

## Discharge Permit

Pursuant to Section 104D of the Resource Management Act 1991, a resource consent is hereby granted by the Southland Regional Council to **Southland District Council, PO Box 903, Invercargill 9840** from **3 September 2021**.

**Please read this Consent carefully, and ensure that any staff or contractors carrying out activities under this Consent on your behalf are aware of all the conditions of the Consent.**

### Details of Permit

Purpose for which permit is granted:	To discharge treated municipal wastewater from the Riversdale wastewater treatment plant to surface water (Meadow Burn) and to land via a soakage channel.
Location	Riversdale
- site locality	The existing discharge into the Meadow Burn is located immediately east of the oxidation pond at NZTM E1271094 N4907934.
- map reference	The wastewater will be discharged via the drainage channel at or about NZTM E1271035 N4907904
- catchment	Mataura River
Legal description of land at the site:	Parts Lots 5 and 6, DP 92, Part Section 509, Hokonui Survey District
Expiry date:	<b>5 October 2026</b>

### Schedule of Conditions

1. This consent authorises:
  - a) The discharge of treated wastewater from the Riversdale Wastewater Treatment Plant oxidation pond to the soakage channel at an annual average daily flow of 260 m<sup>3</sup>/day;

*Note: Compliance with this condition shall be determined by a record of the daily volume of wastewater coming into the plant as the best available indication of wastewater flow, as specified in Condition 6.*

- b) The discharge of treated wastewater from the oxidation pond to the Meadow Burn via the soakage channel. The rate of discharge from December to March will be limited to less than 1 litre per second. The rate of discharge from April to November will be limited to less than 2 litres per second.
  - c) The discharge of treated wastewater from the oxidation pond to the Meadow Burn via the soakage channel at rate higher than that specified in Condition 1(b) above may only occur as a result of high water levels in the soakage channel, where available freeboard from the top of the soakage channel is less than 300 mm, which, if not lowered, may increase the risk in overflows from the soakage channel and/or oxidation pond. The consent holder shall advise the Consent Authority prior to any discharge under Condition 1(c), detailing the reason for the proposed discharge. The consent holder's staff shall undertake discussion with the Consent Authority prior to the discharge occurring.
2. The discharge authorised by this permit shall not give rise to any of the following effects 50 metres downstream of the discharge point in the Meadow Burn:
- a) the production of any conspicuous oil or grease films, scums or foams or floatable or suspended material;
  - b) any conspicuous change in colour or visual clarity;
  - c) any emission of objectionable odour;
  - d) the rendering of fresh water unsuitable for consumption by farm animals;
  - e) any change in the natural water temperature of more than 3 degrees Celsius;
  - f) any change in the pH outside of the range of 6.0 to 9.0, except when due to natural causes;
  - g) a reduction in the oxygen content in solution to less than 6 milligrams per litre; or
  - h) any destruction of natural aquatic life as a result of a concentration of toxic substances.

**Programme of Works for Rapid Infiltration Basins (RIBs)**

3. (a) By 28 February 2022, and every six months thereafter for the term of this consent, the consent holder shall submit an update report describing progress made towards building and commissioning the Rapid Infiltration Basins authorised by AUTH-20147220-02-V1, to the following parties:
  - Environment Southland;
  - Operations Manager (Murihiku), Department of Conservation;
  - Fish & Game Southland;
  - Hokonui Rūnanga;
  - Te Ao Marama Inc; and
  - Public Health South.
- (b) The update report shall be submitted by email to the specified parties, and shall include but not be limited to:
  - (i) A description of the actions undertaken toward building and commissioning the RIB scheme in the previous six-month period;
  - (ii) A description of the actions programmed for the next six-month period; and

- (iii) Progress against the Consent Holder's anticipated programme for completing and commissioning the RIB scheme and giving effect to AUTH-20147220-02-V1.

#### **Accidental or Emergency Discharges**

- 4. In the event of an emergency or accidental discharge of wastewater or partially treated wastewater to land or water (as opposed to normal treated wastewater discharging to ground and water through the Discharge Channel), the consent holder (or the consent holder's agent) shall without undue delay, notify:
  - a) Public Health South (ph (03) 211 0900);
  - b) Hokonui Rūnanga Inc (ph 03 208 7954);
  - c) Te Ao Marama Inc. (ph (03) 931 1242);
  - d) the Consent Authority's Pollution Response Hotline (ph 0800 76 88 45);
  - e) Fish & Game Southland (ph (03) 215 9117);
  - f) Operations Manager (Murihiku), Department of Conservation (ph (03) 211 2400); and
  - g) users of downstream surface water abstractions within 200 metres of the discharge point of the WWTP to the Meadow Burn.
  
- 5. (a) The consent holder shall maintain a record of all incidents and complaints relating to the exercise of this consent, including discharges occurring under Condition 1(c).
  - (b) This record shall include, but not be limited to:
    - (i) the location where the incident was detected by the complainant;
    - (ii) the date and time when the incident occurred;
    - (iii) a description of the weather conditions when the incident was detected by the complainant;
    - (iv) the nature of the incident;
    - (v) operating conditions at the time of the complaint, including any malfunction or breakdown of plant or equipment;
    - (vi) the duration of the incident;
    - (vii) the most likely cause of the incident; and
    - (viii) any corrective action undertaken by the consent holder to avoid, remedy or mitigate the incident, and any future recurrence.
  
  - (c) The incidents and complaints register shall be made available for viewing by the Consent Authority's staff at any time.
  
  - (d) Within seven days of any complaint, the consent holder shall notify the Consent Authority in writing of the response taken to remedy the cause of the complaint, and provide a copy to the complainant (if known). The consent holder shall provide a copy of the incidents and complaints register maintained in accordance with Condition 5 to the Consent Authority on request.

#### **Monitoring**

- 6. The consent holder shall record the daily volume of wastewater coming into the plant. This shall determine compliance with Condition 1(a). The daily volume record shall be supplied to the Consent Authority by 31 July each year, or at any time upon request.

7. In March, June, September and December each year, the consent holder shall collect representative samples of:
- a) treated wastewater at the end of the Soakage Channel prior to the discharge to the Meadow Burn;
  - b) groundwater from RD1, RD2, RD3, RD4 and RD5;
  - c) water from the Meadow Burn at:
    - i. a location five metres upstream of the discharge (Point 1);
    - ii. a location 50 metres downstream of the discharge (Point 2); and
    - iii. a location approximately 800 metres downstream of the oxidation pond (Point 3).

See **Appendix 1** for a location plan of monitoring points.

8. The following shall be measured at the time of sampling undertaken in accordance with Condition 7:

- a) groundwater levels in each bore;
- b) the depth of the bores sampled;
- c) the instantaneous rate of direct discharge from the pipe at the end of the soakage channel to the Meadow Burn;
- d) observations of any conspicuous oil or grease films, scums or foams or floatable or suspended material resulting from the discharge (supported by photographic evidence);
- e) record of water level at the Environment Southland water level station on Meadow Burn at Round Hill Road; and
- f) record of groundwater level at the Environment Southland monitoring bore F44/0181.

9. All samples collected in accordance with Condition 7 will be analysed for:

- Temperature (field measurement)
- pH
- Electrical conductivity
- Total suspended solids (discharge only)
- Turbidity (surface water only)
- Total five day carbonaceous biochemical oxygen demand (discharge only)
- Dissolved oxygen (measurement of surface water only) (as mg/l and percentage of Saturation)
- Total Ammoniacal Nitrogen
- Total Oxidised Nitrogen
- Total nitrogen
- Dissolved reactive phosphorus
- Total Phosphorus
- *Escherichia coli*
- Faecal coliforms
- Fluoride
- Chloride
- Bromide

The analytical sample results for each monitoring event shall be reported in writing to the Consent Authority within four (4) weeks of receipt of the sample results by the Consent Holder.

10. In the event that monitoring undertaken in accordance with Condition 7 identifies that any of the trigger values listed in Condition 11 are exceeded, the consent holder shall undertake the following as appropriate:

- a) check for anomalous results;
- b) assess monitoring results against the up-gradient or up-stream samples to determine whether other land uses may be influencing the exceedance of the trigger value;
- c) identify any mitigation measures that are considered necessary to ensure that groundwater and surface water quality complies with the trigger values given in Condition 11;
- d) Within one month of receiving the results, submit a report to the Consent Authority on the actions undertaken, including identification of any mitigation measures that have been identified and a programme for implementing these measures;
- e) Implement the identified mitigation measures within the proposed timeframes, which shall not be greater than 3 months from submission of the report according to Condition 10(d).

11. The following trigger values shall apply to the monitoring undertaken in accordance with Condition 7:

Parameter sampled	Discharge	Groundwater (at RD5 only)	Meadow Burn (at 50 m downstream only)
Total five-day carbonaceous biochemical oxygen demand (g/m <sup>3</sup> )	50	-	-
Total Ammoniacal Nitrogen (mg/L)	-	-	0.9
Soluble Inorganic Nitrogen (mg/L)	30	5	-
Dissolved Reactive Phosphorus (mg/L)	10	-	-
<i>Escherichia coli</i> (cfu/100mL)	-	2	1,000

*Note: Indicates no trigger value set for this parameter at this location*

12. The consent holder shall undertake an aquatic ecology survey, to characterise the impact of the discharge on the aquatic environment of the Meadow Burn within the first three years after commencement of this consent. This aquatic ecology survey shall consist of:

- a) macroinvertebrate sampling, following Protocol C3 (hard-bottomed, quantitative) as outlined in the document "*Protocols for sampling macroinvertebrates in wadeable streams*"<sup>1</sup>, with analysis for a full range of metrics, including %EPT, MCI and SQMCI;
- b) survey of periphyton during the period 1 November – 30 April, using the rapid assessment protocols for periphyton as outlined in the document "*Stream Periphyton Monitoring Manual*"<sup>2</sup> to assess the:

<sup>1</sup> Stark, J., Boothroyd, I., Harding, J., Maxted, J., & Scarsbrook, M. (2001): Protocols for sampling macroinvertebrates in wadeable streams. Prepared for the Ministry for the Environment.

<sup>2</sup> Biggs & Kilroy (2000): Stream periphyton monitoring manual. Report prepared for the Ministry for the Environment.

- i. presence of bacterial or fungal slime growths as obvious plumose growths or mats;
  - ii. percentage cover of filamentous algae greater than 2 cm long within the stream bed;
  - iii. percentage cover of diatoms any cyanobacteria greater than 0.3 cm thick.
- c) quantitative sampling protocols as outlined in the document "*Stream Periphyton Monitoring Manual*"<sup>3</sup> QM-1b to assess the following periphyton measures, in line with the requirements of the '*Spring Fed*' river standards in the Consent Authority's Regional Water Plan and attached as **Appendix 2**:
- i. Chlorophyll *a* per m<sup>2</sup> for both filamentous algae or diatoms and cyanobacteria.
13. Aquatic ecology monitoring outlined in Condition 12 shall be undertaken at two downstream sample locations and one upstream sample location (as identified on the attached plan), with an appropriate number of replicate samples being collected from each location as follows:
- a) upstream Point 1;
  - b) downstream Point 2;
  - c) downstream Point 3.

Sampling should occur when flows are less than median flow conditions. No sampling shall be carried out within ten days of the Meadow Burn exceeding seven times its median flow or within seven days of flows that are greater than three times the median flow.

Median flow conditions in the Meadow Burn shall be taken as when the groundwater level in the Environment Southland monitoring bore F44/0181 is at 1.41 m below land surface as recorded by the Consent Authority.

14. The consent holder shall submit a report to the Consent Authority within two months of the receipt of results for monitoring undertaken as per requirements of Conditions 12 and 13. The report shall summarise the results of all monitoring, analyse trends and comment on the results comparing them to the '*Spring Fed*' standards within the Consent Authority's Regional Water Plan, 2010, or any subsequent plans and/or water quality targets.

*Note: The assessment outlined in Condition 14 shall be undertaken for comparative purposes only.*

### **On Site Management**

15. An Operations and Maintenance Plan ("the Plan") is to be submitted to the Consent Authority prior to the first exercise of this consent. This Plan shall cover the management of discharges from the site. The system shall be operated in accordance with this manual, which shall be updated as appropriate and updates provided to the Consent Authority, provided the changes do not result in non-compliance with any conditions of this consent. The manual shall include, but not be limited to:
- a) description of the system, including a site map indicating the location of the system and ancillary structures;
  - b) key operational matters including weekly, monthly and annual maintenance checks;
  - c) monitoring requirements and procedures;
  - d) contingency plans in the event of system malfunctions or breakdowns;

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<sup>3</sup> Biggs & Kilroy (2000): Stream periphyton monitoring manual. Report prepared for the Ministry for the Environment.

- e) the means of receiving and dealing with any complaints; and
- f) the management of the discharge to the Meadow Burn.

At all times the consent holder shall ensure that the Consent Authority has a copy of the most recent version of the Operations and Maintenance Manual.

16. Records of maintenance, complaints, malfunctions and breakdowns shall be kept in a log and this log shall be made available to the Consent Authority at any time upon request.
17.
  - a) For the purpose of this consent, the analyses and preservation of all aqueous samples shall be carried out in accordance with the latest edition of APHA "Standard Methods for the Analysis of Water and Wastewater" or by methods approved by the Consent Authority.
  - b) The analyses specified in these conditions are to be carried out by a laboratory with IANZ accreditation, or as agreed to in writing by the Consent Authority.
18. Throughout the duration of this consent, the consent holder shall maintain suitable warning signs adjacent to the discharge point from the WWTP into the Meadow Burn. These signs shall clearly indicate the presence of the treated wastewater discharge.
19. This permit does not authorise the discharge of sludge to land or water.
21. 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, or on receiving monitoring results, 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 Environment Southland Regional Policy Statement;
  - c) amending the monitoring programme to be undertaken;
  - d) adding or adjusting compliance limits; or
  - 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.

for the **Southland Regional Council**



Bruce Halligan  
**Acting Consents Manager**

**Note**

1. *The consent holder shall pay an annual administration and monitoring charge to the Consent Authority, collected in accordance with Section 36 of the Resource Management Act 1991. This charge may include the costs of inspecting the site twice each year (or otherwise as set by the Consent Authority's Annual Plan).*



**APPENDIX 1: Monitoring Location Plan**



## APPENDIX 2: Water Quality Standards from Regional Plan: Water – Appendix G

### *Surface water bodies classified as “Spring Fed”*

The temperature of the water

- shall not exceed 21°C
- shall not exceed 11°C in trout spawning areas during May to September inclusive
- the daily maximum ambient water temperature shall not be increased by more than 3°C when the natural or existing water temperature is 16°C or less, as a result of any discharge. If the natural or existing water temperature is above 16°C, the natural or existing water temperature shall not be exceeded by more than 1°C as a result of any discharge.

The pH of the water shall be within the range 6.5 to 9, and there shall be no pH change in water due to a discharge that results in a loss of biological diversity or a change in community composition.

The concentration of dissolved oxygen in water shall exceed 99% of saturation concentration.

There shall be no bacterial or fungal slime growths visible to the naked eye as obvious plumose growths or mats. Note that this standard also applies to within the zone of reasonable mixing for a discharge.

When the flow is below the median flow, the visual clarity of the water shall not be less than 3 metres.<sup>3</sup>

The concentration of total ammonia shall not exceed 0.32 milligrams per litre.

The concentration of faecal coliforms shall not exceed 1,000 coliforms per 100 millilitres, except for popular bathing sites, defined in Appendix K “Popular Bathing Sites” and within 1 km immediately upstream of these sites, where the concentration of *Escherichia coli* shall not exceed 130 *E. coli* per 100 millilitres.

Chlorophyll *a* shall not exceed 50 milligrams per square metre at any time, or exceed a monthly mean of 15 milligrams per square metre for filamentous algae or diatoms and cyanobacteria.<sup>4</sup>

The Macroinvertebrate Community Index shall exceed a score of 90 and the Semi-Quantitative Macroinvertebrate Community Index shall exceed a score of 4.5.

Fish shall not be rendered unsuitable for human consumption by the presence of contaminants.

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<sup>3</sup> Visual clarity is assessed using the black disc method or other comparable method employed by Environment Southland.

<sup>4</sup> Expressed in terms of reach biomass per unit of exposed strata (i.e., tops and sides of stones) averaged across the full width of the stream or river.