



# WINERY WASTES SURVEY

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# 1. Introduction

The purpose of the Resource Management Act is to promote sustainable management of natural and physical resources.

To encourage sustainable management of winery wastes, the Marlborough District Council (“Council”) carries out the winery wastes survey on an annual basis during vintage.

This survey involves Council staff visiting wineries and checking the methods of treating and disposing of their wastewater and grape marc to ensure there is compliance with the relevant Plan rules and/or Resource Consent. Site visits are conducted during vintage, with follow-up visits being carried out as appropriate.

Marlborough has 47 wineries, 10 of which are located in the industrial areas eg Riverlands Industrial Estate and Cloudy Bay Business Park.

As wineries in the industrial estates discharge their wastewater and stormwater to reticulated community systems the potential resource management issue differ to those wineries that discharge wastewater to land. Hence, wineries in industrial area are monitored differently to wineries in rural areas. Stormwater drains and waterways downstream of the wineries in the industrial estate are checked regularly during vintage for signs of winery wastewater. If wastewater is found in the downstream stormwater drains then this contamination is tracked to determine which winery is responsible for the discharge.

Based on observations at the site, the system is given the status of:

- Compliance - Full compliance with rules or resource consents;
- Compliance (maintenance required) - Compliance with rules or resource consents, the system or its management should be improved to ensure on-going compliance;
- Non-compliance (minor) - A level of non-compliance with rules or resource consents, and some potential for environmental degradation.
- Non-compliance (major) - Non-compliance with rule or resource consents resulting in greater potential for environmental degradation. Includes all discharges to waterways.

In this report the term ‘winery wastewater’ refers to the wastewater that is produced from the wine making process and does not include human sewage. The term ‘grape marc facility’ includes all sites that deal with grape marc.

**Trees can utilise nutrients in wastewater.**



**Screens Need Regular Cleaning**

## 2. Results

The results for the 2008 winery wastes survey are outlined below:

### Winery Wastewater

During the 2008 survey a total of 47 wineries were visited to assess compliance with rules or resource consents relevant to winery wastewater.

31 (72%) wineries were in compliance at the time of the first inspection during this vintage. Of the complying sites, 3 (8%) had minor issues to address and were considered to be compliance (maintenance required).

11 (23%) wineries were in minor non-compliance

2 (5%) were in major non-compliance.



**Regular Shifting Avoids Overloading**

### Grape Marc

During the 2008 survey a total of 42 sites that deal with grape marc were visited to assess compliance with rules or resource consents.

38 (90%) of grape marc facilities were in compliance at the time of my first inspection during vintage.

4 (10%) of grape marc facilities were in non-compliance.



**Grape Marc Stored on Concrete Bunded Pad with Leachate Collection**

### Comparison with Previous Surveys

The table below sets out compliance rates over time.

Year of Survey	Grape Marc			Wastewater		
	Compliance	Non-Compliance (Minor)	Non-Compliance (Major)	Compliance	Non-Compliance (Minor)	Non-Compliance (Major)
2008	90%	10%	0	72%	23%	5%
2007	100%	0	0	88%	12%	0
2006	96%	4%	0	70%	21%	9%
2005	98%	2%	0	80%	20%	0
2004	97%	3%	0	89%	5%	6%
2003	94%	3%	3%	75%	19%	6%
2002	51%	39%	10%	72%	17%	11%

Experience suggests that the compliance rates correlate with the length and intensity of harvest. Some wineries did not have adequate waste systems or system management to deal with the intense 2008 harvest.



### Complaints

Council received no resource management complaints with regards to winery activities during the 2008 vintage.

During previous vintages Council has received complaints about noise, light spill, wastewater and grape marc.

### Human Sewage

The extra staff and work hours can put human sewage systems under pressure during vintage.

Although not part of the winery wastes survey, this vintage, wineries were queried on the maintenance and management of their on-site human sewage systems.

Most wineries had considered the impact of vintage on the human sewage systems and arranged for their tanks to be de-sludged, if necessary.



**Overloading Wastewater can Impact on Vine Health**



**Spreading Grape Marc to Land**

### 3. Enforcement

During the 2008 vintage five Infringement Notices and six Abatement Notices were issued. There are other sites that may also be subject to enforcement if they do not undertake certain works. During the 2007 vintage no enforcement action was taken and during 2006 vintage six Infringement Notices were issued.

An Abatement Notice is a formal warning that the recipient must cease or take certain actions. An Infringement Notice is a fine of up to \$1000.

A number of factors are taken in account to when assessing what, if any, enforcement action is taken including environmental impacts, scale and duration of breach, action to address issue and to avoid future incidents, site history, was the breach reasonably foreseeable/avoidable, attitude of offender and any other relevant matters.

The issues at the wineries that have already been subject to enforcement action are set out below:

#### Winery 1

Winery 1 is a medium sized winery. All winery wastewater is discharged to land via under vine sprinklers.

This vintage it was found that there were areas of ponding wastewater. Several sprinklers were blocked up with grape marc and not operating appropriately. When unblocked the sprinklers dripped wastewater to land under low pressure.

The discharge rate exceeded the 10 mm per day requirement in the Proposed Wairau/Awatere Management Plan.

An Abatement Notice and Infringement Notice have been issued.



**Overloading of Wastewater to Land**

#### Winery 2

Winery 2 is a medium sized winery. Winery wastewater is discharged to land via a K-line irrigation system.

During the week prior to Council's visit the K-line irrigation has not been managed appropriately resulting in a discharge rate exceeding the 10 mm per day requirement in the Proposed Wairau/Awatere Management Plan.

An Abatement Notice has been issued.





**Overloading of Wastewater to Land**

### **Winery 3**

Winery 3 is a large winery located in the Industrial area. All wastewater should be discharged to the Trade Waste System, with rainwater from the site being discharged to the stormwater system.

#### RDV Waste

Solid and liquid waste from the RDV was discharged to the stormwater system and entered a waterway.

Infringement notices were issued to Winery 3 and the winery's General Manager.

The winery also received an Abatement Notice.

#### Grape Marc

Grape marc had been taken off site and stockpiled on land. There was no leachate collection system in place. The farmer had requested some grape marc for stock feed, but considerably more marc than could be used by this farmer was discharged to land.

A second Abatement Notice has been issued.



**Waterway Containing RDV Waste**



**Stormwater Discharge Pipe Containing RDV Waste**

## Farmer

As discussed above Winery 3 was stockpiling grape on land. The farmer who was in charge of this land has also been issued an Abatement Notice.



**Grape Marc Stockpiled on Land - No Purpose Built Pad or Leachate Collection System in Place**

## Winery 4

This is a small winery located in the Industrial area. All wastewater should be discharged to the Trade Waste System, with rainwater from the site being discharged to the stormwater system.

Crates used for hand picking grapes were washed into the stormwater system. This resulted in grapes and wash water entering the co-op drain.

An Infringement Notice has been issued.



**Grapes in Waterway**



**Grapes and Washwater entering Stormwater Sump**



## Vineyard

This vineyard takes some grape marc from a medium sized winery for composting.

The composting operation was set up on land. There had been an attempt to construct a grape marc pad and leachate collection system, but this system was not operational and the composting was occurring directly on soil.

An Abatement Notice has been issued.



**Grape Marc Stockpiled on Land - No Purpose Build Pad or Leachate Collection System in Place**

## Winery 6

Winery 6 is a medium sized winery. Wastewater is discharged to land via a travelling irrigator.

During the first site inspection it was found that winery wastewater was siphoning out of the irrigator under low pressure and causing small amounts of ponding. The winery was requested verbally and in writing to sort this matter out.

The second site visit showed no improvement and winery wastewater was still ponding on the ground and exceeding the 10 mm discharge rate.

An Infringement Notice has been issued.



**Overloading of Wastewater to Land**

## 4. Proposed Wairau/Awatere Management Plan

The discharge of winery wastewater, leachate and grape marc to land is regulated by rules in the Proposed Wairau/Awatere Resource Management Plan (refer to Appendix A & B). Those discharges that do not comply with these rules should change their system or obtain resource consent. If the discharge fully complies with these rules a certificate of compliance is generally obtained from Council.

A number of wineries have resource consents for their winery wastewater discharge. These resource consents are subject to compliance with certain conditions. Often conditions require that an annual report be prepared, soil and/or wastewater samples be taken and that certain wastewater records be kept.



**Grape Marc and Leachate Contained on Concrete Pad. Leachate runs off to Wastewater System**



**An Appropriate Discharge Rate prevents Ponding**

## Appendix A

### Rural Zone, Proposed Wairau/Awatere Resource Management Plan states:

#### 1.8.9 Liquid Wastes

The discharge of liquid waste from the processing of fruit, vegetable, shellfish, fish or animal products onto or into land is a permitted activity subject to the following conditions:

1.8.9.1 The characteristics of the waste shall be such that:

- BOD<sub>5</sub> - 5,000g/m<sup>3</sup>
- faecal coliforms - 100/100 mL
- free available chlorine < 1 g/m<sup>3</sup>
- Other contaminants shall not exceed the toxicant limits for irrigation water quality which are set out in Appendix P. These limits are derived from the Australian Guidelines for Fresh and Marine Waters (Australian and New Zealand Environment and Conservation Council [ANZECC] 1992)
- No objectionable odours can be detected at or beyond the legal boundary of the area on which the liquid waste is discharged.

1.8.9.2 The total nitrogen loading on the land to be used for the discharge shall not exceed 200kg N/ha/yr.

1.8.9.3 The discharges shall be applied evenly over the disposal area at a rate not exceeding 10mm/day.

1.8.9.4 The discharge shall not be within 20 metres of any surface water body.

1.8.9.5 There shall be no runoff of the waste into any surface water body.

1.8.9.6 A buffer zone of a minimum of 10 metres width shall be maintained between the area of discharge and the legal boundary of the land on which the liquid waste is discharged.

1.8.9.7 The discharge shall not be within any class NS catchment defined in Appendix J.



## Appendix B

### Rural Zone, Proposed Wairau/Awatere Resource Management Plan states:

#### 1.8.10 Solid Waste

The discharge of solid waste from the processing of untreated timber, fruit, vegetable, and shellfish products onto or into land is a permitted activity subject to the following conditions:

- 1.8.10.1 The waste shall not contain any substances classified as eco-toxic under the Hazardous Substances and New Organisms Regulations.
- 1.8.10.2 The discharge shall not be within any class NS catchment defined in Appendix J of the Proposed Wairau / Awatere Resource Management Plan.
- 1.8.10.3 The characteristics of the waste shall be such that no shellfish flesh is included.
- 1.8.10.4 No objectionable odours can be detected at or beyond the legal boundary of the area of land on which the waste is discharged.
- 1.8.10.5 The total nitrogen loading on the land shall not exceed 100 kg N/ha/yr.
- 1.8.10.6 The amount of solids applied shall not exceed a depth of 50mm per year, measured when applied.
- 1.8.10.7 The discharge shall not be within 20 metres of any surface water body.
- 1.8.10.8 There shall be no runoff of contaminants from the waste into any surface water body.
- 1.8.10.9 A buffer zone of a minimum of 5 metres width shall be maintained between the area of discharge and the legal boundary of the area of land on which the waste is discharged.