processed just over 28,000 tonnes.
24. Fourteen wineries discharge winery waste to land under resource consent and 24 wineries discharge winery waste to land under the permitted activity standards.

25. This year seven wineries (19%) operating under resource consent and nine wineries (25%) operating under the permitted activity standards were assessed as **compliant**. Four wineries (11%) operating under resource consent and six wineries (17%) operating under the permitted activity standards were assessed as **non-compliant**.
26. Overall this year 16 (44%) wineries (up from 14 (40%) in 2018) were fully compliant with all conditions or rules and were assessed as **compliant**. Eight (22%) wineries (no change since 2018) were assessed as **technically non-compliant**. Eleven (31%) wineries were assessed as **non-compliant**. Nine of these wineries (25%) had only one condition or rule assessed as **non-compliant** (up from seven wineries in 2018) and two wineries (6%) had two or more conditions or rules assessed as **non-compliant** (down from six wineries in 2018). One winery was assessed as **significantly non-compliant**.
27. The most common area of non-compliance for this monitoring period was exceeding the permitted range on one or more occasions for pH (eight wineries). Other breaches included the discharge/storage of grape marc being within a Soil Sensitive Area (five wineries), sampling not completed as required, minor ponding, exceeding discharge rate, and nitrogen loading exceedance.
28. The significant non-compliance is due to a number of conditions not being met, including pH exceedance, nitrogen loading and ponding. Council is currently working with this winery in order to achieve compliance.
29. It is noted that one of the main areas of non-compliance was the discharge within a Soil Sensitive Area which is a new rule that was not previously a requirement under the WAMRP. Two wineries obtained resource consent for their discharge to continue within a Soil Sensitive Area prior to the 2019 harvest period.
30. During the winery inspections officers request information 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. Fifteen wineries compost their grape marc on site and then spread it under vines as a soil conditioner. Thirteen wineries spread their grape marc directly to land. Eight wineries have their grape marc transported offsite for compost, stockpiling and/or stock feed.

Future activities

31. For the 2019/2020 monitoring period Council 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 2020 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. Based on the information provided to date for Council's compliance reports for the 2018/2019 season, some wineries still need improved record keeping for the entire reporting period.
34. One main area of non-compliance, the discharge within a Soil Sensitive Area, is a new rule that was not previously a permitted activity requirement under the WARMP.
35. 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 2019 vintage year.

Summary

36. 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.