

Use of Land and Discharge to Air in relation to Composting Barns Assessment of Environmental Effects

Prepared for

Wongan Hills Limited

Prepared by

L E W E
Environmental
I m p a c t

April 2022




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Assessment of Environmental Effects

Wongan Hills Limited

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1 INTRODUCTION

1.1 Purpose

The purpose of this report is to provide an Assessment of Environmental Effects ('AEE') for Wangan Hills Limited (WHL), to support a consent application for land use and to discharge to air generated by composting barns. It has been prepared in accordance with Section 88 and the Fourth Schedule of the Resource Management Act 1991 (RMA).

It includes a description of the proposal and the receiving environment, an assessment of the actual and potential effects of the activity on the environment, and an assessment against the objectives and policies of the relevant regional plans.

1.2 Background

WHL operates a mixed farming system on Banks Peninsula comprising 4,106 ha of land in total with 3,632 ha in productive blocks. The farming system is a mix of beef, dairy and sheep totalling approximately 22,500 stock units. The proposed barns and effluent application area are located at Kaituna Valley Road, RD2, Christchurch 7672. The land is owned by WHL.

WHL is in the process of consenting a proposal to build and operate 2,200 animal composting barn and feed pad facility on their farm in Kaituna Valley. It is proposed that the animals are kept in one of four composting barns for 24 hours of the day and have access to adlib feed and water for the entire time. At times in the day the area available to the animals is restricted while the compost is cultivated and aerated by tractor. Supplements will be grown on farm along with imported supplement into the farming system. The composted bedding material generated from the barn will be spread to land every 1-2 years.

There is nil liquid effluent generated from the feed pad and barn. As a part of the proposal for housing animals in the composting barns and feedpad, WHL requires further resource consents, the assessment for which now forms the basis of this AEE.

The use of land associated with the composting barns is a discretionary activity under Regulation 10 of the National Environmental Standards for Freshwater.

The use of land for housing of animals, the storage of and treatment of animal effluent and spreading of compost bedding material to land is a permitted activity under Canterbury Land and Water Regional Plan (LWRP) Rules 5.31, 5.33 and 5.29 respectively.

The discharge to air from the composting barn is a restricted discretionary activity under Canterbury Air Regional Plan (CARP) Rule 7.71 due to a small encroachment into the 500 m buffer distance provided for under Rule 7.70(2)(b), while the discharge to air from the application of the compost material as solid animal effluent is a permitted activity under CARP rule 7.73.

Stormwater will be directed to ground from roof or be collected as a permitted activity under LWRP Rule 5.95 and 5.96.

This report provides an assessment of environmental effects to the surrounding environment to gain a land use consent for the use of land associated with a composting barn and a discharge permit for the discharge of contaminants into air from the accommodation of more than 30 cattle in a barn.



1.3 Project Scope

Low Environmental Impact (LEI) has been engaged by WHL, to:

- Undertake an Assessment of Environmental Effects on the receiving environment for the options selected;
- Prepare a resource consent application for the:
 - Use of land for the composting barns and feedlot;
 - Discharge to Air; and
- Lodge the application.

This report describes the receiving environment and describes the proposed activities. The report also evaluates the potential effects against the provisions of the relevant statutory planning documents.

This resource consent application has been prepared in accordance with the requirements of the Resource Management Act 1991 (RMA) and sets out a consideration of the actual and potential effects of the proposed works on the environment.



2 RECEIVING ENVIRONMENT

2.1 Location

The overall property is located along Kaituna Valley Road, RD2, Christchurch 7672. Certificates of Title for the property along with a map of the entire property are included in **Appendix A**. There are several land parcels that make up the overall property. The parcels proposed to receive compost from this consent are presented in Table 2.1.

Table 2.1: Property Titles Associated with the Activity

Title no	Estate des
36803	Fee Simple, 1/1, Lot 4-8 Deposited Plan 309387, 465,293 m ²
620765	Fee Simple, 1/1, Lot 1 Deposited Plan 465487, 83,850 m ²
680367	Fee Simple, 1/1, Part Lot 1 Deposited Plan 8464 and Lot 1 Deposited Plan 45774 and Lot 2 Deposited Plan 475640, 687,501 m ²
859201	Fee Simple, 1/1, Lot 1 Deposited Plan 529737, 21,125 m ²
859202	Fee Simple, 1/1, Lot 2 Deposited Plan 529737 and Lot 1 Deposited Plan 33960 and Lot 4 Deposited Plan 49740 and Part Lot 2 Deposited Plan 1631, 2,045,388 m ²
CB482/108	Fee Simple, 1/1, Reserve 2581, 40,469 m ²
CB408/259	Fee Simple, 1/1, Reserve 166, 24,281 m ²
CB434/154	Fee Simple, 1/1, Lot 1 Deposited Plan 10130, 202,343 m ²
CB25K/1094	Fee Simple, 1/1, Section 20 Block VII Reserve 959, 78,000 m ²
CB514/150	Fee Simple, 1/1, Lot 3 Deposited Plan 13409, 2,460,489 m ²
CB381/251	Fee Simple, 1/1, Part Lot 2 Deposited Plan 1631, 947,521 m ²
CB423/117	Fee Simple, 1/1, Part Lot 3 Deposited Plan 2133, 184,218 m ²
CB727/63	Fee Simple, 1/1, Part Lot 3 Deposited Plan 1631, 409,668 m ²
CB13F/465	Fee Simple, 1/1, Part Lot 1 Deposited Plan 14039, 4,269 m ²
CB14B/1028	Fee Simple, 1/1, Lot 2 Deposited Plan 34991, 54,130 m ²
CB29A/167	Fee Simple, 1/1, Lot 1 Deposited Plan 49740, 455,300 m ²
CB29A/168	Fee Simple, 1/1, Lot 2 Deposited Plan 49740, 400,030 m ²
CB29A/169	Fee Simple, 1/1, Lot 3 Deposited Plan 49740, 400,320 m ²

The property is consented under CRC213680 to take and use water (expires 01 Jan 2030), CRC213679 to use land for a farming activity (expires 31 Dec 2029) and CRC152027 to discharge contaminants to land and air to use land for Cattle Yard Effluent Storage and to Discharge Effluent (expires 08 Oct 2029). This relates to the existing "beef cattle stockholding yard" on the property.

The location of the total property area is shown in Figure 2.1. The four composting barns are proposed to be located on Part Lot 2 DP 1631 and their general design is shown in Figure 2.2 and Figure 2.3, near the farm existing pivot.

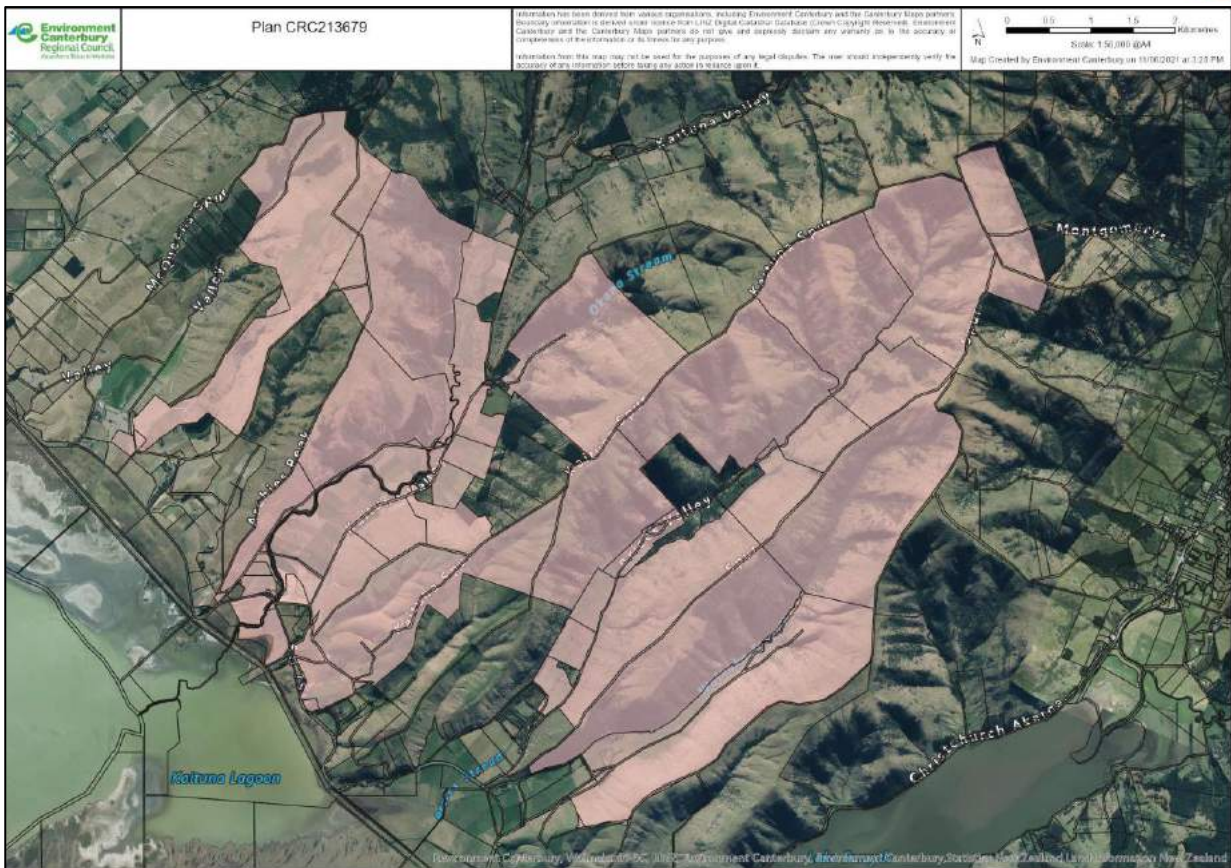


Figure 2.1: Total Property Area (CRC213679)

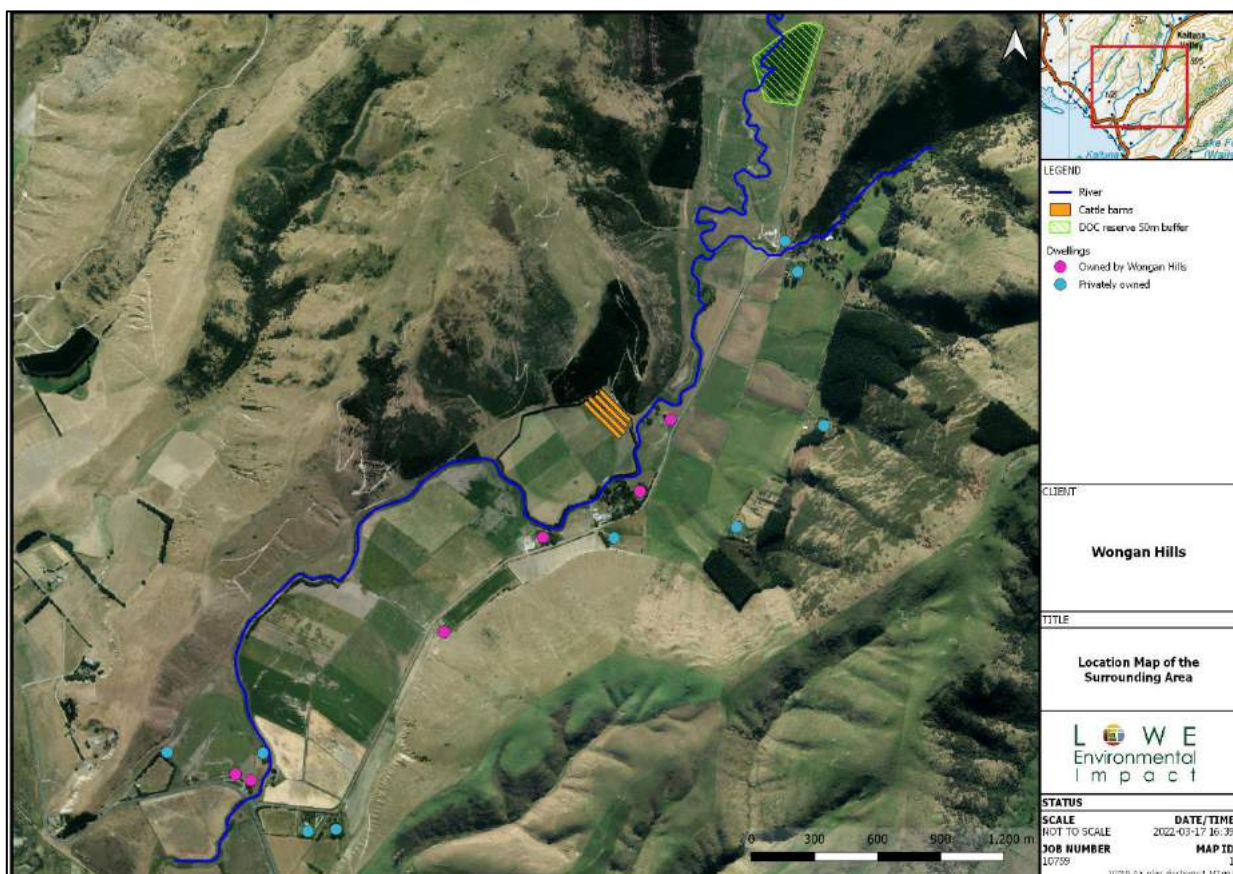


Figure 2.2: Location of Composting Barns and Dwellings

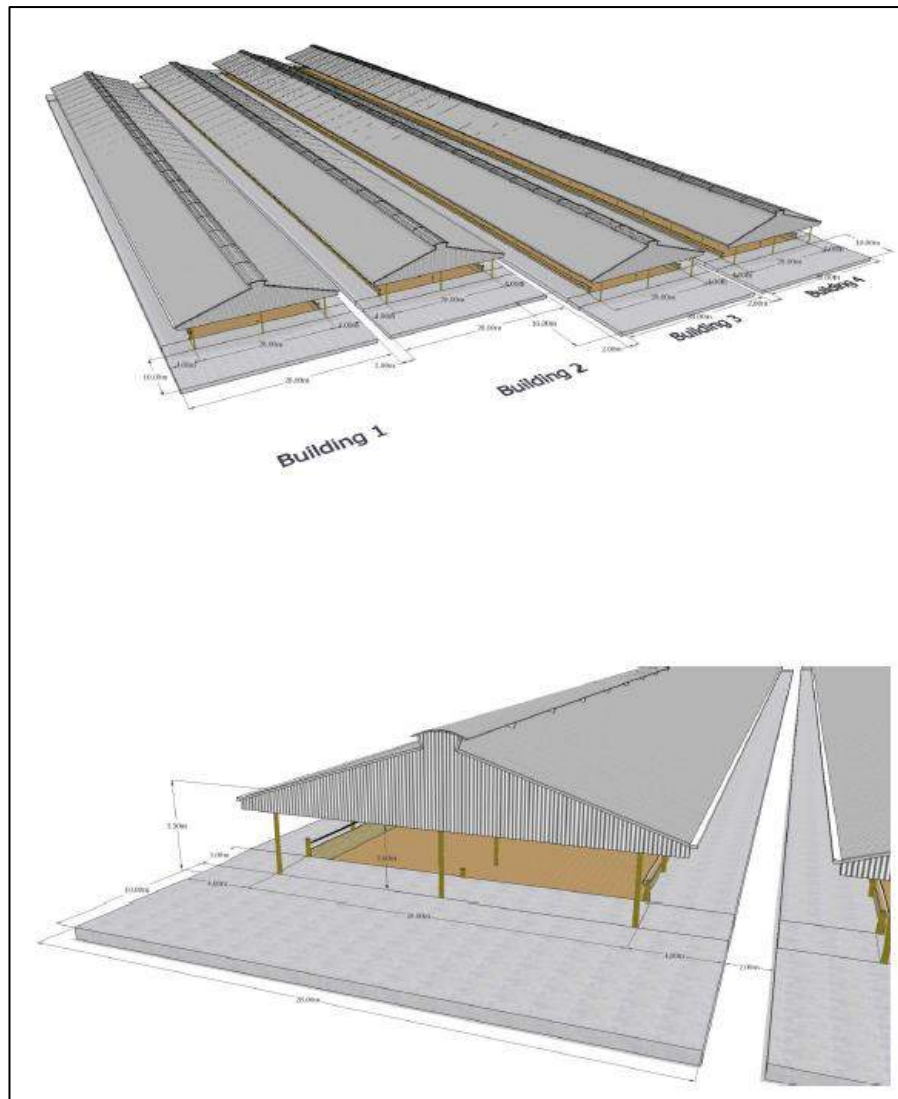


Figure 2.3: General Layout of Composting Barns

2.2 Surrounding Environment

The environment surrounding the property is rural in nature, with sheep and beef, dairy farms and other agricultural uses present. Figure 2.2 show the location of the Composting Barns in relation to neighbouring dwellings. Table 2.2 provides an outline of the distance to the relevant sensitive activity (i.e. between the barns and the location that is 20 metres from an occupied dwelling as per the CARP definition) and associated address details.



2.3 Topography

The topography of the barn area is gently sloping in a South Westerly direction. The barns are located at an elevation of 5m in the Kaituna River valley floor. To the east and north of the barns, the valley walls steadily rise, and the nearest dwellings not owned by WHL are located on the opposite side of the valley at an elevation of 18 m and higher. Figure 2.4 provides the contour and proximity details for the barn and the closest sensitive activity (dwelling).

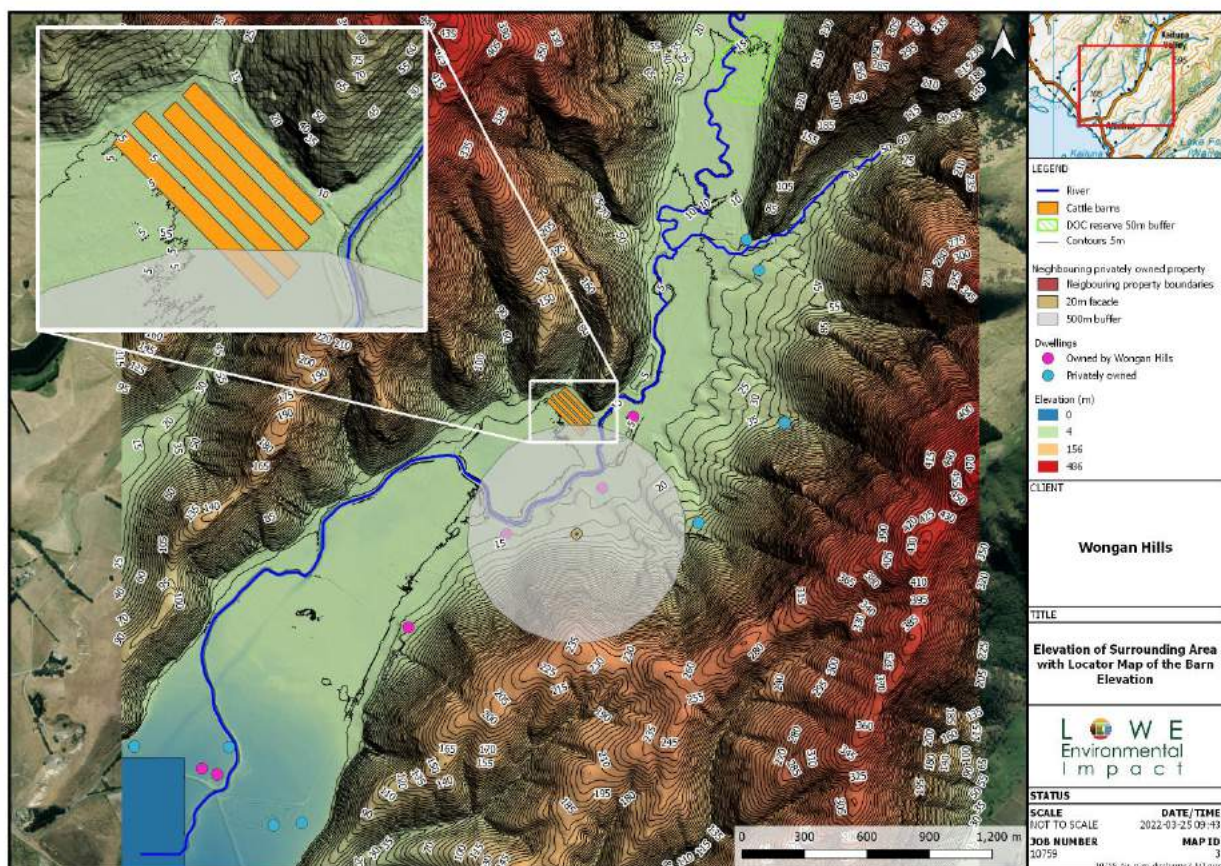
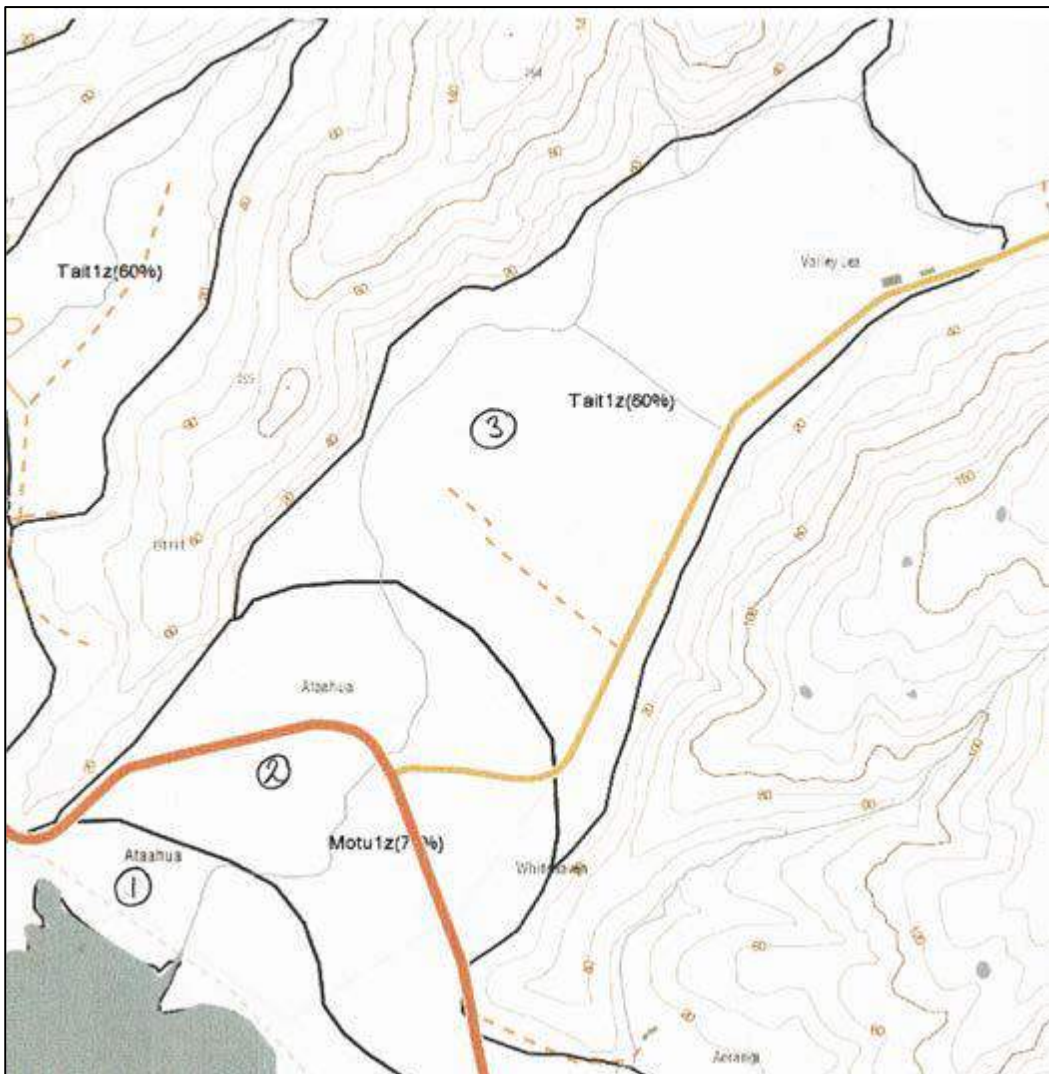


Figure 2.4: Layout of Nearest Sensitive Activity and Composting Barns

2.4 Drainage and Soils

There are multiple types of soil on this farm. A map showing the soil types in the farm and around the farm is displayed in Figure 2.5 and Figure 2.56 shows the fundamental soils of New Zealand, taken from the S-map system and



shows the

details of soils listed on Landcare's S-Map system.

Details of soil types in the farm are summarized in Table 2.3 and Table 2.4 below. The majority of the property is well drained with a portion of the south-western side of the farm being poorly drained.

Table 2.3: Summary of Soil Properties

Applicable Map Number	Soil name	Texture	Drainage	PAW mm
1	Takahe	Silty loam	Moderately well drained	75
2	Evans-Kiwi steep	Silty loam	Well drained	105
5	Barry	Silty loam	Well drained	200

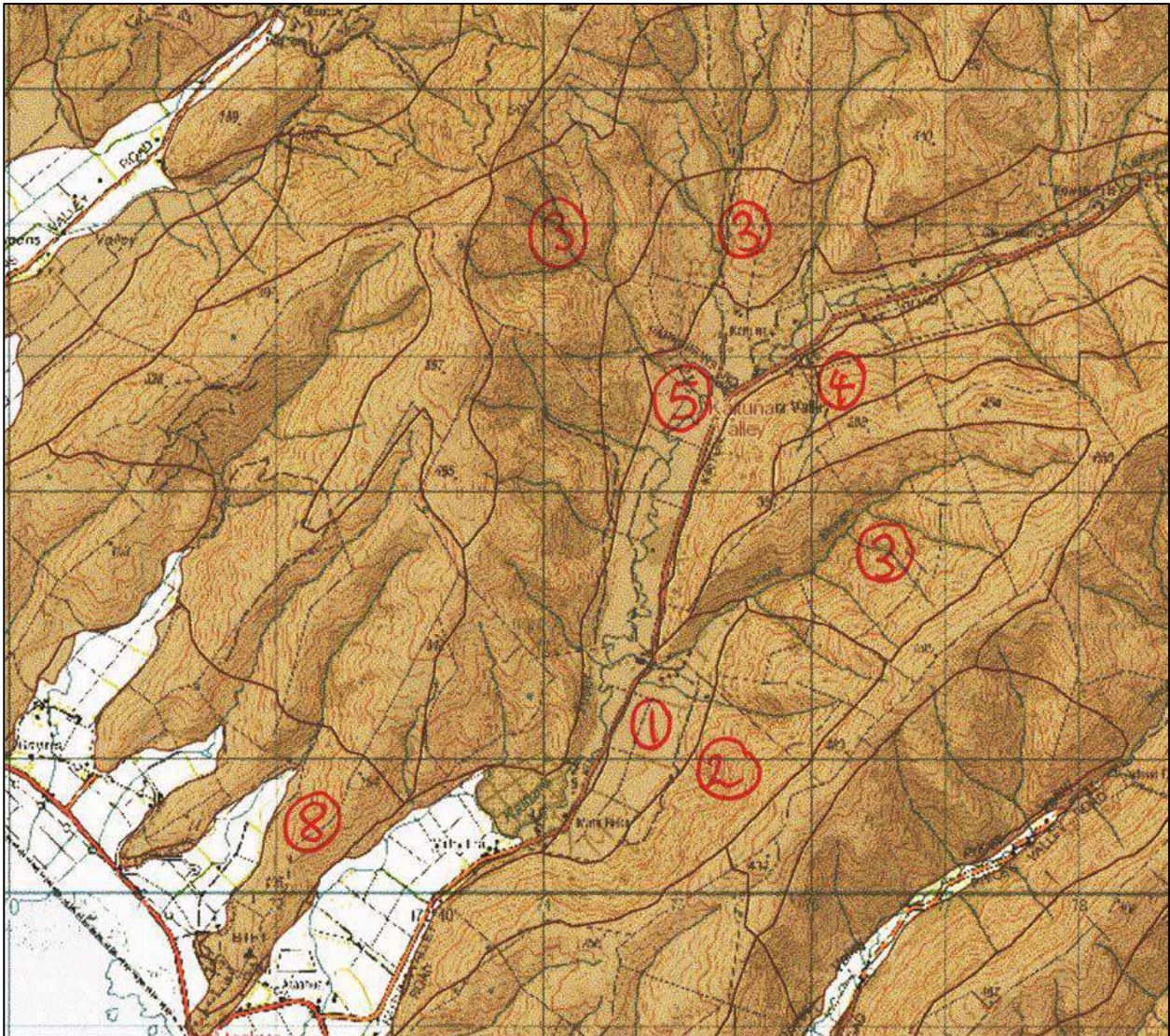


Figure 2.5: Fundamental Soil Types on Farm



Table 2.4: Summary of the Soil Properties of the Barn Area

Map no	Soil name	Permeability of Slowest Horizon	Texture	Drainage	PAW in top 100cm in mm
3	Taitapu	< 4 mm/h	Silty loam	Poorly drained	255

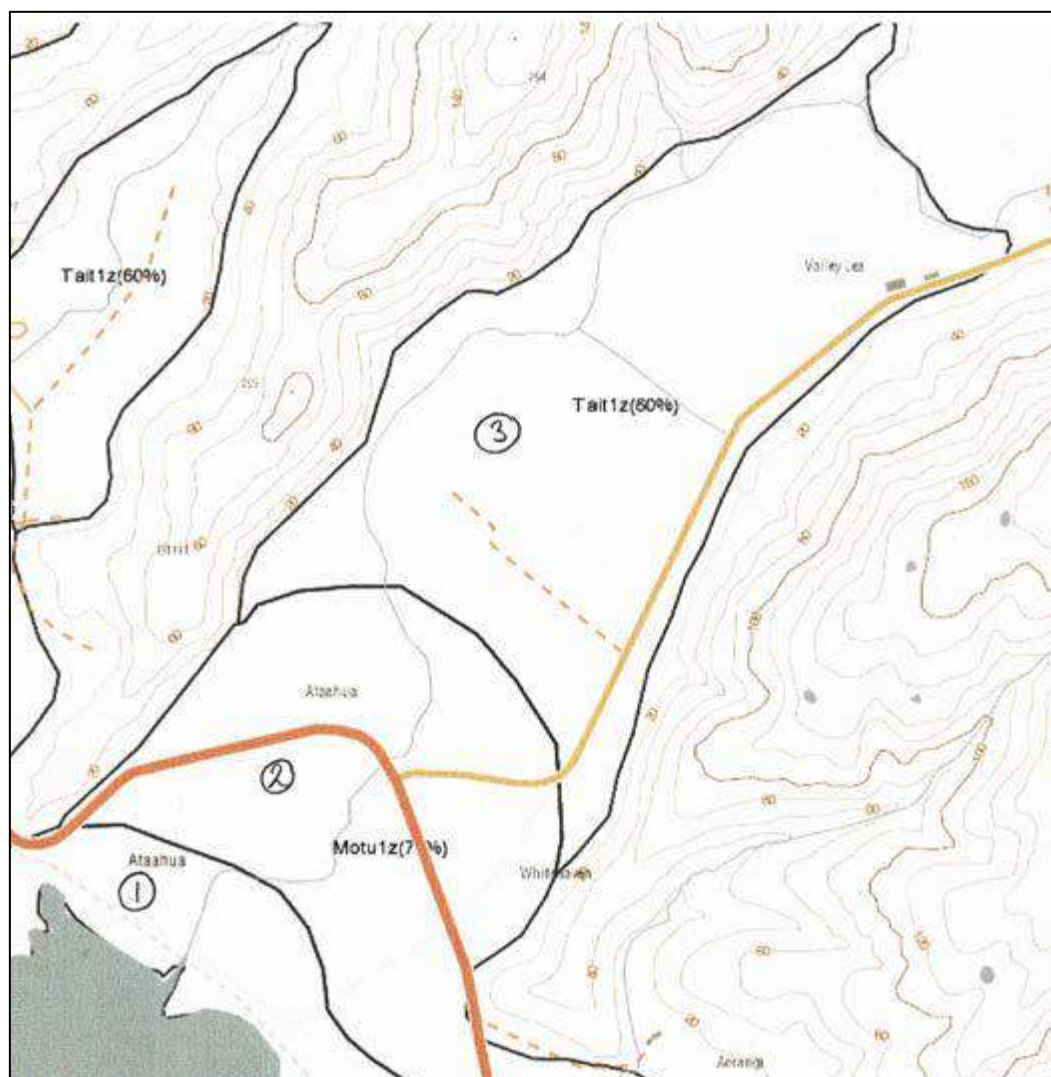


Figure 2.6: Soil Types on Landcare's S-Map system

2.5 Wind

Hourly surface wind is averaged from data collected from NIWA weather station Diamond Harbour Ews (station number 40985), located 14.5 km north-east of the site. The windrose indicates that the most frequent winds in the area are from the south-west, with some occasional north-east winds. Wind speeds range between 0.4 and 53.6 kilometres per hour (km/h), seen below in Figure 2.7. The other nearby NIWA weather station is Lincoln, Broadfield Ews (station number 17603) which is located 22.2 km north-west of the site. Here, the windrose indicates that the most frequent winds are from the north with some occasional south-east winds. Wind speeds range between 0 and 74.2 km/hr, seen below in Figure 2.8. The privately owned weather station on the farm is situated at -43.76351, 172.67259; 0.63 km south west of the barns. From this station, the predominant winds are mostly from the north east and south west, seen in Figure 2.9, and range between 0 and 45 km/hr.

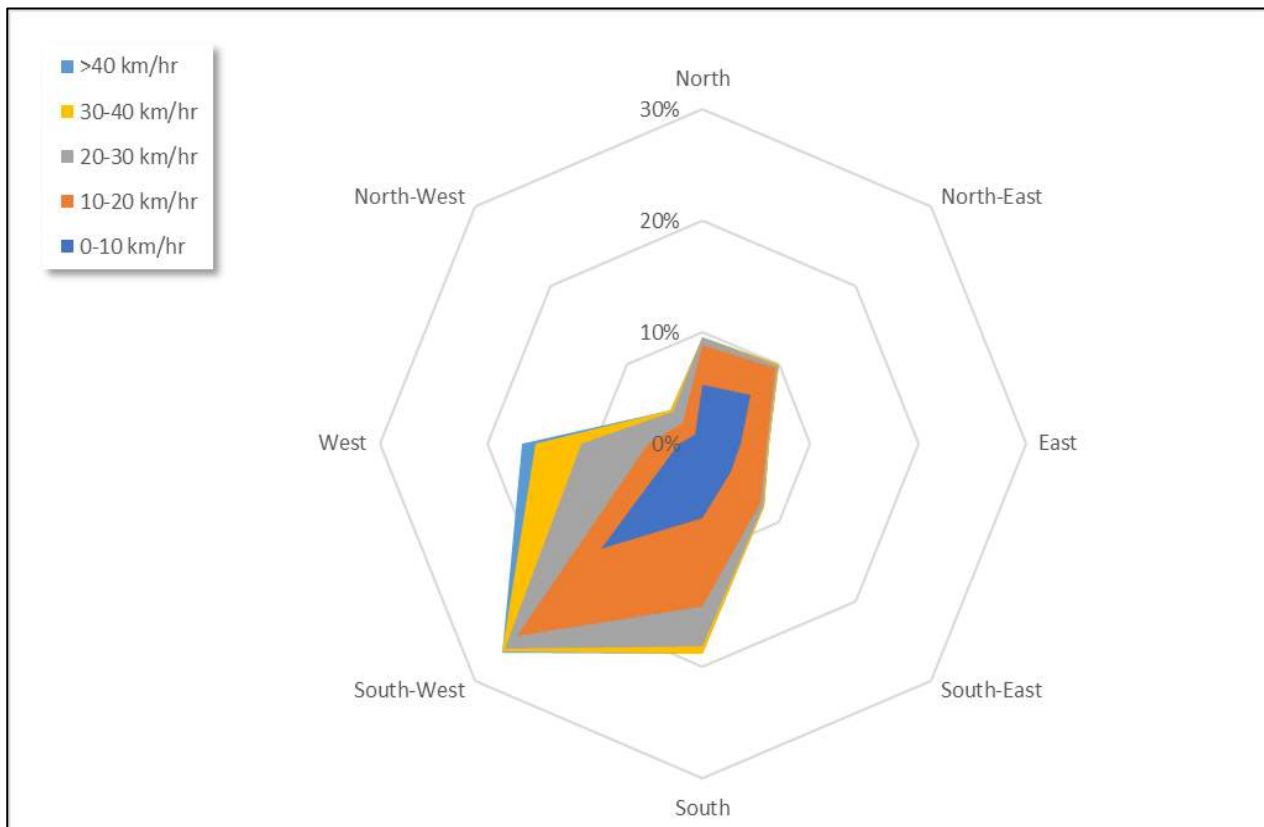


Figure 2.7: Windrose for Diamond Harbour

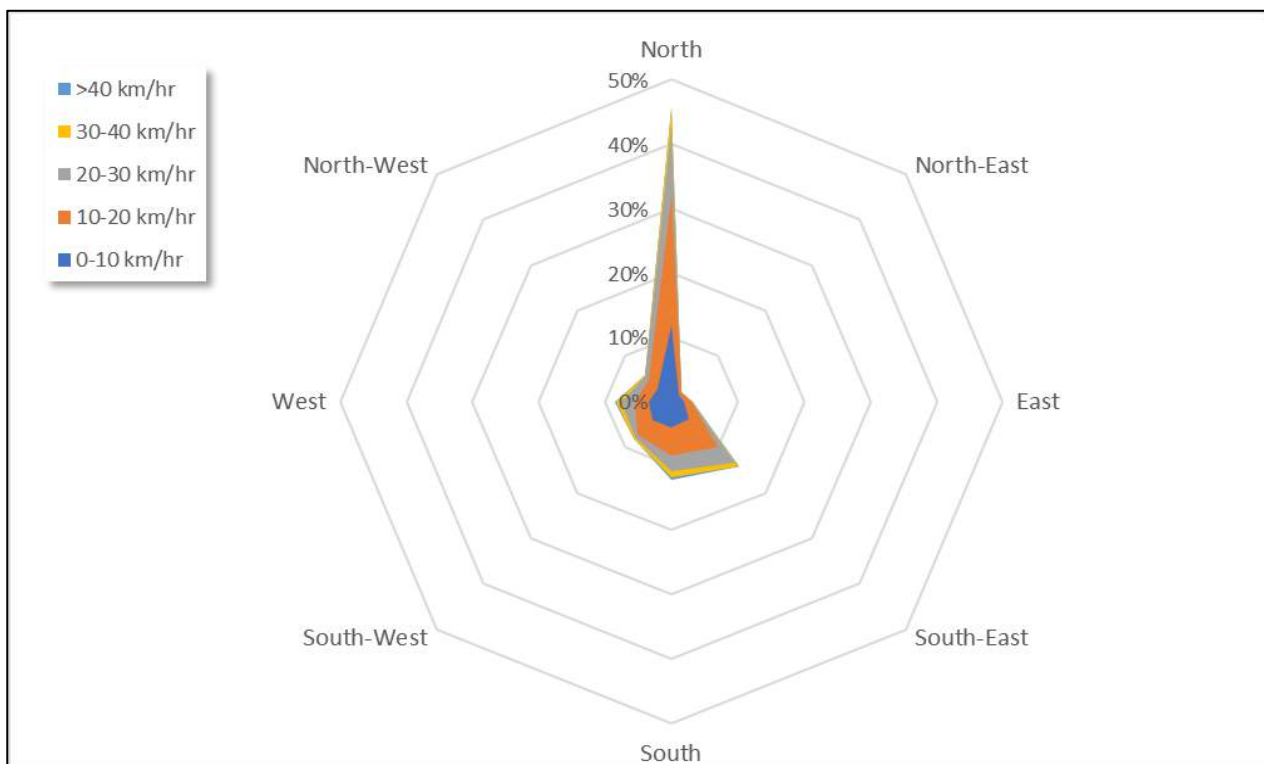


Figure 2.8: Windrose for Lincoln, Broadfield Ews

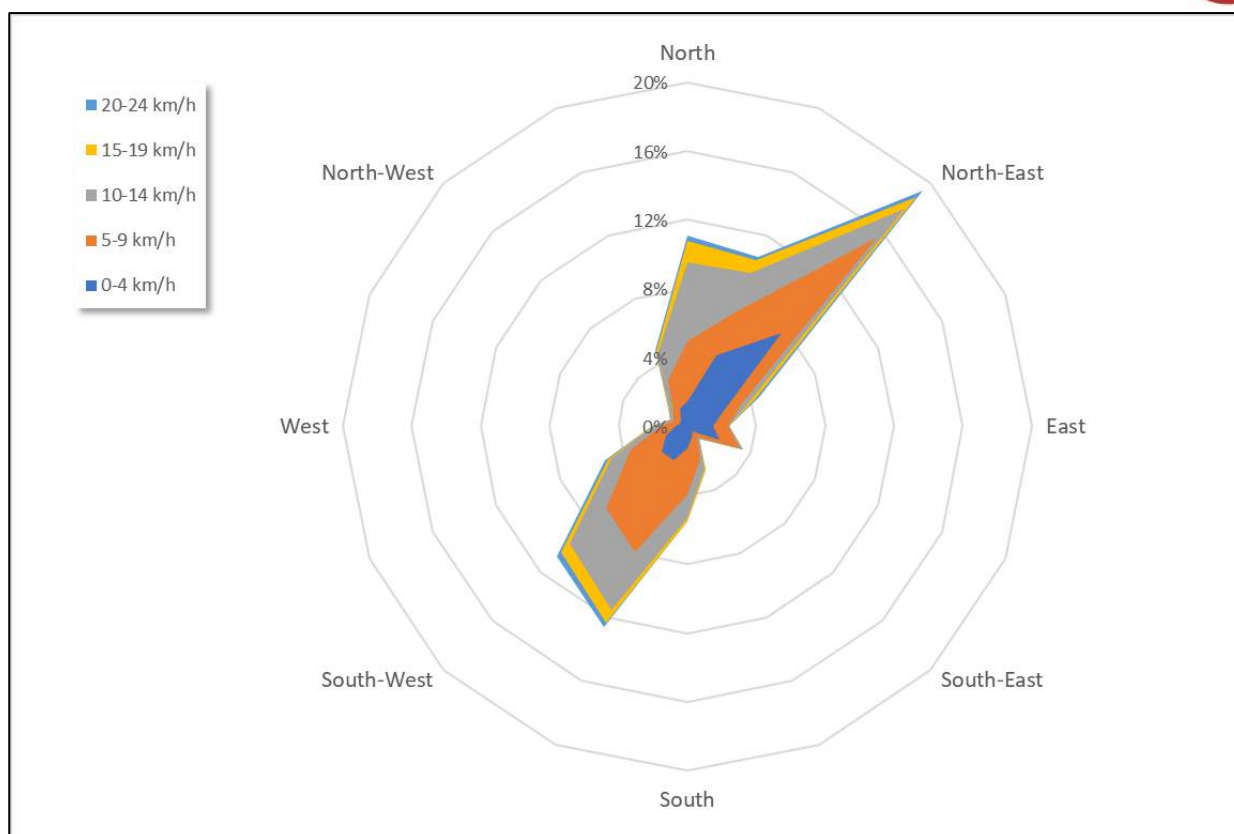


Figure 2.9: Windrose from Wongan Hills Farm Weather Station

Odour propagation is usually greatest during low-wind conditions, typically when winds are less than 10 km/hr (hourly average). Winds of less than 10 km/hr predominately occur from the south west Diamond harbour and north with reference to the Lincoln data, and north east with reference to the farm data. The winds less than 10 km/hr occur 68 % of the time at the farm weather station and encompass the majority of wind speeds.

This wind rose data from onsite shows that the winds are directed by the complex terrain up and down the Kaituna Valley. Correspondingly, cold air drainage katabatic winds, which are most likely to transport odour, will also shown to follow the topography. It is predicted from the topography and wind rose data that the cold air drainage will be down the valley in a south westerly direction.

2.6 Climate

Mean monthly rainfall and Potential Evapotranspiration (PET) is summarised in Table 2.5. The rainfall is averaged from data collected from McQueen's Valley, Station Number 4920 for 1981 – 2021. The PET values are averaged from data collected from Lincoln and Lincoln Broadfield Ews, Station Numbers 4881 and 17603, for 1981 - 1988 and 1990 - 2020.

Table 2.5: Monthly Mean Rainfall and Evapotranspiration (mm)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
Rainfall	54	44	54	62	75	75	70	67	50	61	55	58	724
PET	149	113	87	46	27	17	19	33	59	90	118	135	892
Surplus/ Deficit	-95	-69	-33	16	49	58	51	34	-9	-29	-63	-77	

The average annual rainfall is 724 mm, and significant deficits from evapotranspiration occur in summer. Rainfall generally exceeds evapotranspiration from April to August.



2.7 Surface Water

The farm is located in the Kaituna River catchment. There are no surface community water abstractions on the Kaituna River.

The Kaituna River flows from relatively high in the Banks Peninsula, slowing and meandering as it flows through the flat, valley section.

Environment Canterbury defines the Kaituna River as a Volcanic River, flowing through the Banks Peninsula, which is an area of Regional Significance.

Water quality has been monitored monthly by ECan for Kaituna River, at SQ30782 located opposite the proposed storage pond on the farm as recorded on the LAWA database and shown in Table 2.6.

Table 2.6: Water Quality of the Kaituna River at Kaituna Valley Road (LAWA, 2021)

Parameter	5 Year Median	State
<i>E. coli</i>	276 n/100 ml	In the worst 50% of like sites.
<i>Clarity (black disc)</i>	2.05 m	In the best 50% of like sites.
Total Nitrogen	0.215 g/m ³	In the best 25% of like sites.
Total Oxidised Nitrogen	0.047 g/m ³	In the best 25% of like sites.
Ammoniacal Nitrogen	0.005 g/m ³	In the best 25% of like sites.
Dissolved Reactive Phosphorus	0.0155 g/m ³	In the worst 50% of like sites.
Total Phosphorus	0.031 g/m ³	In the worst 50% of like sites.

The Kaituna River flows into Te Waihora (Lake Ellesmere), which has been described as the most important wetland habitat of its type in New Zealand, nationally important for the protection of wildlife habitat and internationally important for many migratory wader bird species. Birds such as southern crested grebe, Australasian bittern and banded dotterel rely on the lake for particular life stages. Very large numbers of some bird species inhabit the lake at various times, in particular waterfowl, with reports of more than 90,000 birds at the lake. The lake also hosts pest species such as the introduced Canada Geese and Mallards.

The lake and its tributaries support forty-two (42) freshwater, estuarine and marine species of fish including:

- "Commercial" species such as shortfin-eel, flounders and yellow-eye mullet;
- Common bullies and common smelt;
- Inanga which form the basis for the whitebait fishery; and
- Exotic species such as brown trout, perch, tench, rudd and an occasional chinook salmon.

The Kaituna River and Okana Stream flow through the property. Most of these sections of the Kaituna River and Okana Stream are small in area, slow flowing, clear, and stony. The Kaituna River and Okana Stream where running through WHL owned land are fenced off from stock with native and endemic grasses and plants including *Phormium cookianum* (Mountain Flax), *Carex Secta*, and *Juncus Pallidus* (giant rush) cover the riparian margin (Figure 2.10). There are a few ephemeral waterways on the property which are only present after high rainfall events (Figure 2.11).



Figure 2.10: Section of Kaituna River on the property



Figure 2.11: Ephemeral waterway located on the property

2.8 Groundwater Quality

The closest community supply is the at 248 Jones Road, bore M36/20733, is owned by WHL but operated by the Christchurch City Council to supply the Birdlings Flat community, which is over 6 kilometres from the composting barn area. There is no community drinking water protection zone around the proposed land use area in Kaituna Valley.

There are also no community drinking water intakes within 6,000 metres of the proposed landuse area. Environment Canterbury's groundwater quality databases do not have any up to date data



on E.coli or nitrate nitrogen in the local shallow groundwater. There has been no analysis of domestic or stock water bores on this property within the last 5 years (as per Brent Thomas comments).

There are many active bores located on the property, that are used for domestic and stock supply as well as for irrigation. Their details are summarised in Table 2.7. The current water use will not materially change with the inclusion of the barns. Stock water will be provided by the existing bores.

The information about each bore is shown below in the Table 2.7. There are no bores within 200m of the barn area.

Table 2.7: Bore Summary Data

Bore Number	Bore Diameter (mm)	Bore Depth (m)	Bore Use	Well Status
M36/20408	250	88.75	Irrigation	Active
M36/0734	76	21.30	Stock Supply	Not used
M36/3988	200	51.90	Irrigation	Active
M36/1344	200	30	Irrigation, Domestic and Stockwater	Active
M36/20409	300	137	Irrigation	Active
M36/1422	57	46	Domestic Supply	Active
M36/1437	57	71	Stockwater	Active
M36/4289	100	60	Domestic and Stockwater	Active
M36/20411	300	120.5	Irrigation	Active

2.9 Amenity, Cultural, Heritage and Community Values

There are no archaeological sites relevant to this part of the Kaituna Valley listed in the Banks Peninsula Landscape Study for Christchurch City Council (compiled by Boffa and Miskell Limited 2007).

The Kaituna Valley is listed on the Environment Canterbury GIS maps, as within the area of interest of Te Runanga o Koukourarata and Te Runanga o Rapiki. Figure 2.12 shows the Canterbury Maps listed Runanga sensitive areas and the closest silent area.

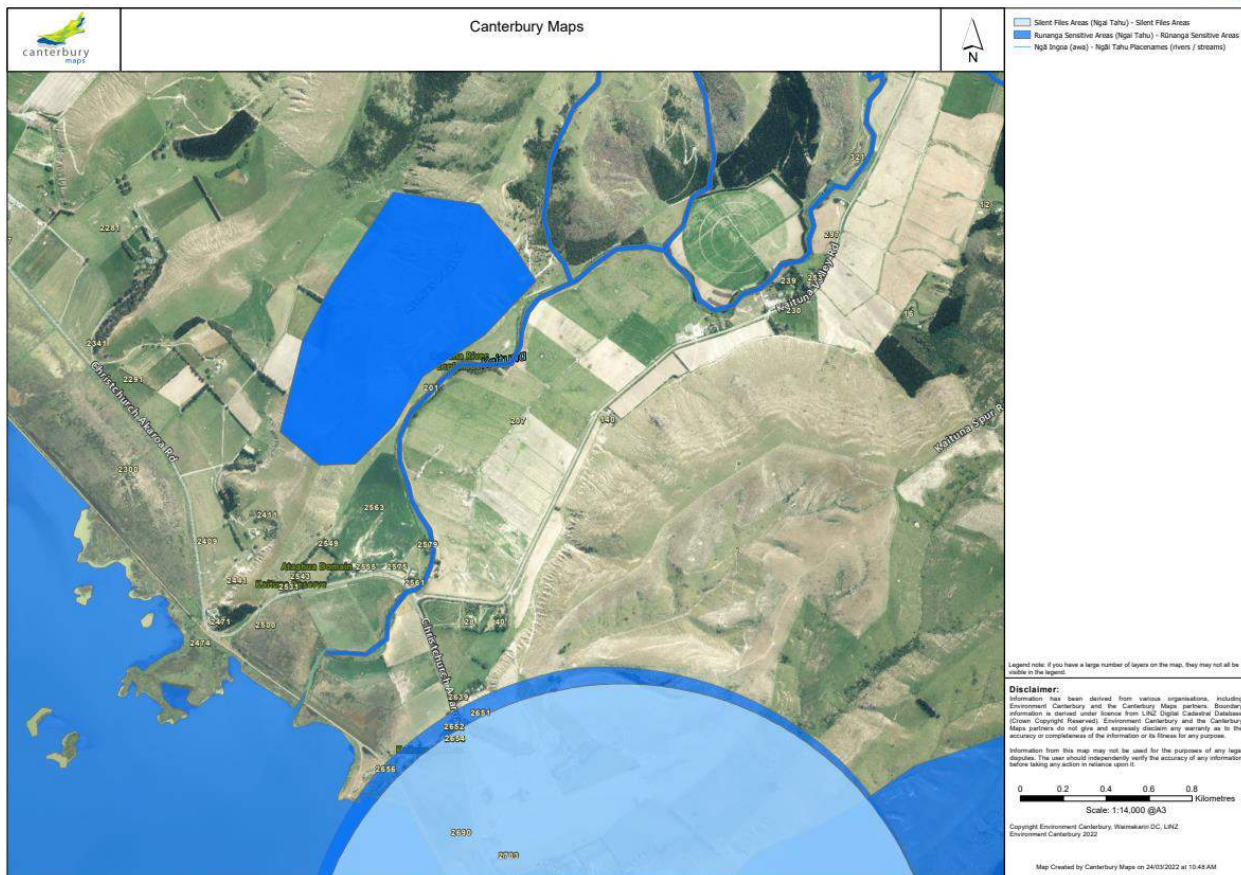


Figure 2.12: Culturally Sensitive Areas

Both Te Waihora and the Kaituna River are "Cultural Landscape/Values Management Areas".

The land through which the river flows has been in pasture for many years. WHL has working closely with Ngāi Tahu and Runanga to plant the Kaituna River riparian strips with natives under the Whakaora Te Waihora Programme (joint Ngāi Tahu & ECan project). These riparian strips have been fenced off from stock.

2.10 Flood Hazards

Environment Canterbury does not have any relevant flood information. Dan Harrison (ECan River Engineer) advises that as Kaituna Valley is not one of ECan's schemes.

The landowners have advised that:

- The paddocks upstream of the DOC site flood;
- The paddocks below the DOC site have some limited flooding;
- Further downstream, the river remains reasonably contained in high flow conditions, although it does go across parts of the southerly paddocks; and
- The previously consented yards area had never flooded in living memory.
- The proposed barn site has never flooded in living memory.

Flow data within the Kaituna River is recorded on the Wangan Hills property at site 67702: Kaituna River at Kaituna Valley Road (Grid Reference: M36:84441-16727) with a record length of from the 10th of June 1986 to the 8th of March 2022. The highest mean daily flow recorded is 42 cumecs recorded on three occasions in 1986, 1993 and 1999. Since 1999, the subsequent largest flow was 33 cumecs in 2012. In the 31 May 2021 high rainfall event, the daily average flow was



27 cumecs. This was the 8th largest average daily flow in the flow record and was not observed by the applicant as causing flooding at the proposed barn location.



3 ACTIVITY DESCRIPTION

3.1 Proposed Activity and Effluent Volumes

The applicant proposes to build four new composting barns on their land. The composting barns will be approximately 20 m wide and 200 to 240 m long. The barns together will hold up to 2,200 animals which come in at 500 kg live weight (LW) and leave at 650-700 kg LW after being in the barn for approximately 120-150 days. There will be animals in the barns all year round.

It is proposed that the animals are kept in the composting pens for 24 hours of the day, but will have restricted access to parts of the barn area while the beds are cultivated. There is no effluent generated from the hard stand feed pad as the stock remain on the compost bedding side of the feed races.

The animals are expected to produce 62.4 L of wastewater a day, with 100% excreted on the bedding litter in the barn which evaporates due to the heat of the composting.

3.2 Compost Volumes

It is planned that compost will be removed every 1-2 years. Nitrogen content of compost is expected to be 0.68% based on analysis of composting barn material by Durie *et al*, 2019 and will be spread on land as a permitted activity under rule CLWRP 5.29.

3.3 Stormwater Volume

The barns combined building area is calculated to be approximately 17,760 m² based on dimensions of 20 m wide and 200 to 240 m long. Assuming an average capture of 600 mm of rain, the roof could be collected approximately 10,650 cubic meters of rainwater per year.

Stormwater will be directed to ground from roof or be collected as a permitted activity under LWRP Rules 5.95 and 5.96.

3.4 Existing Effluent Discharge Area

The farm has an existing discharge area of up to 280 ha as part of WHL existing discharge consent from their stockholding yards (CRC152027). There is no effluent collection from the composting barns.



4 STATUTORY CONSIDERATIONS

4.1 Resource Management Act 1991

The purpose of the Resource Management Act (RMA) 1991 is to promote the sustainable management of natural and physical resources. Generally, activities that affect air, water or land must be authorised either by a rule in a regional plan or by the granting of a resource consent. The relevant sections to this proposal are identified below.

Section 9 (2) of the RMA Restrictions on use of land states that:

- No person may use land in a manner that contravenes a regional rule unless the use —
- (a) is expressly allowed by a resource consent; or
 - (b) is an activity allowed by section 20A.

Section 15(1) of the RMA Discharge of contaminants into environment states that:

- No person may discharge any—
- (a) *contaminant or water into water; or*
 - (b) contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water —
- unless the discharge is especially allowed by a national environmental standard or other regulations, a rule in a regional plan as well as a rule in a proposed regional plan for the same region, or a resource consent."

Section 15 (2) of the RMA Discharge of contaminants into environment states that:

- No person may discharge a contaminant into the air, or into or onto land, from a place or any other source, whether moveable or not, in a manner that contravenes a national environmental standard unless the discharge—
- (a) is expressly allowed by other regulations; or
 - (b) is expressly allowed by a resource consent; or
 - (c) is an activity allowed by section 20A.

Section 15 (2A) of the RMA Discharge of contaminants into environment states that:

- No person may discharge a contaminant into the air, or into or onto land, from a place or any other source, whether moveable or not, in a manner that contravenes a regional rule unless the discharge—
- (a) is expressly allowed by a national environmental standard or other regulations; or
 - (b) is expressly allowed by a resource consent; or
 - (c) is an activity allowed by section 20A.

4.2 National Policy Statement for Freshwater Management 2020

The National Policy Statement for Freshwater Management (NPS-FM, 2020) sets out objectives and policies that direct Regional Councils to manage water in an integrated and sustainable way, while providing for economic growth within set water quantity and quality limits. This is achieved primarily through Regional Plan changes incorporating nationally consistent limits on water quality and values, nationally consistent consideration of matters when determining resource consent applications and monitoring of freshwater quality.



The objective of this National Policy Statement is to ensure that natural and physical resources are managed in a way that prioritizes:

- (a) first, the health and well-being of water bodies and freshwater ecosystems
- (b) second, the health needs of people (such as drinking water)
- (c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

The proposed activity is consistent with the hierarchy of obligations because:

Firstly, the health and well-being of water bodies and freshwater ecosystems is considered. Mitigations such as avoiding discharges, and setbacks to waterbodies and people are proposed. Overall, there will be a less than minor effect on the health and wellbeing of waterbodies. The proposal will not affect the health of people and will not cause the water quality to become unsuitable for human health/recreation. It provides for the social, cultural and economic wellbeing. The proposal allows for increased income and supports jobs on the land. This flows onto benefits for the wider community.

An assessment of the policies of the NPS-FM 2020 is provided in Table 4.1:

Table 4.1: NPS-FM Policy Assessment

Policy	Assessment
1. Freshwater is managed in a way that gives effect to Te Mana o te Wai.	As discussed in AEE, the proposed to have 100% of the time on the composting barn avoids the generation of liquid animal effluent and the associated discharge. There is no change to the water bodies within the property and they will still be able to sustain the full range of environmental, social, cultural and economic values held by Iwi and the community.
2. Tangata whenua are actively involved in freshwater management (including decision-making processes), and Māori freshwater values are identified and provided for.	Māori values have been identified and assessed in the AEE.
3. Freshwater is managed in an integrated way that considers the effects of the use and development of land on a whole-of-catchment basis, including the effects on receiving environments.	The effects on the receiving environment have been assessed in the AEE.
4. Freshwater is managed as part of New Zealand's integrated response to climate change.	Applying the compost will help protect the farm from climate change as it provides nutrients to plants
5. Freshwater is managed through a National Objectives Framework to ensure that the health and well-being of degraded water bodies and freshwater ecosystems is improved, and the health and well-being of all other water bodies and freshwater ecosystems is maintained and (if communities choose) improved.	The use of land for the barns and application of compost to land will not cause a degradation of the Kaituna River and surrounding water ways and it's well-being will be maintained.
6. There is no further loss of extent of natural inland wetlands, their values are protected, and their restoration is promoted.	No loss of natural inland wetlands and their values will be caused as a result of the proposed activities.
7. The loss of river extent and values is avoided to the extent practicable.	No loss of river extent and values will be caused as a result of the proposed activities.
8. The significant values of outstanding water bodies are protected.	N/A – no outstanding water bodies will be impacted.



Policy	Assessment
9. The habitats of indigenous freshwater species are protected.	Habitats of indigenous freshwater species will not be impacted by this proposal
10. The habitat of trout and salmon is protected, insofar as this is consistent with Policy 9.	Trout will not be impacted by the proposed activities and is consistent with Policy 9
11. Freshwater is allocated and used efficiently, all existing over-allocation is phased out, and future over-allocation is avoided.	NA
12 The national target (as set out in Appendix 3) for water quality improvement is achieved.	The proposed activities will not compromise the national targets being achieved/maintained.
13. The condition of water bodies and freshwater ecosystems is systematically monitored over time, and action is taken where freshwater is degraded, and to reverse deteriorating trends.	N/A
14. Information (including monitoring data) about the state of water bodies and freshwater ecosystems, and the challenges to their health and well-being, is regularly reported on and published.	Compliance with existing consent conditions and nutrient load will be monitored
15 Communities are enabled to provide for their social, economic, and cultural well-being in a way that is consistent with this National Policy Statement.	Provides for the social, economic and cultural well-being.

As set out later in this AEE, in relation to water quality and landuse, the change to the environment arising from the proposed activity (relative to the existing farming operation) is anticipated to be less than minor. The proposal is not anticipated to lead to any deterioration in the health of the rivers, streams, lakes and wetlands (with the LWRP further permitting almost all effects and WHL holding resource consents as a part of its existing farming activity that similarly authorize a range of the effects). Similarly, threatened species and mahinga kai will not be impacted by the proposed activity. With no material change to water quality anticipated, the proposal is consistent with the policies and objectives of the National Policy Statement for Freshwater Management.

4.3 National Environmental Standards

National Environmental Standards are regulations that prescribe technical and non-technical standards, methods or other requirements for land use and subdivision, use of the coastal marine area and beds of lakes and rivers, water take and use, discharges, or noise. The relevant national standard that relates to this proposal is the National Environmental standard for Sources of drinking water (NES-DW) and the National Environmental Standard for Freshwater (2020).

4.3.1 National Environmental Standard for Freshwater 2020

In 2020, the government released the new National Environment Standards for Freshwater NES-F). This new national standard includes sections that are relevant to farming activities, so the NES-F 2020 is assessed below. The regulation relevant to this application are presented in Table 4.2:

Table 4.2: Relevant Regulations NES-F 2020

Regulation	Standards	Assessment
9	Feedlots and other stockholding areas: Permitted Activities The use of land on a farm for holding cattle in a feedlot is a permitted activity if it complies with the condition.	Non-complying The proposed activity does not meet condition (3).



Regulation	Standards	Assessment
	<p>(2) The following discharge of a contaminant is a permitted activity if it complies with the condition:</p> <p>(a) the discharge is associated with the use of land on a farm for holding cattle in a feedlot; and</p> <p>(b) the discharge is into or onto land, including in circumstances that may result in the contaminant (or any other contaminant emanating as a result of natural processes from the contaminant) entering water.</p> <p><i>Condition</i></p> <p>(3) The condition is that 90% or more of the cattle held in the feedlot must—</p> <p>(a) be no more than 4 months old; or</p> <p>(b) weigh no more than 120 kg.</p>	
<p>10</p>	<p>Feedlots and other stockholding activities</p> <p>Discretionary activities</p> <p>The use of land on a farm for holding cattle in a feedlot is a discretionary activity if it (a) does not comply with the condition in <u>regulation 9(3)</u>; but</p> <p>(b) complies with the conditions in subclause (3) of this regulation.</p> <p>(2) The following discharge of a contaminant is a discretionary activity if it does not comply with the condition in <u>regulation 9(3)</u> but complies with the conditions in subclause (3) of this regulation:</p> <p>(a) the discharge is associated with the use of land on a farm for holding cattle in a feedlot; and</p> <p>(b) the discharge is into or onto land, including in circumstances that may result in the contaminant (or any other contaminant emanating as a result of natural processes from the contaminant) entering water.</p> <p><i>Conditions</i></p> <p>(3) The conditions are that—</p> <p>(a) the base area of the feedlot must be sealed to a minimum permeability standard of 10^{-9} m/s; and</p> <p>(b) effluent expelled in the feedlot must be collected, stored, and disposed of in accordance with a rule in a regional or district plan, or a resource consent; and</p> <p>(c) the feedlot must be at least 50 m away from any water body, any water abstraction bore, any drain, and the coastal marine area.</p>	<p>Application is consistent with the Conditions 3 (a), (b) and (c) and is considered a Discretionary activity.</p>
<p>13</p>	<p>Stockholding areas other than feedlots:</p> <p>Permitted activities – stockholding areas for larger and older cattle</p> <p>1. The use of land on a farm for holding cattle in a stockholding area (other than a feedlot) is a permitted activity if it—</p> <p>(a) does not comply with the condition in regulation 12(3); but</p> <p>(b) complies with the applicable condition or conditions in subclause (3) or (4) of this regulation.</p> <p>2. The following discharge of a contaminant is a permitted activity if it does not comply with the condition in regulation 12 (3) but complies with the applicable condition or conditions in subclause (3) or (4) of this regulation:</p>	<p>Application is consistent with the Conditions 3 and 4 and considered as permitted activity.</p>



Regulation	Standards	Assessment
	<p>(a) the discharge is associated with the use of land on a farm for holding cattle in a stockholding area (other than a feedlot); and</p> <p>(b) the discharge is into or onto land, including in circumstances that may result in the contaminant (or any other contaminant emanating as a result of natural processes from the contaminant) entering water.</p> <p>Conditions</p> <p>3. The condition is that the holding of cattle in the stockholding area must be undertaken in accordance with the farm's certified freshwater farm plan if—</p> <p>(a) the farm has a certified freshwater farm plan that applies to the holding of cattle in the stockholding area; and</p> <p>(b) a certifier has certified that the adverse effects (if any) allowed for by the plan in relation to the holding of cattle in the stockholding area are no greater than those allowed for by the conditions in subclause (4).</p> <p>(4) In any other case, the conditions are that—</p> <p>(a) the base area of the stockholding area must be sealed to a minimum permeability standard of 10^{-9} m/s; and</p> <p>(b) effluent expelled in the stockholding area must be collected, stored, and disposed of in accordance with a rule in a regional or district plan, or a resource consent; and</p> <p>(c) the stockholding area must be at least 50 m away from any water body, any water abstraction bore, any drain, and the coastal marine area.</p>	
18	Conversions of land on farm to dairy farmland: Permitted activities	N/A – application is not associated with conversion of farm to dairy farmland.
19	Conversions of land on farm to dairy farmland: Discretionary activities	N/A
20	Irrigation of dairy farmland: Permitted activities	N/A – application is not for the irrigation of dairy farmland
21	Irrigation of dairy farmland: Discretionary activities	N/A
22	Use of land as dairy support land: <i>Permitted Activities</i>	N/A
23	Use of land as dairy support land: <i>Discretionary Activities</i>	N/A

The proposed activity meets the conditions associated with Regulation 10 and a consent is required as a discretionary activity.

For completeness it is noted that this application has been approached on the basis that Regulation 10 falls within Subpart 1 of the NES-F (and therefore there is no need to consider the additional consenting considerations of, for example, regulation 24 in assessing the effects of this proposal) – noting in any case the discharge of compost to land is a permitted activity under the LWRP and consent has not been sought for that aspect of the proposal.

4.4 National Environmental Standard for Sources of Drinking Water (NESDW)

The NES-DW requires regional authorities to ensure the effects on community water supply and sources are considered in decision on resource consents and regional plans.



There are no community drinking water sites within the property.

4.5 Canterbury Regional Policy Statement

The Canterbury Regional Policy Statement (RPS) became operative in 2013. The RPS provides a framework for the manner in which Canterbury's natural and physical resources will be managed. It directs regional and district plans to address the cumulative effects of resource use and development. It considers the community's aspirations and the actions required to achieve success, while encouraging people to work together. It also recognises our connections to our environment by encompassing the Ngāi Tahu philosophy of "ki uta ki tai" – from the mountains to the sea.

The vision and principles of the CRPS are embodied in the LWRP, Regional Air Plan and Iwi Management Plans, where they are specific to the management in those areas.

The chapters and objectives in the CRPS that are considered to most closely relate to this proposal as discussed below, however this list is not exhaustive. The relevant objectives and policies are presented in Table 4.3, Table 4.4, and Table 4.5.

Chapter 7 Freshwater

Table 4.3: CRPS Chapter 7 Objectives and Policies

Objectives
<p>Objective 7.2.1 – (Sustainable management of fresh water) – ensure water resources are sustainably managed, while safeguarding the life-supporting capacity of ecosystems and the mauri of fresh water; the natural character of surface water bodies.</p> <p>Objective 7.2.3 - The overall quality of freshwater in the region is maintained or improved, and the life supporting capacity, ecosystem processes and indigenous species and their associated fresh water ecosystems are safeguarded.</p> <p>Objective 7.2.4 - Fresh water is sustainably managed in an integrated way within and across catchments, between activities, and between agencies and people with interests in water management in the community, considering:</p> <ul style="list-style-type: none"> a) the Ngāi Tahu ethic of Ki Uta Ki Tai (from the mountains to the sea); b) the interconnectivity of surface water and groundwater; c) the effects of land uses and intensification of land uses on demand for water and on water quality; and d) kaitiakitanga and the ethic of stewardship; and <p>any net benefits of using water, and water infrastructure, and the significance of those benefits to the Canterbury region.</p>
Policies
<p>7.3.1 - To identify the natural character values of fresh water bodies and their margins in the region and to:</p> <ul style="list-style-type: none"> a) preserve natural character values where there is a high state of natural character; b) maintain natural character values where they are modified but highly valued; and c) improve natural character values where they have been degraded to unacceptable level <p>7.3.3 - To promote, and where appropriate require the protection, restoration and improvement of lakes, rivers, wetlands and their riparian zones and associated Ngāi Tahu values, and to:</p> <ul style="list-style-type: none"> a) identify and protect areas of significant indigenous vegetation and significant habitats, sites of significant cultural value, wetlands, lakes and lagoons/Hapūa, and other outstanding water bodies; and b) require the maintenance and promote the enhancement of indigenous biodiversity, inland basin ecosystems and riparian zones; and c) promote, facilitate or undertake pest control. <p>7.3.6 - In relation to water quality:</p>



1	<i>to establish and implement minimum water quality standards for surface water and groundwater resources in the region, which are appropriate for each water body considering:</i>
a)	<i>the values associated with maintaining life supporting capacity, ecosystem processes and indigenous species including their associated ecosystems, and natural character of the water body;</i>
b)	<i>any current and reasonably foreseeable requirement to use the water for individual, marae or community drinking water or stockwater supplies, customary uses or contact recreation;</i>
c)	<i>the cultural significance of the fresh water body and any conditions or restrictions on the discharge of contaminants that may be necessary or appropriate to protect those values; and</i>
d)	<i>any other current or reasonably foreseeable values or uses; and</i>
2	<i>to manage activities which may affect water quality (including land uses), singularly or cumulatively, to maintain water quality at or above the minimum standard set for that water body; and</i>
3	<i>where water quality is below the minimum water quality standard set for that water body, to avoid any additional allocation of water for abstraction from that water body and any additional discharge of contaminants to that water body, where any further abstraction or discharges, either singularly or cumulatively, may further adversely affect the water quality in that water body:</i>
a)	<i>until the water quality standards for that water body are met; or</i>
b)	<i>unless the activities are undertaken as part of an integrated solution to water management in the catchment in accordance with Policy 7.3.9, which provides for the redress of water quality within that water body within a specified timeframe.</i>
<i>7.3.7 - To avoid, remedy or mitigate adverse effects of changes in land uses on the quality of fresh water (surface or ground) by:</i>	
a)	<i>identifying catchments where water quality may be adversely affected, either singularly or cumulatively, by increases in the application of nutrients to land or other changes in land use; and</i>
b)	<i>controlling changes in land uses to ensure water quality standards are maintained or where water quality is already below the minimum standard for the water body, it is improved to the minimum standard within an appropriate timeframe.</i>
<i>7.3.11: In relation to existing activities and infrastructure:</i>	
<i>1. to recognise and provide for the continuation of existing hydro-electricity generation and irrigation schemes, and other activities which involve substantial investment in infrastructure; but</i>	
<i>2. require improvements in water use efficiency and reductions in adverse environmental effects of these activities, where appropriate.</i>	

As set out in Section 5 of this document, the potential adverse effects of the Proposal on surface water quality are less than minor. The potential adverse effects from the proposed activity has been assessed to be less than minor overall due to management measures to prevent runoff and leaching from adversely affecting water quality and ecosystem health. Water quality will be maintained within parameters of the current farming landuse consent and permitted activity rules (as might apply).



Chapter 14 Air Quality

Table 4.4: CRPS Chapter 14 Objectives and Policies

Objectives	Policies
<p><i>4.2.1 - Maintain or improve ambient air quality so that it is not a danger to people's health and safety, and reduce the nuisance effects of low ambient air quality.</i></p>	<p><i>14.3.1 - In relation to ambient air quality:</i></p> <p><i>To set standards to maintain ambient air quality in Canterbury based on concentrations of contaminants that cause adverse health effects and nuisance</i></p> <p><i>Where existing ambient air quality is higher than required by the standards set, to only allow the discharge of contaminants into air where the adverse effects of the discharge on ambient air quality are minor.</i></p> <p><i>To give priority to ensuring that PM10 ambient air quality improvements are achieved in Rangiora, Kaiapoi, Christchurch, Ashburton, Timaru, Geraldine and Waimate</i></p>
<p><i>14.2.2 - Enable the discharges of contaminants into air provided there are no significant localised adverse effects on social, cultural and amenity values, flora and fauna, and other natural and physical resources.</i></p>	<p><i>14.3.3 - To set standards, conditions and terms for discharges of contaminants into the air to avoid, remedy or mitigate localised adverse effects on air quality.</i></p> <p><i>14.3.5 - In relation to the proximity of discharges to air and sensitive land-uses:</i></p> <p><i>To avoid encroachment of new development on existing activities discharging to air where the new development is sensitive to those discharges, unless any reverse sensitivity effects of the new development can be avoided or mitigated.</i></p> <p><i>Existing activities that require resource consents to discharge contaminants into air, particularly where reverse sensitivity is an issue, are to adopt the best practicable option to prevent or minimise any actual or likely adverse effect on the environment.</i></p> <p><i>New activities which require resource consents to discharge contaminants into air are to locate away from sensitive land uses and receiving environments unless adverse effects of the discharge can be avoided or mitigated.</i></p>

The Regional Air Plan is based on these CRPS objectives, which gives effect to the NES for Air Quality and outlines further objectives and policies to ensure air quality in the region is protected. This proposed housing of animals and application of compost to land will not change the effects in relation to air quality and will not breach the national environmental standards.



Chapter 15 Soils

Table 4.5: CRPS Chapter 15 Objectives and Policies

Objectives	Policies
15.2.1 <i>Maintenance and improvement of the quality of Canterbury's soil to safeguard their mauri, their life supporting capacity, their health and their productive capacity.</i>	15.3.1 <i>Avoid remedy or mitigate soil degradation</i> <i>In relation to soil:</i> <ol style="list-style-type: none"> <i>1. to ensure that land-uses and land management practices avoid significant long-term adverse effects on soil quality, and to remedy or mitigate significant soil degradation where it has occurred, or is occurring; and</i> <i>2. to promote land-use practices that maintain and improve soil quality.</i>

This proposal will protect the health of the region's soils. A discharge of compost derived from the barns and associated feed pad to soils will provide the addition of organic matter which can improve soil structure, fertility, and water holding capacity.

4.6 Canterbury Land and Water Regional Plan

The LWRP is the operative plan that aims to provide clear direction on how land and water should be managed in the region. It promotes the sustainable management of Canterbury's rivers, lakes and water resources.

Objectives from the Regional Water Plan deemed relevant have been assessed against the proposed activity in Table 4.6.



Table 4.6: CLWRP Relevant Objectives

OBJECTIVE	ASSESSMENT
3.1 - Land and water are managed as integrated natural resources to recognise and enable Ngāi Tahu culture, traditions, customary uses and relationships with land and water.	YES – Iwi Management Plans have been considered.
3.3 - Nationally and regionally significant infrastructure is enabled and is resilient and positively contributes to economic, cultural and social wellbeing through its efficient and effective operation, on-going maintenance, repair, development and upgrading.	YES – The proposal will allow for the successful operation of Wangan Hills Ltd which is a significant infrastructure contributing to the economic, cultural and social wellbeing of a large community in Canterbury.
3.5 - Land uses continue to develop and change in response to socio-economic and community demand.	YES - The proposed land use is in response to community demand and allows for future development.
3.6 - Water is recognised as essential to all life and is respected for its intrinsic values.	YES – The proposal will not degrade or impact on the water quality or quantity.
3.8 -The quality and quantity of water in fresh water bodies and their catchments is managed to safeguard the life-supporting capacity of ecosystems and ecosystem processes, including ensuring sufficient flow and quality of water to support the habitat and feeding, breeding, migratory and other behavioural requirements of indigenous species, nesting birds and, where appropriate, trout and salmon.	YES - Proposal is not for the discharge of contaminants into surface water ways.
3.8A - High quality fresh water is available to meet actual and reasonably foreseeable needs for community drinking water supplies.	YES – The proposal will not impact on community water drinking supplies. There are not protection zones within the disposal area.
3.13 Groundwater resources remain a sustainable source of high-quality water which is available for abstraction while supporting base flows or levels in surface water bodies, springs and wetlands and avoiding salt-water intrusion.	YES – The proposal will not impact on groundwater quality due to the sealing of the barn floors and the naturally warm processes within the compost bed which cause evaporation of moisture.
3.15 Those parts of lakes and rivers that are valued by the community for recreation are suitable for contact recreation.	YES - The proposal will not cause water to be unsuitable for contact recreation.
3.17 The significant indigenous biodiversity values of rivers, wetlands and hāpua are protected.	YES - The proposal will not impact on indigenous biodiversity values of rivers, wetland or hapua.
3.19 Natural character values of freshwater bodies, including braided rivers and their margins, wetlands, hāpua and coastal lagoons, are protected.	YES - The proposal will not affect the natural characters values of any freshwater bodies.
3.23 - Soils are healthy and productive, and human-induced erosion and contamination are minimised.	YES – The proposal will improve soil health through the return of nutrients and organic matter.
3.24 - All activities operate at good environmental practice or better to optimise efficient resource use and protect the region's fresh water resources from quality and quantity degradation.	YES - There is no liquid discharge to land.



The policy sections from the CLWRP most relevant are discharges of contaminants to land or water and discharges of collected animal effluent. These have been assessed in Table 4.7.

Table 4.7: CLWRP Relevant Policies

POLICIES	ASSESSMENT
4.12- There are no direct discharges to surface water bodies or groundwater of: (a) untreated sewage, wastewater (except as a result of extreme weather related overflows or system failures) or bio-solids; (b) solid or hazardous waste or solid animal waste; (c) animal effluent from an effluent storage facility or a stock holding area; (d) organic waste or leachate from storage of organic material; and (e) untreated industrial or trade waste.	YES - There is no discharge of liquid effluent associated with the proposed activities. The proposal is the best option for disposal of animal effluent.
4.33 - Any system to store, treat and dispose of animal effluent onto land has sufficient storage capacity to avoid the need to dispose of effluent when soil moisture or weather conditions may result in effluent run-off into surface water or leaching into groundwater and to avoid fugitive discharges in the case of equipment or system failure.	YES - The removal of compost from the barns to land can be completed at times best suited to the soil moisture conditions.

4.7 Canterbury Air Regional Plan

The Regional Air Plan was made operative in 2017 and it contains 10 objectives which relate to air quality in Canterbury. The relevant objectives have been assessed in Table 4.8.

Table 4.8: CARP Relevant Objectives

Number	Objective	Assessment
5.1	Air quality protects the mauri and life supporting capacity of the environment.	YES - The location and design of the barn roof pitch creates high levels of ventilation.
5.2	Ambient air quality provides for the health and wellbeing of the people of Canterbury.	YES - The barns are located a large distance from sensitive activities.
5.3	Competing demands for the use of the air resource of Canterbury are accommodated while unacceptable degradation of ambient air quality is avoided.	YES - The barns are located a large distance from sensitive activities.
5.4	Degraded ambient air quality is improved over time and where ambient air quality is acceptable it is maintained.	YES - The location and design of the barn roof pitch creates high levels of ventilation, preventing degradation of air quality.
5.5	Air quality is managed in a way that provides for the cultural values and traditions of Ngāi Tahu.	YES - The location and design of the barn roof pitch creates high levels of ventilation.
5.6	Amenity values of the receiving environment are maintained.	YES - The location and design of the barn roof pitch creates high levels of ventilation, preventing degradation of air quality.
5.7	Discharges from new activities are appropriately located to take account of adjacent land uses and sensitive activities.	YES - The location and design of the barn roof pitch creates high levels of ventilation, preventing degradation of air quality.



Number	Objective	Assessment
5.8	Discharges from existing activities are managed in response to evolving characteristics of the receiving environment.	N/A
5.9	Offensive and objectionable effects and noxious or dangerous effects on the environment are generally avoided.	YES - The location and design of the barn roof pitch creates high levels of ventilation, preventing degradation of air quality.
5.10	Developments and innovation in technology that have the potential to improve air quality are enabled	YES - The location and design of the barn roof pitch creates high levels of ventilation, preventing degradation of air quality.

The relevant policies which set out how the objectives may be achieved is included in Table 4.9.

Table 4.9: CARP Relevant Policies

Number	Policy	Assessment
6.1	Discharges of contaminants into air, either individually or in combination with other discharges, do not cause: adverse effects on human health and wellbeing; or adverse effects on the mauri and life supporting capacity of ecosystems, plants or animals; or significantly diminished visibility; or significant soiling or corrosion of structures or property.	Yes – The location and regular aeration of the compost avoids significant odour generation.
6.2	Recognise the value of air quality as a taonga to Tāngata whenua and manage adverse effects of discharges into air on wāhi tapu, wāhi taonga, and places of significance to Ngāi Tahu.	Yes – The location and regular aeration of the compost avoids significant odour generation.
6.6	Maintain <i>ambient air</i> quality in locations where the quality is acceptable when assessed against an <i>ambient air</i> quality standard set in a national <i>ambient air</i> quality standard or guideline.	Yes – The location and regular aeration of the compost avoids significant odour generation.
6.8	Offensive and objectionable effects are unacceptable and actively managed by plan provisions and the implementation of management plans.	Yes – The location and regular aeration of the compost avoids significant odour generation.
6.12	Where activities locate appropriately to mitigate adverse effects on air quality a longer consent duration may be available to provide on-going operational certainty.	Yes – Effects are appropriately managed with the proposed location and management practices that will avoid significant odour generation.
6.13	Minimise the cumulative effects of discharges of contaminants into air by requiring: a. permitted discharges to apply good environmental practices; and b. discharges allowed by a resource consent to apply the best practicable option.	Yes – The scale of the proposal is appropriate for the rural environment. There are no other activities of a similar nature within many kilometers of the property.
6.14	Recognise the contribution of nationally and regionally significant infrastructure to people's social and economic wellbeing and provide for discharges associated with the development, operation, and maintenance of that infrastructure.	Yes – The proposal contributes positively to the community wellbeing by creating long-term employment opportunities.



4.8 Canterbury Land and Water Regional Plan Rules

4.8.1 Stock Holding, Effluent Storage and Application to Land Stock Holding

The use of land for stock holding areas is governed by Rule 5.31:

Rule 5.31 – The use of land for a stock holding activity is a permitted activity, providing the following conditions are met:

Table 4.10 contains an assessment of the proposed activities against Rule 5.31.

Table 4.10: Compliance with Rule 5.31

Condition No.	Condition Details	Will the Proposed Activity Comply?
1	1. The stock holding area is not: (a) within 20 m of a surface water body, a bore used for water abstraction or the Coastal Marine Area; or (b) within 100 m of a pre-existing dwelling or place of assembly on another property; and 1.A The stock holding area is not located within a Group or Community Drinking-water Protection Zone as set out in Schedule 1.	Yes – Stock holding areas will be situated such that they comply with the requirements of this condition.
2	2. All liquid animal effluent, wash-down water or storm-water containing animal effluent is collected and disposed of to an animal effluent collection and storage system authorised under Rules 5.33 to 5.37 or an existing discharge permit.	N/A, no liquid effluent will be generated requiring collected and disposed.
3	The base of any stock holding area located on land over an unconfined or semi-confined aquifer shall be sealed such that seepage into land does not exceed one millimetre per day.	Yes – Stock holding areas will be constructed such that they comply with the requirements of this condition.

The composting barn complies with the requirements of Rule 5.31, so is considered to be a Permitted Activity.

4.8.2 Effluent Storage

The design of the barns and the use of composting material for all areas of stock holding avoids the generation of liquid effluent. Therefore no storage or discharge of liquid effluent is proposed.

4.8.3 Stormwater Management

The discharge of stormwater into water or onto land into water is governed by Rule 5.95 of the LWRP:



*Rule 5.95: The discharge of stormwater, other than into or from a reticulated stormwater system, into a river, lake, wetland or artificial watercourse or onto or into land in circumstances where a contaminant may enter a river, lake, wetland, or artificial watercourse is a **permitted activity**, provided the following conditions are met:*

Table 4.11 contains an assessment of the proposed activity against Rule 5.95.

Table 4.11: Compliance with Rule 5.95

Condition No.	Condition Details	Will the Proposed Activity Comply?
1	The discharge is not from, into or onto contaminated or potentially contaminated land	Yes - The site has no hazardous activities listed on the Listed Land Register.
2	The discharge is not into: (a) a water race, as defined in Section 5 of the Local Government Act 2002; and (b) a wetland, unless the wetland is part of a lawfully established stormwater or wastewater treatment system; and (c) a waterbody that is Natural State, unless the discharge was lawfully established before 1 November 2013	Yes - a) There will not be any discharge into a water race b) There will not be any discharge into a wetland c) There will not be any direct stormwater discharge to a waterbody. The preference is that stormwater discharged to land following collection which is covered by Rule 5.96.
3	The discharge does not result in an increase in the flow in the receiving waterbody at the point of discharge of more than 1% of a flood event with an Annual Exceedance Probability of 20% (one in five year event);	Yes - Stormwater is collected, is from a small area compared to the upstream, catchment of the Kaituna River.
4	The discharge meets the water quality standards in Schedule 5 after reasonable mixing with the receiving waters, in accordance with Schedule 5; and	Yes - Stormwater is collected from the roof, therefore there will not be any effects on the quality of the potential receiving water.
5	The concentration of total suspended solids in the discharge shall not exceed: (a) 50 g/m ³ , where the discharge is to any spring-fed river, Banks Peninsula river, or to a lake except when the background total suspended solids in the waterbody is greater than 50 g/m ³ in which case the Schedule 5 visual clarity standards shall apply; or (b) 100 g/m ³ where the discharge is to any other river or to an artificial watercourse except when the background total suspended solids in the waterbody is greater than 100 g/m ³ in which case the Schedule 5 visual clarity standards shall apply; and	Yes - Stormwater is collected from the roof, therefore the stormwater quality will meet all of these limits.
6	The discharge to water is not within a Community Drinking Water Protection Zone as set out in Schedule 1; and	Yes - The property is not within a Community Drinking Water Protection Zone as set out in schedule 1.



Condition No.	Condition Details	Will the Proposed Activity Comply?
7	The discharge does not occur where there is an available reticulated stormwater system.	Yes - There is no reticulated stormwater system available.

The discharge of stormwater onto land is governed by Rule 5.96 of the LWRP:

*Rule 5.96: The discharge of stormwater, other than into or from a reticulated stormwater system, onto or into land where contaminants may enter groundwater is a **permitted activity**, provided the following conditions are met:*

Table 4.12 contains an assessment of the proposed activity against Rule 5.96.

Table 4.12: Compliance with Rule 5.96

Condition No.	Condition Details	Will the Proposed Activity Comply?
1	The discharge is not from, into or onto contaminated or potentially contaminated land	Yes - The site has no hazardous activities listed on the Listed Land Register.
2	The discharge: (a) does not cause stormwater from up to and including a 24 hour duration 10% Annual Exceedance Probability rainfall event to enter any other property; and (b) does not result in the ponding of stormwater on the ground for more than 48 hours, unless the pond is part of the stormwater treatment system; and (c) is located at least 1 m above the seasonal high water table that can be reasonably inferred for the site at the time the discharge system is constructed; and (d) is only from land used for residential, educational or rural activities; and (e) does not occur where there is an available reticulated stormwater system, except where incidental to a discharge to that system; and (f) is not from a system that collects and discharges stormwater from more than five sites.	Yes - a) the area of the roof and hardstand is small in context of the wider catchment. b) The stormwater system will be designed to avoid ponding. c) The stormwater system will be designed so that the discharge will be located at least 1 m above the seasonal high water table. d) The land is only used for rural activities. e) There is no reticulated stormwater system available. f) The discharge is not from a system that collects and discharges from more than five sites.

The management and discharge of stormwater is assessed as a permitted activity for discharge to land and into surface water, or onto land and into groundwater. No consent is required.



4.8.4 Nutrient Management

Section 11 of the LWRP outlines regulation for nitrogen allocation framework in the Selwyn – Te Waihora Region. The applicant's property is within the Selwyn Te Waihora Subregion, and therefore Section 11 is relevant to this variation consent application. Accordingly, Rule 11.5.8 is applied with additional regional Rule 11.5.4.

Rule 11.5.4: Any adverse effects on mahinga kai, wāhi tapu or wāhi taonga within the Cultural Landscape/Values Management Area.

*Rule 11.5.8: From 1 January 2017, the use of land for a farming activity in the Selwyn Te Waihora subregion is a **permitted activity**, provided the following conditions are met.*

Table 4.13: Compliance with Rule 11.5.8 and 11.5.4

Condition No.	Condition Details	Will the Proposed Activity Comply?
11.5.8 (1)	The nitrogen loss calculation for the property does not exceed 15 kg per hectare per annum; and	Yes – Overseer modelling suggested the loss of 8 to 9 kg N/ha across the property.
(2)	No part of the property is located within the Phosphorus Sediment Risk Area as shown on the Planning Maps	Complies
(3)	No part of the property is located within the Lake Area in the Cultural Landscape/Values Management Area	Complies for the area of effluent application
(4)	The practices in Schedule 24 are being implemented and the information required is recorded in accordance with Schedule 24, and supplied to Canterbury Regional Council on request	Complies
11.5.4 (additional regional rule)	Any adverse effects on mahinga kai, wāhi tapu or wāhi taonga within the Cultural Landscape/Values Management Area.	Yes - The proposed barns and compost application area are not located within this area. WHL is actively working with Ngai Tahu on the riparian management contributing to Cultural Landscape/Values Management Area adjacent to Lake Te Waihora

The property's landuse for farming is authorised by consent CRC213679 and no additional consent for nutrient management is required.

4.9 Canterbury Air Regional Plan Rules

The proposal to house 2,200 animals within composting barns and the application of the composted bedding material to land triggers an assessment against Canterbury Air Regional Plan (CARP) rules 7.70, 7.71, 7.73 and 7.74.

While rule 7.35 and 7.36 manage the handling of bulk solid materials which include composts, these rules are not considered to apply to the proposed activity as the barn composted bedding material includes animal effluent which is correctly managed under rule 7.73 and 7.74.



Table 4.14: Compliance with CARP Rules 7.70, 7.71, 7.73 and 7.74

Condition No.	Condition Details	Will the Proposed Activity Comply?
7.70	<p>The discharge of contaminants into air from the accommodation of more than 30 cattle (excluding calves) in a barn or other roofed structure, whether enclosed or not, is a permitted activity provided the following conditions are met:</p> <ol style="list-style-type: none"> 1. The discharge does not cause an offensive or objectionable effect beyond the boundary of the property of origin, when assessed in accordance with Schedule 2; and 2. The discharge is located: <ol style="list-style-type: none"> (a) at least 200m from the property boundary; and (b) 500m from a sensitive activity on another property; and (c) 1000m from any land zoned for urban residential use at the date the discharge commenced; or 3. Where the discharge does not comply with condition 2: <ol style="list-style-type: none"> (a) the discharge was existing on 28 February 2015; and (b) a record of the number of cattle housed in that structure as at 28 February 2015 is provided to the CRC on request; and (c) where the number of cattle has increased compared to the number of cattle present prior to 28 February 2015 an odour management plan is prepared in accordance with Schedule 2 and implemented by the person responsible for the discharge into air. 	<p>No – 11.4 % of the total barn area is located within 500m of a sensitive activity.</p>
7.71	<p>The discharge of contaminants into air from the accommodation of more than 30 cattle (excluding calves) in a barn or other roofed structure, whether enclosed or not, that does not comply with condition 2 or 3 of Rule 7.70 is a restricted discretionary activity</p> <p><i>The exercise of discretion is restricted to the following matters:</i></p> <ol style="list-style-type: none"> 1. The quantity, quality and type of discharge into air and any effects arising from that discharge, including cumulative effects; and 2. The methods to control the discharge and avoid, remedy or mitigate any adverse effects, including plant and equipment; and 3. The quality of, compliance with and auditing of any Odour Management Plan; and 4. The location of the discharge, including proximity to sensitive activities, wāhi tapu, wāhi taonga or places of significance to Ngāi Tahu; and 5. The matters set out in Rule 7.2; and 6. Any effect on the environment of not meeting the condition or conditions of the particular rule contravened; and 	<p>The activity can meet the conditions of rule 7.71 as demonstrated within this AEE and is therefore a restricted discretionary activity.</p>



Condition No.	Condition Details	Will the Proposed Activity Comply?
	<p>7. Whether the conditions of the rule, when considered as a package, remain effective; and</p> <p>8. Mitigation methods available to minimise any actual or potential environmental effects on the efficacy of the package of conditions</p>	
7.73	<p>The discharge of contaminants into air from the collection, storage, treatment and application of liquid and slurry animal effluent or solid animal effluent onto production land, is a permitted activity provided the following conditions are met:</p> <ol style="list-style-type: none"> 1. The discharge does not cause an offensive or objectionable effect beyond the boundary of the property of origin when assessed in accordance with Schedule 2; and 2. From 1 January 2017, an odour management plan is prepared in accordance with Schedule 2 and implemented by the person responsible for the discharge into air; and 3. The odour management plan is supplied to the CRC on request; and 4. A record of all effluents discharged for the previous 3 months is kept by the person responsible for the discharge and provided to the CRC on request. The record must include: <ol style="list-style-type: none"> (a) the type of effluent applied to land; and (b) the location of the application; and (c) the estimated daily quantity of effluent discharged at each location; and (d) the wind direction at the time of application. 	<p>Complies – An odour management plan accompanies the AEE. WHL has a large property which creates the opportunity to carefully plan the application of composted bedding material and solid animal effluent to avoid adverse effects.</p>
7.74	<p>The discharge of contaminants into air from the collection, storage, treatment and application of liquid and slurry animal effluent or solid animal effluent onto production land that does not comply with one or more of conditions 2, 3, or 4 of Rule 7.73 is a restricted discretionary activity. The exercise of discretion is restricted to the following matters:</p> <ol style="list-style-type: none"> 1. The quantity, quality and type of discharge into air and any effects arising from that discharge, including cumulative effects; and 2. The methods to control the discharge and avoid, remedy or mitigate any adverse effects, including the odour management plan; and 3. The location of the discharge, including proximity to sensitive activities, wāhi tapu, wāhi taonga or places of significance to Ngāi Tahu; and 4. The matters set out in Rule 7.2; and 5. Any effect on the environment of not meeting the condition or conditions of the particular rule contravened; and 6. Whether the conditions of the rule, when considered as a package, remain effective; and 7. Mitigation methods available to minimise any actual or potential environmental effects on the efficacy of the package of conditions. 	<p>N/A - Does not apply as the activity can meet conditions of 7.73</p>



This assessment has determined that the proposed activity and location do not fully meet the permitted activity rule conditions. The potential source of odour from housing more than 30 cattle will overlap the 500 m radius of a sensitive activity; which in this case is the area within 20m of the façade of an occupied dwelling, therefore breaching rule 7.70(2)(b) and requiring a consent as a restricted discretionary activity under Rule 7.71.

4.10 Iwi Management Plan

Ngai Tahu Freshwater Policy Statement and The Mahaanui Iwi Management Plan 2013 are the relevant Iwi planning documents for this proposal.

The relevant provisions in the Ngai Tahu Freshwater Policy Statement are the Mauri Objective, Kaitiakitanga Objective, and Mahinga Kai Objective.

The focus of this freshwater policy statement is the management of freshwater resources within the rohe (territory) of Ngāi Tahu. It outlines the environmental outcomes sought by Ngāi Tahu and the means, such as working with resource management agencies, to achieve these outcomes. Water quality is covered in Section 4.3.2 of the Freshwater policy Statement. Protection of the mauri of a waterbody is encouraged through the mitigation of environmental effects resulting from the discharge of human effluent. In this proposal there is no discharge of animal effluent as this is retained within the compost, while there is a discharge to air from the barns and associated land use that have been assessed. The assessment outcomes is that the proposed activity will have a no more than minor effect.

The Mahaanui Iwi Management Plan is the current Iwi management plan for the district. It contains a comprehensive suite of policies and objectives addressing the range of resource management matters of significance to tangata whenua.

The purpose of the Plan is to provide a document that can assist Te Rūnanga o Ngai Tahu to effectively participate in natural resource planning. It helps councils determine the nature and extent of consultation required with respect to specific activities or areas of importance.

The policies within the Iwi Management Plan are outlined in several parts. Part 5 outlines the regional objectives, which is divided into eight policy sections addressing the key issues. Part 6 is divided into 12 geographical sections and the policies within these sections sit alongside the regional policies in Part 5. The relevant catchment for this proposal is Te Waihora.

The regional objectives relate to recognising and providing for Kaitiakitanga, Ranginui (Air), Wai Māori (Water), Papatuanuke (Land), Tane Mahuta (Flora and Fauna), Tangaroa (Sea), Tawhirimatea (Wind), Nga Tutohu Whenua (Cultural heritage).

The key objectives specifically for the Te Waihora Catchment are:

Number	Objectives
(1)	Ngāi Tahu are active co-governors of Te Waihora and its catchment.
(2)	Land and water management in the catchment effectively provides for the Treaty partner status of Ngāi Tahu, and the taonga status of Te Waihora.
(3)	The cultural health of Te Waihora is restored, including the restoration of mahinga kai species abundance and diversity to a level to enable customary use.
(4)	The customary rights of Ngāi Tahu whānui associated with mahinga kai and Te Waihora are protected mō tātou, ā, mō kā uri ā muri ake nei.



(5)	Land and water use in the catchment respects the boundaries, availability and limits of our freshwater resources and the need to protect soil and water resources for future generations.
(6)	The relationship between land use, groundwater, surface water and Te Waihora is recognised and provided for according to the principle of Ki Uta Ki Tai.
(7)	Lake management, including lake level management, reflects living with the lake, rather than forcing the lake to live with us.
(8)	The cultural health of lowland waterways is restored, through the restoration of water quality and quantity and riparian margins.
(9)	Wetlands and waipuna are recognised and protected as wāhi taonga, and there is an overall net gain of wetlands in the catchment.
(10)	All waterways have healthy, planted riparian margins and are protected from stock access.
(11)	The discharge of contaminants to the lake and waterways in the catchment is eliminated

The regional and specific Te Waihora policies that relate to this proposal are:

Mahaanui Iwi Management Plan 2013	WM7.2 WM.7.10 P2.1 - P2.4 TW 4.1 TW 6.5 TW 7.2 TW 8.1 TW 9.2 TW 11.1
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The proposal recognises Ngāi Tahu as a guardian of the natural resource. The proposed activity is being integrated within the farmed land activities that are already occurring. The applicant is not aware of any matter that would cause a significant change in effects to culturally sensitive sites. The proposal aims to always operate at best management practice. It is anticipated that the proposed consent conditions will avoid adverse effects on cultural values.

The proposal will not directly discharge effluent into the surface or groundwater resources and proposed consent conditions provide buffer zones and prevent adverse effects from the potential for odour.

As the proposed activity will not degrade or negatively impact the current status of air, soil, and water quality of Kaituna Valley, there will be a less than minor effect on any cultural values. As discussed above, the activity is considered to achieve the policies and objectives set out in the Iwi Management Plan.

4.11 Summary

The operation of a composting barn and the proposed air discharge requires consent from Environment Canterbury. In terms of the relevant rules the proposed activities are a Discretionary Activity under Rule 10 of the NES-F and restricted discretionary activity under Rule 7.71 of the CARP, and resource consents are required accordingly.

There are no consent requirements under any other plans. Activities are therefore classified as a **discretionary activity**.



5 ASSESSMENT OF ENVIRONMENTAL EFFECTS

5.1 Sensitivity of Receiving Environment

Plants, soil, groundwater, surface water, and the air are all potentially sensitive to the proposed application. However, in this location, and with the design and operation of the proposed barns, adverse effects on each of these receiving environments are expected to be less than minor.

The plants and soil are expected to benefit in terms of productivity from the application of composted bedding material generated from composting barn.

Surface water should always be considered sensitive to nearby discharges. However, effects are avoided by a combination of the use of very low permeability compacted bases to the barns, deep depth of composting material which is regularly aerated to create aerobic conditions, and biological activity that generates warmth from the composting which evaporates the moisture within the animal effluent.

Sensitivity to odour depends on both the degree of acceptability of the smell involved, and the proximity of people potentially offended by it. The nearest neighbouring sensitive activity is approximately 461m from the closest barn and located 18m RL, a higher elevation than the barns at 5m RL.

Accordingly, it is concluded that there is a comparatively low sensitivity of the receiving environment to the effects of the proposed activity.

5.1.1 Effects on Soil and Plants

Adverse effects on soil from applications of the composted material is avoided due to low nitrogen content and high organic form.

The effects of nitrogen and phosphorus on soil and plants will similarly be to enhance soil fertility and encourage plant growth.

The effects of the proposed application on soil and plants are expected to be less than minor.

5.1.2 Effects on Groundwater

The compacted low permeable nature of the barn base along with the evaporation expected in the composting barn means that no leachate is expected to drain below the barns that could enter groundwater.

The nitrogen applied from the application of compost to land is very small and calculated to be approximately 6.8 kg N per tonne of applied compost as presented in Table 5.1. The low nitrogen content of the compost is not expected to change the current farming system nutrient balance significantly and is within the existing consented nutrient loss rate of 15 kg N/ha/yr. Furthermore, the potential for nitrate leaching of applied nitrogen is minimised by plant uptake, use by soil micro-organisms, denitrification, and adsorption onto soil exchange sites. The greater form of nitrogen as organic material also reduces the leaching potential when compared to Urea.



Table 5.1: Nutrient Content of Compost (Durie Et Al 2019)

Table 6.4 Nutrient content of compost (% DM) and rate of nutrient applied (kg nutrient/ha) to pastoral blocks at one tonne compost per hectare.		
	Nutrient (%)	Nutrient loading (kg nutrient/ha)
Nitrogen	0.68	6.7
Phosphorus	0.22	2.2
Potassium	1.19	11.9
Sulphur	0.13	1.3
Calcium	0.53	5.3
Magnesium	0.21	2.1
Sodium	0.08	0.8
Carbon	13.1	131

5.1.3 Effects on Surface Water

Surface water could potentially be contaminated either by direct application of compost into a water body, by surface run-off during or after application, or by the inclusion of contaminated groundwater.

Potential effects are avoided by adopting the buffer distances included in the conditions of Rule 5.29 authorising as a permitted activity the application of solid animal waste to land. It is proposed to exclude an area of 20 m from water bodies and their margins as shown in Figure 5.1 from compost application. The 20 m separation required is to ensure that there will be no movement of contaminants from the compost into any surface water bodies. It is not expected that the discharge will lead to any significant transport of contaminants through shallow groundwater to any surface water due to the following factors:

- Low application depths;
- Application when soil conditions are appropriate;
- Nitrogen content of the compost is low; and
- The application is at a distance not less than 20 m from any watercourse.

In addition to the 20 m buffers around water bodies, compost application will not occur during rain events. This will prevent any movement of contaminants from any application into ephemeral water bodies on the property.

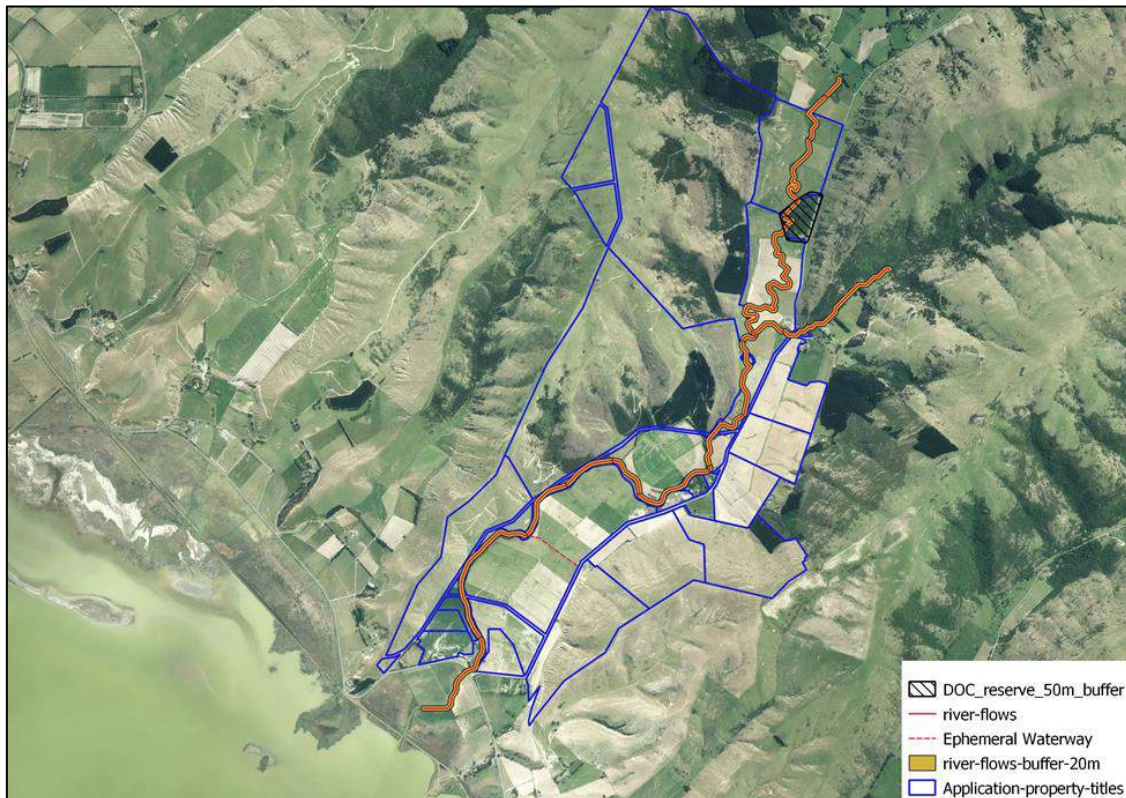


Figure 5.1: Site layout Showing River Flows, 20 m Buffer, and DOC Scenic Reserve

Based on the considerations identified above, it is expected that the effects of the activities to land on surface water will be less than minor.

5.1.4 Effects on Habitats and Ecosystems

The compost loading rates and applications at a time when the soils have sufficient moisture deficit will ensure there will be no significant movement of nutrients into surface water. The avoidance of generating liquid water stream by using a 100% compost bedding system avoids the potential for ponding or run-off from the discharge of wastewater. The effect of the proposed application on habitats is expected to be less than minor.

5.1.5 Effects on the Air Quality

The key contaminant of interest for the air quality assessment is odour.

Schedule 1 of the CARP sets out information to be provided with applications where those assessments include the discharge of odour. It refers to providing an assessment in accordance with the Ministry for the Environment (MfE) good practice guides for assessing odour effects. It makes specific reference to considering the FIDOL factors that it describes in detail in Schedule 2. The CARP notes that such assessments may include all or some of the following techniques:

1. Comparison with the effects of existing processes of similar size and type, including reference to industry standards and codes of practice;
2. Dispersion modelling of contaminant emissions, where the emission rate has been measured (using olfactometry, for example);
3. Observation of the existing discharge and any effects;
4. Information gathered from people that may be affected by an existing discharge, including surveys and examination of complaints records; and
5. Extrapolation from known emissions and effects of scale models or trials of the process.



The CARP also requires

- A list of mitigation measures and procedures to ensure that the extent of effects do not constitute an offensive or objectionable effect; and
- A draft odour management plan developed in accordance with Schedule 2 of the CARP.

The draft odour management plan is included in Appendix B.

The use of dispersion modelling is not considered to be an appropriate tool in this instance for assessing potential odour associated with the proposed operation. This is because emissions observations at similar sites that maintain aerobic conditions have limited or nil odour. Anaerobic conditions if they do develop, would have the potential to produce odour emissions, that would be largely fugitive in nature and are not expected to be continuous or semi-continuous. There is no known reliable emissions data for the composting barn processes associated with aerobic or anaerobic emissions. Accordingly, the potential odour effects have been qualitatively assessed. This assessment of potential odour nuisance effects has been based on the following assessment approaches:

- A review of odour generating activities at the proposed barns and the measures proposed to mitigate the anaerobic condition which have the potential for nuisance effects beyond the proposed barn site.
- A consideration of the receiving environment in terms of sensitivity (as well as influences on odour dispersion) and the geographical separation between potential odour source and local sensitive activities.
- A summary of potential for nuisance considering the FIDOL factors (frequency, intensity, duration, offensiveness/character and location).

The production of the odour is expected to be very low from the composting barns (pers Professor Keith Woodford). The design and stock loading rates are set along with the daily tillage of the bedding material to ensure that aerobic conditions are maintained. The aerobic conditions avoids ammonia, methane and volatile sulphur compound volatilisation. The 100% compost barns also avoid the need for collection, storage, and discharge of effluent from the barns. This eliminates the potential for anaerobic conditions.

The Christchurch City Council Commissioner David Mountfort considered odour in his decision to grant a land use consent to Wangan Hills *To undertake intensive farming, including the construction of two composting cattle feed barns and other ancillary sheds/structures*. The consenting officer visited a similar facility and provided the following comment in the decision.

Odour, Noise and Dust

Having visited operational barns at Chertsey it was apparent that effects arising from odour, noise and dust were negligible and no different from that would arise from a normal farming operation. In this regard the effluent pond and solid waste were largely odourless. Ms Rayne was satisfied that the operation was not giving rise to effects that would constitute a nuisance for other parties. Consequently, I accept Mr Boye's assessment that any effects will be less than minor.

However, it is also important, given the scale of the proposed buildings, that construction noise is appropriately managed. Consequently, conditions to this effect have been recommended (CCC RMA20211675 decision pg 12)

These positive observations with respect to odour when visiting a similar site are an important consideration in the assessment of potential odour effects for the proposed composting barn system. These observations are supported anecdotally by the lack of odour related concerns



raised by the industry experts (pers Professor Keith Woodford) and the absence of an identified need for air quality related adverse effects research in the development of composting barn animal housing systems in New Zealand.

The absence of air quality research locally and internationally into adverse odour from aerobic composting barns provides a strong indication that the proposed activities can be managed well so as to avoid off-site odour effects and avoid an odour nuisance.

In the unlikely event that an odour is produced, the likely cause is that the composted bedding material is no longer aerobic (pers Professor Keith Woodward). To mitigate this situation, additional tilling or replacement compost bedding material can be imported into the barn.

The potential for odour nuisance, and the potential for objectionable or offensive effects in particular, may be assessed by considering what are termed the FIDOL factors (as outlined above in the section on the approach to the assessment) at locations where odour may be observed. These factors are considered in relation to the potential for odour nuisance at the nearest receptors in Table 5.2.

Table 5.2: FIDOL assessment of odour

Descriptor	Comment
Frequency/duration	<p>Meteorological conditions including wind speed and wind direction may affect the frequency and duration in which receptors are affected, particularly at low wind speeds. As discussed in Section 2.5, light winds (generally 10 km/hr or less) are worst case in terms of the propagation of odour from a source. By comparison, stronger winds will act to rapidly disperse and dilute odours to low concentrations.</p> <p>The most prevalent occurrence of light winds occurs during late evening and early morning hours, when there will be little in the way of active processing of the compost beds or stock movement within the barns.</p> <p>During daytime hours, the prevalence of light winds is much lower. Notwithstanding this, such light winds predominantly drain down the valley parallel and away from the nearest sensitivity activity location, southeast and raised above the site.</p> <p>Any adverse conditions (anaerobic) giving rise to significant odour generation and the potential for emission effects are expected to be very infrequent.</p>
Intensity	<p>The intensity of odour emissions will be a function of the amount of bedding material that has become anaerobic and management and mitigation measures implemented to recover the aerobic state.</p> <p>Experience with observations in and around the existing composting barn sites is that odour is not normally apparent and does not linger on visitor clothing, and is not noticeable when immediately outside of the barns.</p> <p>Provided management and mitigation measures are implemented, then odour intensity at sensitive off-site locations is expected to be negligible during normal operation.</p>



Descriptor	Comment
	The main risk of odour is therefore associated with a process failure maintaining an aerobic state of the compost. Experience from existing barns shows that this is a rare occurrence and relatively easily amended by increased tilling frequency, new compostable material, moisture management and changes in stocking densities. Given the above, it is considered that the intensity of any odour impacts associated with the proposed operation will generally be negligible even at the nearest sensitive off-site location.
Offensiveness	Under poor composting practices, the compost material has the potential for NH ₃ , methane and volatile sulphur compound emissions. These emissions are corrosive, and the odour character can have an unpleasant hedonic tone prior to dispersion and mixing. The nature and character of potential odour from the site is low and will depend upon a failure of the aerobic composting process, the right atmospheric transport conditions taking odours offsite to a sensitive activity. Odours associated with the ammonia, methane and volatile sulphur compound are associated with anaerobic conditions, which can be avoided by compost tilling, stocking rate management and bedding material replacement.

A further mitigation avoiding potential nuisance odour is the location of the barns on WHL's property. The closest neighbouring sensitive activity is a distance at 441 m from the closest barn. This distance, while less than 500 m, will allow any odour emitted from the barns to be dispersed and mixed. This dwelling is located at a higher elevation than the barns and uphill of likely cold air drainage pathways and out of prevailing wind direction with respect to local wind direction data. The higher elevation of the nearest dwelling dampens the airflow in still conditions moving from the barns. The written approval of the property owner (Grant Whelan) located within 500 m of the barns has been obtained and this is included in Appendix C.

Overall, having reviewed the discharges under the FIDOL framework, the potential for offensive or objectionable odour effects is considered to be negligible for all sensitive locations surrounding the site.

Odour is not expected to be observable at these locations during normal operation of the barns. Unusual anaerobic conditions or failure of the composting process, which could lead to more significant odour emissions, are likely to be a very rare occurrence. As a consequence, potential odour effects at the identified sensitive location within 500 m south-east of the site are expected to be less than minor.

5.1.6 Cumulative Effects from Discharges

Cumulative effects from composting barn's discharge to air are equal to actual effects of the barns as there are no other animal housing facilities in the valley or surrounding areas. Given that the compost application to land are being accommodated within the envelope of existing consented activities, the effects in combination with other farming activities undertaken by Wangan Hill are assessed to be less than minor.



5.1.7 Effects on Amenity, Community, Cultural and Heritage Values

As noted in Section 2 above, there are no known cultural or archaeological sites relevant to this part of the Kaituna Valley.

No heritage buildings are recorded in this locality. There are no schools, maraes, hospitals, or other community facilities near enough to be affected by the proposed activity. There are wetlands at a distance of 124 m to the south of the property boundary and over 2.5 km from the barn facilities.

The large separation distance and elevation difference between neighbouring properties and the barns is to ensure that if odour was produced, it will not be an unnecessary nuisance to neighbours. The applicants own dwelling and that of staff are located closer to the barns than the neighbours.

There is a DOC Scenic Reserve surrounded by the property. This is located 1.8 km from the barn area.

The barns and animal finishing business will increase the productive capacity of WHL and increase the employment of 4 or 5 people directly on the farm to feed and maintain the operation. In addition to the direct on-farm jobs, there will be a multiplier effect with downstream service providers and processing facilities.

The effects of the proposed use of land and discharge to air are expected to be less than minor.

5.2 Summary of Effects

As described above, the proposed use of land and the discharge to air potentially has effects on soil and plants, groundwater, surface water, habitats, the air, amenity, community, cultural, and heritage values. However, the proposed design of the barns facilities and their operation avoid and or provide mitigation of potential effects, ensuring that all of those potential negative effects will be less than minor. The written approval of the only sensitive activity within 500 m of the barns has been provided and is included in Appendix C. Further, the proposed activity will have the beneficial effects of productivity enhancement, job creation and environmental protection.

This application meets the relevant objectives and policies of the identified plans. The grant of this consent is also consistent with Part 2 of the RMA and will allow for the beneficial use of the resources which enables the wider community to provide for its economic, social, and cultural wellbeing.



6 ALTERNATIVE METHODS OF DISCHARGE

The 4th Schedule of the RMA, Clause 6(1)(d)(ii) requires that where an activity includes the discharge of any contaminant, a description of any possible alternative methods of discharge, including discharge into any other receiving environment, must be included within the assessment.

Additionally, section 105(1)(c) of the RMA requires the consent authority, when considering the application, to have regard to any possible alternative methods of discharge, including discharge into any other receiving environment. An assessment of alternatives is also necessary for activities likely to have significant adverse effects.

The application is for the establishment of a new animal housing facility. The site is located with the Wongan Hills property at a location with a large separation distance to the potentially sensitive activities and allow for integration with existing on farm irrigation infrastructure.

The undertaking of potentially odorous activities within a barn and the extraction and treatment by dispersal of odorous air associated with the composting bedding is consistent with industry good practice.

WHL considered alternative designed barns with less composting area, or differing configurations reducing air flow and air mixing, or for the barns to be located an alternative location within their property. The design of the barns with high pitched roofs creates an upwards air movement circulating the air. Alternative barn designs that are more enclosed or are fully open do not provide the same air transport, potentially resulting in longer composting times, increased moisture content of the bedding material which cools the compost and leads to potentially higher ammonia production and associated odour.

6.1 Alternatives Assessment Summary

The alternative designs are not best practice and increase the potential for anaerobic conditions, can involve an additional effluent stream and associated discharge to land activities. Placing the barns at an alternative location has the potential for different visual and amenity effects associated the land use restrictions, and environmental impacts make them less favourable than the proposed design and site.

The proposed activities are consistent with the land use zone and the effects on the environment will be less than minor.



7 RESOURCE MANAGEMENT ACT 1991

7.1 Part 2 Considerations

Part 2 of the RMA sets out the purpose and principles of the Act. Section 5 states:

"(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.

(2) In this Act, "sustainable management" means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –

(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

(b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and

(c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment."

In relation to the potential effects on the environment associated with the proposed activity, the assessment contained within this document has shown that subject to the implementation of the controls, or mitigation approaches, the potentially affected resources of the area will be sustained along with their life-supporting capacity. The barns and proposed activity are consistent with the sustainable management of natural and physical resources.

Section 6 of the RMA identifies matters of national importance which shall be 'recognised and provided for'. The relevant matters that relate to this proposal are *"6(e) The relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wahi tapu, and other.*

The proposal has considered the Iwi Management Plan and the proposed activity, subject to the implementation of the existing mitigation approaches, which will ensure that the area's air, soil, and groundwater resources are being used in an efficient manner.

Section 7 lists matters which all persons shall have regard to. This application has given particular regard to the efficient use and development of natural resources, intrinsic values of ecosystems and the maintenance and enhancement of the quality of the environment. The activity is considered to be consistent with all aspects of Section 7 of the Act. It is an efficient use of resources, recognises and maintains the identified values, and maintains the quality of the environment. It does not have more than minor adverse effects on any of these values or aspects of the environment.

In addition, Section 8 of the RMA requires *"all persons exercising functions and powers"* under the Act to have regard to the principles of the Treaty of Waitangi (Te Tiriti o Waitangi). The proposed activity is consistent with the principles of the Treaty of Waitangi and has considered Ngai Tahu's Iwi Management Plan.

Given the above assessment, the activities for which resource consents are required under this application promotes sustainable management and is consistent with Part 2 of the RMA.



7.2 Part 6 – Section 95

Section 88 Making an application.

This report with attachments forms part of an application for a resource consent for the Wangan Hills Limited property under s88.

7.2.1 Determination of Public Notification

Section 95A(1) of the RMA requires consent authorities to follow the sequential assessment set out in section 95A when deciding whether to publicly notify an application for resource consent. This assessment is set out below.

Step 1: Circumstances When Public Notification is Mandatory

Section 95A(2)(a) requires that a consent authority must publicly notify an application if the applicant has requested public notification. Public notification of this application is **not** requested.

Step 2: Circumstances When Public Notification is Precluded

The proposal does not meet the criteria of 95A(5) because:

- (a) None of the relevant rules or environmental standards preclude public notification;
- (b) The application is not for a controlled activity, residential activity, or prescribed activity.

Step 3: Certain Circumstances

The proposal does not meet the criteria of 95A(8), and therefore public notification is not required under 95A(7)(a), because:

- (a) The proposal is not subject to any rule or environmental standard that requires public notification;
- (b) As concluded in Section 5 of this report, the adverse effects of the activity will not be more than minor overall.

When assessing whether an activity will have or is likely to have adverse effects on an environment that are more than minor, for the purposes of determining public notification, section 95D requires that a consent authority:

- (a) Must disregard any effects on persons who own or occupy the land on which the activity will occur, and any adjacent land; and
- (b) May disregard an adverse effect of the activity if a rule or a national environmental standard permits an activity with that effect; and
- (d) Must disregard an adverse effect of the activity if the effect does not relate to a matter for which a rule or a national environmental standard restricts discretion; and
- (e) Must disregard any effect on any person who has given written approval to the application.

An assessment of the environmental effects of the proposal is set out in Section 5 of this report, which has been undertaken with reference to the LWRP and CARP. That assessment concluded that the proposal would have less than minor effects on:

- Soils and Plants;
- Groundwater;
- Surface water;
- Habitats and Ecosystems; and
- Air Quality.

Step 4: Special Circumstances

The scale of the proposal and its associated effects are well understood from the operation of the similar composting barns in Canterbury and New Zealand, the housing of animals indoors is



anticipated by LWRP, CARP and NES-F which all having rules to control the activity. The activity will provide a net benefit to the local community. Consequently, it is considered that there are no special circumstances that exist that would warrant public notification of the application, therefore in accordance with section 95A(9)(b) the application must not be publicly notified.

7.2.2 Determination of Limited Notification

Section 95A(9)(b) requires that, if a consent authority does not publicly notify the application it must decide whether to give limited notification of the application under the provisions of section 95B. Section 95B(1) of the RMA requires consent authorities to follow the sequential assessment set out in section 95B when deciding whether to give limited notification of an application for resource consent. This assessment is set out below.

Step 1: Affected Parties and Groups

In accordance with section 95B(2), a determination must be made as to whether there are any customary rights groups that are affected by the proposal. In this regard, it is noted that there are no customary rights groups that may be affected by the proposed activities.

In accordance with section 95B(3), a determination must be made as to:

- (a) Whether the proposed activity is on, or adjacent to, or may affect, land that is subject to a statutory acknowledgement; and
- (b) Whether the person to whom the statutory acknowledgement is made is an affected person under section 95E.

In this regard, it is noted that there is no statutory acknowledgement land within or adjacent to the activity. The assessment in Section 5 concluded that the proposal would have less than minor effects on:

Consequently, as it has been determined that there are no parties deemed to be affected by the proposal, limited notification is not required under section 95B(4).

Step 2: Certain Circumstances

The proposal does not meet the criteria of 95B(6) because:

- (a) None of the relevant rules or environmental standards preclude public notification;
- (b) The application is not for a controlled activity, or prescribed activity.

In regard to section 95B(7), it is noted that the proposal does not require resource consent for a boundary activity or prescribed activity.

Step 3: Affected Persons

Section 95B(8) requires a determination to be made as to whether there are any affected persons pursuant to section 95E. In making this determination, section 95E(3) provides that a person is not affected if:

- (a) The person has given and not withdrawn written approval for the activity to the consent authority, prior to a decision on affected persons being made; or
- (b) The consent authority is satisfied that it is unreasonable in the circumstances for the applicant to seek written approval.

Written approval has been received from Grant Whelan, a neighbouring property with a dwelling located within 500 m of the proposed barn location.

For the purposes of determining limited notification, section 95E(1) directs that a person is an affected person if the consent authority decides that the activity's adverse effects on the person



are minor or more than minor (but are not less than minor). Section 95E(2) requires that, when assessing an activity's adverse effects on a person, a consent authority:

- (a) May disregard an adverse effect of the activity on a person if a rule or a national environmental standard permits an activity with that effect; and
- (b) Must disregard an adverse effect of the activity on a person if the effect does not relate to a matter for which a rule or a national environmental standard reserves control or restricts discretion; and
- (c) Must have regard to every relevant statutory acknowledgement.

An assessment of the environmental effects of the proposal is set out in Section 5 of this report, which has been undertaken with reference to the relevant matters identified for the use of land for a feedlot and the discharge to land. That assessment concluded that the proposal would have less than minor effects on:

- Soils and Plants;
- Groundwater;
- Surface water;
- Habitats and Ecosystems; and
- Air Quality.

The adverse effects of the proposed land use and discharge are considered to be less than minor on the environment. In light of the conclusions made above, it is considered that there are no affected persons in regard to the proposal, therefore limited notification is not required under section 95B(9).

Step 4: Special Circumstances

The Proposal enables the use of land for rural production via covered composting barns. Resource consent has been granted by Christchurch City Council *To undertake intensive farming, including the construction of two composting cattle feed barns and other ancillary sheds/structures* on a non-notified basis. It is considered that there are no special circumstances which exist that would warrant limited notification under section 95B(10).

If there are persons who are considered affected, notice of the application must be given to them.

As part of this resource consent application, consultation is being undertaken with Ngai Tahu via the local Runanga and Mahaanui Kurataiao Ltd (MKT) and with Grant Whelan the owner of a dwelling on his property that is located within 500 m of the barns.

Section 95E(3)(b) of the RMA provides that despite anything else in section 95E, a consent authority must decide that a person is not an affected person if it is unreasonable in the circumstances to seek the person's written approval.

In addition, the effects of the activity are known, and conditions are proposed to restrict the potential for adverse effects.

When taking into consideration the above, it is considered the effects from the proposal are less than minor and the processing of the consent applications should be considered on a non-notified basis.

7.3 Part 6 Considerations – Sections 104 to 107

For any resource consent application, section 104 of the RMA requires the consent authority in making a decision to have regard to:



- The actual and potential effects on the environment of allowing the activity (section 104(1)(a)).
- Any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity (section 104(1)(ab)); and
- Any relevant provisions of any national environmental standard, other regulation, national policy statement, coastal policy statement, regional policy statement or proposed regional policy statement, plan or proposed plan (section 104(1)(b)).
- Any other matters the consent authority considers relevant or necessary to consider (section 104(1)(c)).

The actual and potential effects associated with the activities for which resource consents are being sought have been assessed in Section 5 of this document (section 104(1)(a)). The measure implemented to ensure positive effects on the environment are also discussed in Section 5 of this document (section 104(1)(ab)). There are no other matters considered relevant or necessary under section 104(1)(c)).

Section 105 of the RMA provides for matters that consent authorities must have regard to when considering applications for discharge permits. Effectively, section 105 requires:

- An assessment of the discharges and sensitivity of the environment to adverse effects (section 105(1)(a)).
- The reason for the proposed choice in relation to the discharges (section 105(1)(b)).
- An outline of alternative discharge methods and locations (section 105(1)(c)).

The potential adverse effects on the environment associated with the barn and associated discharge to air have been assessed in Section 5 of this document. An overview of consideration of different housing design options is contained in Section 6 of this document. In relation to the preferred option selected, it is considered that it will ensure that the actual and potential effects of the discharges will be avoided, remedied, or mitigated, provided that the proposed control measures are implemented.

Section 107 of the RMA is not relevant to the discharge to air, given that contaminants do not enter water (i.e., groundwater).

This application meets the relevant objectives and policies of the identified plans. The grant of this consent is also consistent with Part 2 of the RMA and will allow for the beneficial use of the resources which enables the wider community to provide for its economic, social, and cultural wellbeing.



8 CONSULTATION

8.1 Ngai Tahu

WHL have had verbal discussions with the local Runanga and Mahaanui Kurataiao Ltd (MKT) and they will be provided the application when it is completed. To date, no specific concerns have been raised with the location and proposal; however, these discussions are ongoing

8.2 Potentially affected neighbours

The applicant has provided the application and assessment of effects to Grant Whelan the owner and occupier of a dwelling located at 230 Kaituna Valley Rd that is within 500 m of the barns. Following receiving the application, Mr Whelan has provided affected party written approval. This approval is included in Appendix C.

All other neighbouring dwellings are located greater than 500 m from the barns and are not considered to be potentially adversely affected by the discharge to air from the housing of greater than 30 animals. All potential effects are assessed to be less than minor. Table 2.2 provides the neighbouring property details and distance between the barns and sensitive activity locations.

8.3 Other parties

No other parties were consulted and presented in the assessment as no other parties are considered affected by the proposed use of land and associated discharge to air.



9 PROPOSED CONSENT CONDITIONS

The applicant proposes the following consent conditions:

- 1 This consent authorises the use of land and discharge to air from the housing and feed lotting of animals within composting barn on land at 207, Kaituna Valley Road, RD2, Christchurch 7672 (Lot number as mentioned in Section 2.1).
- 2 The discharge to air shall not cause an adverse effect at the property boundary.
- 3 The stored or discharged compost shall not cause any odour beyond the boundary of the site that is offensive or objectionable in the opinion of the Council's Compliance Officer.
- 4 The Consent Holder shall notify the Consent Authority the identity of the Person in Charge of the animal housing system:
 - (a) prior to the first exercise of this consent, and
 - (b) no more than five working days following the appointment of any new Person in Charge.
- 5 The Consent Authority may, in accordance with Sections 128 and 129 of the Resource Management Act 1991, serve notice on the Consent Holder of its intention to review the conditions of this consent during the period 1 February to 30 September each year, or within two months of any enforcement action being taken by the Consent Authority in relation to the exercise of this consent, for the purposes of:
 - (a) determining whether the conditions of this permit are adequate to deal with any adverse effect on the environment, including cumulative effects, which may arise from the exercise of the permit, and which it is appropriate to deal with at a later stage, or which become evident after the date of commencement of the permit;
 - (b) ensuring the conditions of this consent are consistent with any National Environmental Standards Regulations, relevant plans and/or the Canterbury Regional Policy Statement;
 - (c) amending the monitoring programme to be undertaken;
 - (d) adding or adjusting compliance limits;
 - (e) requiring the Consent Holder to adopt the best practicable option to remove or reduce any adverse effect on the environment arising as a result of the exercise of this permit.



10 CONCLUSION

The Applicant seeks a consent term of 35 years for consent because of the less than minor adverse effects, and the permitted activity type level of discharge. No parties are considered to be adversely affected.

Given the above assessment of effects on the environment, it is considered that it is appropriate to grant the resource consents sought by WHL under the Resource Management Act 1991 for the following reasons:

- The proposed activity will result in less than minor effects on underlying groundwater quality;
- There will be less than minor effects on the amenity of the surrounding area;
- The proposed activity will enable the applicant to provide for their animal housing needs in a sustainable manner;
- The proposed farming activities will result in less than minor effects from nutrient discharges in the environment;
- The proposal complies with the requirements of the NES-F; and
- The proposal is not inconsistent with the objectives and policies of the CLWRP and CARP.

It is therefore concluded that the proposal will continue to promote the sustainable management of natural and physical resources while avoiding, remedying or mitigating adverse effects on the environment.



11 REFERENCES

- Durie, R., Woodford, K., and Trafford, G., 2019. Modelling of nitrogen leaching within farming systems that incorporate a composting barn: a case study of the Lincoln University Dairy Farm. In: Nutrient loss mitigations for compliance in agriculture. (Eds L.D. Currie and C.L. Christensen). <http://flrc.massey.ac.nz/publications.html>. Occasional Report No. 32. Fertilizer and Lime Research Centre, Massey University, Palmerston North, New Zealand. 7 pages
- Landcare Research. (2021). S-map Soil Report. Report generated: 1-July-2021 from <https://smap.landcareresearch.co.nz>.
- LAWA (2021). Kaituna Stream at recorder. <https://www.lawa.org.nz/explore-data/canterbury-region/river-quality/ellesmere-waihora-catchment/kaituna-stream-at-recorder/>



12 APPENDICES

Appendix A	Proof of ownership
Appendix B	Odour Management Plan
Appendix C	Affected Party Approval



Appendix B

Odour Management Plan

Odour Management Plan

Prepared for

Wongan Hills Limited

Prepared by




March 2022



Odour Management Plan

Wongan Hills Limited

This report has been prepared for **Wongan Hills Limited** by Lowe Environmental Impact (LEI). No liability is accepted by this company or any employee or sub-consultant of this company with respect to its use by any other parties.

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Job No.: 10759

Date: 24 March 2022



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1 INTRODUCTION

This Odour Management Plan (OMP) describes odour management procedures that will be undertaken by Wongan Hillis Limited (WHL) to minimise discharges to air from the housing of more than 30 animals in composting bed barns and the application of composted bedding material to land. It is important that these procedures are followed to prevent adverse environmental effects and ensure compliance with resource consent conditions.

The plan should be reviewed annually to incorporate any changes and improvements to the management system. Any changes will be recorded, and a copy of the current OMP sent to the Canterbury Regional Council (ECan) on request.

1.1 Management Plan Purpose and Scope

This Management Plan has been prepared for WHL and its relevant contractors and is intended to provide a reference document detailing the management practices and considerations required to ensure a compliant composting barn and composting application system.

The scope of this manual is the management of odour from the operation of the composting barns and the application of compost to land by WHL on WHL owned properties.

The OMP identifies the following:

- Key personnel responsible for implementing the OMP;
- Environmental performance standards of the Resource Consents;
- Odour control procedures;
- Methods for managing complaints regarding odours and keeping records relating to compliance; and
- Application and incident and complaint templates.

2 LOCATION

The overall property is located along Kaituna Valley Road, RD2, Christchurch 7672. There are several land parcels that make up the overall property. The total property area with the potential to receive compost from the facilities is shown in Figure 2.1. The four composting barns are proposed to be located on Part Lot 2 DP 1631, and their general location is shown in Figure 2.2.

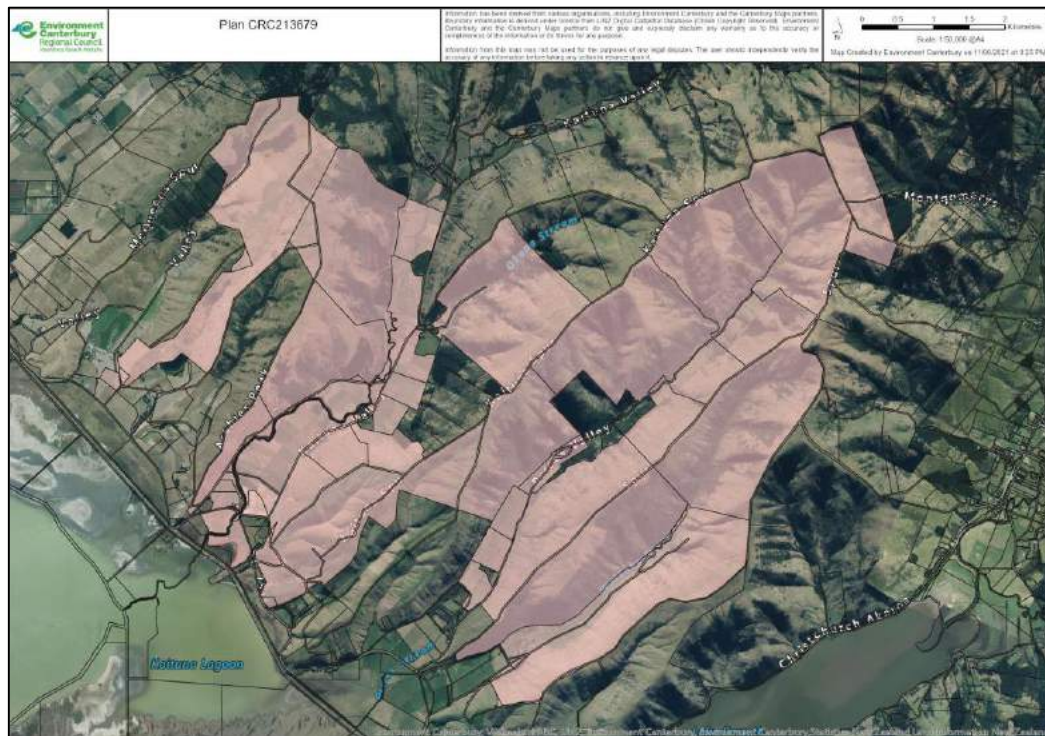


Figure 2.1: Total Property Area (CRC213679)

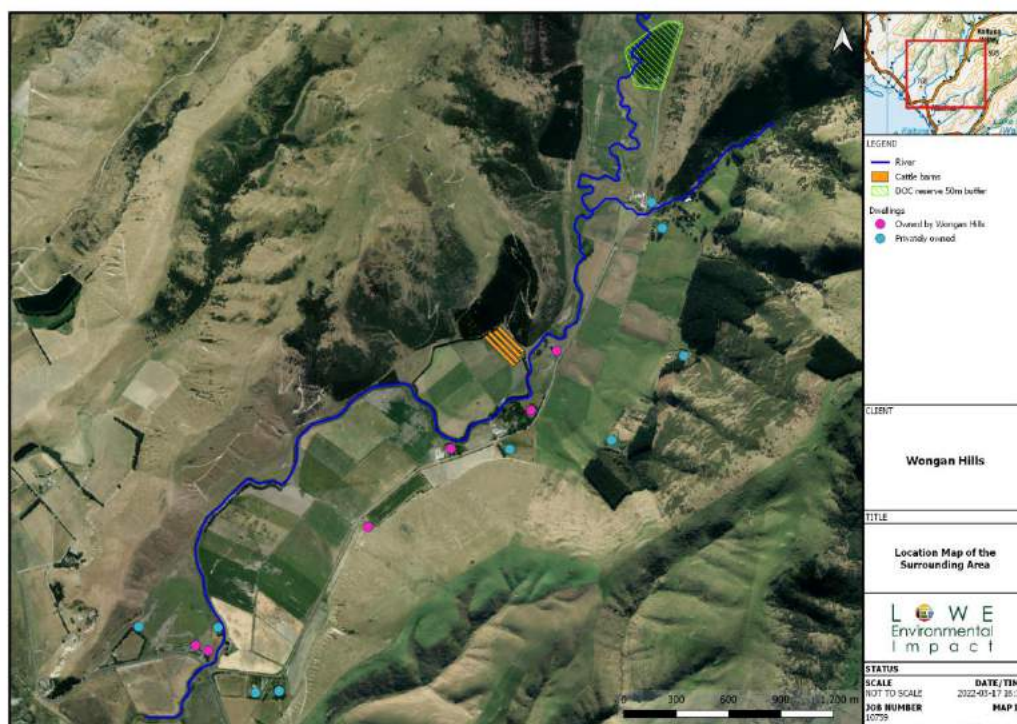


Figure 2.2: Location of Composting Barns and Dwellings



3 KEY PERSONNEL

The WHL is responsible for the implementation of this plan. The composting barn manager shall be able to be contacted at all times.

The key personnel and contact phone numbers associated with the composting barns operation and compost application to land are:

WHL Owner: Brent Thomas **Telephone Contact:**

WHL General Manager: Matt Iremonger **Telephone Contact:**

WHL Composting Barn Manager:



4 ENVIRONMENTAL PERFORMANCE STANDARDS

The discharge to air and application of compost to land is subject to the provisions of the Resource Management Act 1991, the National Environmental Standards for Air Quality, Regional and District Plans and the conditions of resource consent CRCXXXXXX.

The full text of consent CRCXXXXXX is attached in **Appendix A**.

4.1 Resource Consent Requirements

As per the requirements of Resource Consents CRCXXXXXX the following monitoring and reporting requirements will be completed.

1. TBC



5 POTENTIAL SOURCES OF ODOUR

The major sources of odours at the property are:

- The housing of animals in the composting barns; and
- Application of compost to land.

Odour generation within the composting barns is avoided by good design and management. Key design and management points include:

- Barn design - roof pitch to induce airflow, roof and sidewall ventilation, Minimum eave height;
- Barn management to ensure water supply and rainfall do not saturate the bedding material;
- Regular daily composting tilling to maintain aerobic conditions;
- Compost tilling depth;
- Compost renewal and top-up;
- Stocking density management; and
- Compost removal and spreading to land.



6 ENVIRONMENTAL FACTORS

The environment surrounding the property is rural in nature, with sheep and beef, dairy grazing and other agricultural uses present. Figure 2.2 shows the composting barns' location in relation to neighbouring dwellings which could be considered Sensitive Activities as defined by the CARP. Table 6.1 provides Sensitive Activities (dwelling) address details and distance from the sensitive activity boundary to the closest point of the barns.

The major factors that influence odour from the property are the aerobic/anaerobic nature of the compost.

Compost applications are to be reported using the application log in **Appendix B**. The log is to be kept up to date by the Composting Barn Manager and be available to ECan on request. As a minimum, the log shall include:

- (a) A record of all compost discharged for the previous three months;
- (b) The date of application;
- (c) The source compost applied to land;
- (d) An application of other effluents generated by WHL;
- (e) The location of the application;
- (f) The estimated daily quantity of compost discharged at each location; and
- (g) The wind direction at the time of application.



7 INCIDENT MANAGEMENT

Where an incident has occurred, a formal pathway is required to be completed including;

- Identification of incident;
- Date and time;
- Immediate on-site remedial actions;
- Reporting;
- Follow up – Corrective or Preventative Actions;
- Incidents include (but are not limited to);
- Odour discharges beyond the property boundary;
- Spillages;
- Complaints; and
- Breakdowns/Malfunctions.

Incidents need to be scaled as – Incident, Near Miss or Non-Compliance.

Once the immediate on-site remedial actions have been completed an Incident Form is required to be completed. A copy of the Incident Form is included in **Appendix C**.

Each Incident Form is required to be submitted by the WHL Barn Manager to the WHL General Manager for follow-up. Follow-up actions require a Corrective or Preventative action to be established, including identifying the person responsible for the action and a date for the action to be completed. Where appropriate, ECan will be contacted in accordance with the requirements of the Resource Consent.

The WHL Barn Manager will also give the Incident Form an identification number based on its category – Incident or Complaint, and record them in the appropriate Management Logs. Numbering for the Logs are as follows - starting with the corresponding letter (I or C) then the year suffix (2022 = 22) followed by a consecutive number system (starting at 001), for example - I22001 and C22001 for the Incidents and Complaints, respectively. Copies of the Incident Log and Complaints Log templates are included in **Appendix D**.

Where a system malfunction or breakdown has occurred at the composting barn facility, this will be dealt with in accordance with the Barn Operations and Maintenance manual. Following any incident specifically associated to the compost application, work is to be stopped immediately and the issue to be isolated and resolved as soon as possible. An Incident Form (refer to Appendix C) is required to be completed and the procedure above completed.



8 COMPLAINTS

Complaints may be referred by a regulatory authority or a member of the public. It is the responsibility of the WHL General Manager to respond to and follow up all complaints regarding odours.

Actions to be taken as soon as possible following a complaint:

- Note the time, date, identity and contact details of the complainant;
- Note weather conditions including wind direction, wind speed and rainfall;
- Ask complainant to describe the nature of the odour emission; is it constant or intermittent, how long has it been occurring, is it worse at any time of day, does it come from an identifiable source;
- After receipt of a complaint, undertake a site inspection as soon as possible. Note all odour generating activities taking place and the mitigation methods that are being used. Take any remedial action, if necessary;
- If it becomes apparent that there may be a source of odour other than the property causing the nuisance, it is important to verify this. Photograph the source and emissions if possible;
- As soon as possible after the initial investigations have been completed, contact the complainant to explain any problems identified and remedial actions taken;
- If necessary, update any relevant procedures to prevent any recurrence of problems; and
- File the complaint on a complaint register.



9 APPENDICES

Appendix A Proposed Resource Consent CRCXXXXXX Conditions

Appendix B Compost spreading log

Appendix C Incident Form

Appendix D Incident and Complaint Logs



APPENDIX A

Proposed Resource Consent CRCXXXXXX Conditions



APPENDIX B

Compost spreading log

Spreading Log

[illegible]



APPENDIX C

Incident Form

Incident Form					
Date		Time		Name	
Type of Incident (circle option on each line)					
Incident		Near Miss		Non-Compliance	
Complaint	Spillage	Breakdown/Malfunction		Other	
Location (circle one)					
Barn	Public Road		WHL property		Other
	Address				
Weather Conditions (wind direction, wind speed and rainfall)					
Description of Incident and On-site Remedial Actions					
Complaint Details					
Name			Phone #		
Address					
<input type="checkbox"/> Forwarded to WHL Owner			Signed		
Follow Up					
Date		Name			
Corrective or Preventive Action Identified					
Action to be implemented					
By Whom					
Deadline for Implementation					
Incident/Complaint Id #					
Copies to (where required)					
<input type="checkbox"/> WHL File			<input type="checkbox"/> ECan		
			<input type="checkbox"/> Other (Specify)		



APPENDIX D

Incident and Complaint Logs

Incident Record Log

[illegible]

Complaint Record Log

[illegible]

