

Condition Schedule – Medium term - up to 15 years

	Definition
A suitably qualified and experienced person	<p>A person who is not an employee of the consent holder and who is suitably qualified, is competent and experienced in the relevant field/area related to the specific consent condition(s) including but not limited to:</p> <ul style="list-style-type: none">- Groundwater monitoring equipment and installation including groundwater levels and conductivity; or- Irrigation efficiency and water use; or- Irrigation performance.

Descriptive Specification

1. This consent authorises the abstraction of groundwater from **[BORE NUMBER]** on the property legally described as **[LEGAL DESCRIPTION]** (hereafter referred to as the property) at approximate map reference NZTopo50 **[MAP REFERENCE]** which is shown in Site Plan **[LOC/LOCATION NUMBER]** attached to and forming part of this resource consent.
2. The Consent Holder must undertake the activity in general accordance with the consent application including all accompanying plans and documents first lodged with the Manawātū-Whanganui Regional Council on **[DATE]** and;
 - a. further information received on **[DATE]** via **[METHOD]** being **[DESCRIPTION]**; and
 - b. further information received on **[DATE]** via **[METHOD]** being **[DESCRIPTION]**.

Where there may be inconsistencies between information provided by the Applicant and conditions of the resource consent, the conditions of the resource consent apply.

ADVICE NOTE: Any variance from the location, design concepts and parameters, implementation and / or operation may require a new resource consent or a change of consent conditions pursuant to section 127 of the Resource Management Act 1991.

Pre-Development Assurance

3. **Prior to exercising this consent or in the case of a renewal, no more than three (3) months** after a renewal has been granted, the Consent Holder shall have a flow meter installed, and maintained thereafter, on Bore XXXX by an accredited installer. The flow meter must:
- a. be located on the water abstraction line; and
 - b. have a pulse counter output traceably calibrated to +/- 5% or better; and
 - c. be capable of providing the daily volume of water abstracted as well as a pulse counter output; and
 - d. be positioned to measure the entire daily volume abstracted under authorisation of this consent; and
 - e. be installed in accordance with the Resource Management (Measurement and Reporting of Water Takes) Amendment Regulations 2020; and
 - f. be installed in accordance with the IrrigationNZ "The New Zealand Water Measurement Code of Practice" September 2018 (or subsequent amendments).

ADVICE NOTE: An accredited installer is currently accredited by Irrigation New Zealand (also referred to as IrrigationNZ) represented by the 'Blue Tick' logo. A list of accredited providers can be located at www.irrigationnz.co.nz

NOTE FOR PLANNER: If flow meter already installed, amend wording to 'consent holder must maintain a flow meter...'

4. **Prior to exercising this consent or in the case of a renewal, no more than three (3) months** after a renewal has been granted, the Consent Holder shall install and maintain, in fully operational condition, a telemetry unit(s) capable of transferring groundwater level, abstraction volume and/or conductivity parameters and is compatible with the Manawatū-Whanganui Regional Council's Telemetry System.

ADVICE NOTE: The telemetry unit will be monitored by the Manawatū-Whanganui Regional Council to ensure compliance with the resource consent conditions and as part of a programme to enable monitoring of total catchment water use.

NOTE FOR PLANNER: Adjust timeframe for installation depending on type of application.

NOTE FOR PLANNER: Include 'conductivity parameters' if electrical conductivity monitoring recommended below.

5. **Prior to exercising this consent or in the case of a renewal, no more than three (3) months** after a renewal has been granted, the Consent Holder shall install and maintain an automatic backflow prevention device within the pump outlet plumbing or within the mainline to prevent the backflow of water through the meter referred to in **Condition 3** of this consent.

NOTE FOR PLANNER: Adjust timeframe for installation depending on type of application.

NOTE FOR PLANNER: If backflow preventer already installed, amend wording to 'consent holder must maintain a flow meter...'

6. **Prior to** exercising this consent or in the case of a renewal, no more than **three (3) months** after a renewal has been granted, the Consent Holder must have the groundwater level monitoring equipment installed by a suitably qualified and experienced person. The groundwater level monitoring equipment must be installed in accordance with the National Environmental Monitoring Standards (NEMS) Water Level Field Management Standard Version 3.0.0, July 2019, specifically:

- a. Report in mmH₂O;
- b. Have a sensor resolution of 1 mm;
- c. Have an accuracy not greater than 0.2%, vented and with a calibration certificate;
- d. Have stability/Drift \leq less than or equal to 0.1%/year;
- e. Record in 15-minute intervals;
- f. Cover the full operating range of the bore, being the ability to record both the maximum and minimum operation of the bore, under pumped and non-pumped conditions;
- g. Be referenced to the bore cap (or stable reference point) surveyed to NZ Vertical Datum 2016 (NZVD16).

ADVICE NOTE: National Environmental Monitoring Standards (NEMS) Water Level Field Management Standard Version 3.0.0, July 2019 provides a reference for installation and monitoring requirements.

NOTE FOR PLANNER: Adjust timeframe for installation depending on type of application.

7. **Prior to** exercising this consent or in the case of a renewal, no more than **three (3) months** after a renewal has been granted, the Consent Holder must have conductivity monitoring equipment installed by a suitably qualified and experienced person. The conductivity monitoring equipment must be installed in accordance with National Environmental Monitoring Standards (NEMS) "Water Quality Part 1 - Sampling, Measuring, Processing and Archiving of Discrete Groundwater Quality Data, specifically:

- a. Report in $\mu\text{S}/\text{cm}$;
- b. Have a sensor resolution of $1\mu\text{S}/\text{cm}$;
- c. Have accuracy of $\pm 1\mu\text{S}/\text{cm}$ or $\pm 0.5\%$ full scale error;

- d. Record in 15-minute intervals;
- e. Cover the full operating range of the bore being the ability to record both the maximum and minimum operation of the bore, under pumped and non-pumped conditions.

ADVICE NOTE: National Environmental Monitoring Standards (NEMS) "Water Quality Part 1 - Sampling, Measuring, Processing and Archiving of Discrete Groundwater Quality Data" provides a reference for installation and monitoring requirements.

NOTE FOR PLANNER: Only included on consents with bore(s) within 5km of the coast.

NOTE FOR PLANNER: Adjust timeframe for installation depending on type of application.

- 8. Installation documentation for the groundwater level and conductivity monitoring equipment detailed in **Condition 6** and **Condition 7** must be provided to Manawatū-Whanganui Regional Council Consents Monitoring Team within **one (1) month** of the equipment being installed. The installation documentation must include:

- a. Who installed the equipment and how the installation was done;
- b. How the equipment will be maintained and serviced; and
- c. If any reference checks on the sensors were undertaken.

ADVICE NOTE: Notification can be sent to the Manawatū-Whanganui Regional Council Consents Monitoring Team via email consents.monitoring@horizons.govt.nz –OR- via mail addressed to: C/- Consents Monitoring Team, Horizons Regional Council, Private Bag 11025, Manawatu Mail Centre, Palmerston North 4442.

NOTE FOR PLANNER: Include 'conductivity monitoring equipment' and reference to condition 7' if electrical conductivity monitoring recommended below.

- 9. The Consent Holder shall ensure that the monitoring equipment referred to in **Conditions 3, 4, 5, 6, and 7** in respect to the flow meters, telemetry equipment, back flow preventer, groundwater level monitoring and conductivity monitoring is located in a position where it can be read and safely accessed at all times.

NOTE FOR PLANNER: Include 'conductivity monitoring equipment' and reference to condition 7' if electrical conductivity monitoring recommended below.

Environmental Standards

- 10. The maximum **daily** abstraction of groundwater shall not exceed:
 - a. **[VOLUME]** cubic metres per day (m³/day) from well number **[NUMBER]** at a maximum instantaneous rate of **[XX]** litres per second (L/s) for the purpose of pasture or crop irrigation; and

- b. **Xxxxx** cubic metres per day m³/day) from well number **[NUMBER]** at a maximum instantaneous rate of **[XX]** litres per second (L/s) for the purpose of [insert essential use].

unless restricted by **Condition 12** below.

11. The maximum **annual** abstraction of groundwater shall not exceed:

- a. **[VOLUME]** cubic metres per year (m³/year) for the purpose of irrigation; and
- b. **[VOLUME]** cubic metres per year (m³/year) for the purpose of [insert essential use].

unless restricted by **Conditions 12** (electrical conductivity) and **14** (groundwater levels condition) below.

ADVICE NOTE: The annual volume applies from **1 November – 31 October** commencing **[DATE]**.

12. The Consent Holder must, in circumstances when the electrical conductivity measured either under condition **25** of this consent or within the Manawatū-Whanganui Regional Council coastal monitoring well **[NUMBER]** exceeds:

- a. XXX µS/cm, immediately decrease the daily abstraction volume to a maximum of **[XX]** m³/day;
- b. XXX µS/cm, immediately decrease the daily abstraction volume to a maximum of **[XX]** m³/day;
- c. XXXX µS/cm, immediately cease the abstraction and shall not resume the abstraction until written notification from the Manawatū-Whanganui Regional Councils Regulatory Manager has been received confirming that abstraction can continue.

The reduction/ceasing of volume authorised by this consent is related to reducing the irrigation volumes and does not include the volume of water used for stock drinking water, domestic water supply or dairymen's washdown.

NOTE FOR PLANNER: Only included on consents with bore(s) within 5km of the coast. Parts of this condition is only required on larger takes where there is the potential for salt water intrusion, it is recommended to consult the groundwater expert to confirm

NOTE FOR PLANNER: Values to be advised from technical expert.

NOTE FOR PLANNER: Exclusion of essential use from reduction, up to 250m³. If essential use is over 250m³, discuss with technical expert.

Operational Restrictions

13. In the event that the equipment detailed in **Conditions 3, 4, 5, 6, and 7** in respect to the flow meters, telemetry equipment, back flow preventer, groundwater level monitoring and/or conductivity monitoring fails, or is removed for servicing or replacement, the Consent Holder shall notify the Manawatū-Whanganui Regional Council Consents Monitoring Team in writing:

- a. At least **five (5) working days'** prior to any planned maintenance; and
- b. within **twenty-four (24) hours** of any breakdown.

ADVICE NOTE: Notification can be sent to the Manawatū-Whanganui Regional Council Consents Monitoring Team via email consents.monitoring@horizons.govt.nz –OR- via mail addressed to: C/- Consents Monitoring Team, Horizons Regional Council, Private Bag 11025, Manawatu Mail Centre, Palmerston North 4442.

NOTE FOR PLANNER: Include 'conductivity monitoring equipment' and reference to condition 7' if electrical conductivity monitoring recommended below.

14. With the exception of the volume of water required for essential use purposes, as set out in **condition 10** above, by the 31 October annually, the Manawatu-Whanganui Regional Council must confirm the annual volume available for irrigation for each year between **1 November to 31 October**. The figure will be based on the highest water recovery level reading in Well Number xxxx from the preceding winter/spring period, and the consent holder must not abstract more than the annual volume as follows:

- a. Trigger Level 1 - Should the maximum spring/winter recovery level reading in Well Number xxxx be less than xxx.xx m RL, the maximum annual volume available for irrigation will be xxxxx m3
- b. Trigger Level 2 - Should the maximum spring/winter recovery level reading in Well Number xxxx be less than xxx.xx m RL, the maximum annual volume available for irrigation will be xxxxx m3
- c. Trigger Level 3 - Should the maximum spring/ winter recovery level reading in Well Number xxx be less than xx.xxm RL, the maximum annual volume available for irrigation will be xxxxx m3
- d. Trigger Level 4 - Should the maximum spring/ winter recovery level reading in Well Number xxx be less than xx.xxm RL, the abstraction for irrigation must cease.

The reduction/ceasing of annual volume authorised by this consent does not include water used for stock drinking water, domestic water supply or dairyshed washdown.

Advice Note: The reductions apply only to the yearly volume stated in Condition **11** and not the daily volumes stated in Condition **10**.

Definition: The maximum spring/winter water recovery level is defined as the maximum recorded water level in bore xxxx as monitored by Manawatu-Whanganui Regional Council between **1 May and 31 October** each year.

NOTE FOR PLANNER: Monitoring bore and trigger to be identified by Council's technical expert.

NOTE FOR PLANNER: Trigger levels to be set as follows:

- a. **Trigger level 1** will be 0.5m below lowest recorded winter/spring level with a reduction to 75% of annual volume.
- b. **Trigger level 2** will be 25% of total observed decline (between start of record and winter/spring 2024), below elevation of Trigger level 1, with a reduction to 60% of annual volume.
- c. **Trigger level 3** will be 50% of total observed decline (between start of record and winter/spring 2024), below elevation of Trigger level 1, with a reduction to 40% of annual volume.
- d. **Trigger level 4** will be 100% of total observed decline (between start of record and winter/spring 2024), below elevation of Trigger level 1, with a reduction to 10% of annual volume.

Post-Development Assurance

15. Within **three (3) months** of installation, the Consent Holder shall have the flow meter (required by **Condition 3**) verified by an Irrigation New Zealand "Blue Tick" accredited verifier. The flow meter shall be verified by an Irrigation New Zealand "Blue Tick" accredited verifier every **five (5) years** thereafter to ensure compliance with condition **[3]**. The Consent Holder shall provide evidence of the verification in writing to the Manawatū-Whanganui Regional Council's Consents Monitoring Team within **one (1) month** of the verification being completed.

ADVICE NOTE: Written verification can be sent to the Consents Monitoring Team via email consents.monitoring@horizons.govt.nz –OR– via mail addressed to: C/- The Consents

Monitoring Team, Horizons Regional Council, Private Bag 11025, Manawatu Mail Centre, Palmerston North 4442.

16. Within **three (3) months** of installation or replacement, and every **five (5) years** thereafter, the Consent Holder shall have the groundwater level monitoring equipment (required by **Condition 6**) verified by a Suitably Qualified and Experienced Person to ensure compliance with **Condition 6**.

The Consent Holder shall provide evidence of the verification in writing to the Manawātū-Whanganui Regional Council Consents Monitoring Team within **one (1) month** of the verification being completed.

ADVICE NOTE: Written verification can be sent to the Consents Monitoring Team via email consents.monitoring@horizons.govt.nz –OR- via mail addressed to: C/- Consents Monitoring Team, Horizons Regional Council, Private Bag 11025, Manawatu Mail Centre, Palmerston North 4442.

17. Within **three (3) months** of installation or replacement, and every **five (5) years** thereafter, the Consent Holder shall have the conductivity monitoring equipment (required by **Condition 7**) verified by a Suitably Qualified and Experienced Person to ensure compliance with **Condition 6**.

The Consent Holder shall provide evidence of the verification in writing to the Manawātū-Whanganui Regional Council Consents Monitoring Team within **one (1) month** of the verification being completed.

ADVICE NOTE: Written verification can be sent to the Consents Monitoring Team via email consents.monitoring@horizons.govt.nz –OR- via mail addressed to: C/- Consents Monitoring Team, Horizons Regional Council, Private Bag 11025, Manawatu Mail Centre, Palmerston North 4442.

NOTE TO PLANNER: Only included on consents with bore(s) within 5km of the coast]
Parts of this condition is only required on larger takes where there is the potential for salt water intrusion, it is recommended to consult the groundwater expert to confirm.

18. The Consent Holder must keep a maintenance record, recording all information relevant to the maintenance undertaken for the groundwater level and conductivity monitoring equipment (required by **Condition 6** and **Condition 7**). The maintenance record must including:
- Details for all maintenance undertaken on the equipment;
 - Details of check readings when taken;
 - Record of changes to the position of the equipment;

- d. Record of annual checks undertaken on the equipment;
- e. Record of sensor replacement and calibration report.

The maintenance record must be provided to the Manawatū-Whanganui Regional Council on an annual basis from commencement of this consent and within **three (3) working days** of a written request to do so.

ADVICE NOTE: The maintenance record can be sent to the Consents Monitoring Team via email consents.monitoring@horizons.govt.nz –OR- via mail addressed to: C/- Consents Monitoring Team, Horizons Regional Council, Private Bag 11025, Manawatu Mail Centre, Palmerston North 4442.

Monitoring Provision

19. Prior to **xxxx [3 months from the date of commencement]**, the consent holder must prepare and submit an Irrigation Efficiency Management Plan prepared by a suitably qualified and experienced person, to Manawatū-Whanganui Regional Council. The purpose of this plan is to ensure ongoing efficient irrigation and minimise water use. The plan must include but not be limited to the following:

- a. A soil moisture budget, including:
 - i. Detailed soil information and soil map (S-map or equivalent) to identify and describe soil types and soil water characteristics of the irrigation area;
 - ii. Details of 'potential evapotranspiration' (PET) monitoring to be undertaken.
- b. Measures to be undertaken to minimise the exceedance of field capacity of the soil types and soil characteristics as assessed in (a).

ADVICE NOTE: Industry guidelines¹ state that irrigation should aim to apply water up to 90% of field capacity to manage the risk of natural variability and/or unexpected rain.

- c. An assessment of the available water efficiency and minimisation measures (such as soil moisture probes, soil moisture budgets, measurement of evapotranspiration and rainfall, irrigation scheduling etc) and their effectiveness and usability on the property;
- d. Identification of which measures from (b) will be utilised to guide irrigation scheduling and water minimisation; and

¹ Page 12 of *Far Focus*, by Foundation for Arable Research, Issue 4, 4 August 2010

- e. Irrigation management measures to be used to ensure compliance with condition 15;
- f. Explanation as to why specific measures are not proposed to be utilised.

ADVICE NOTE: The Irrigation Management Plan can be sent to the Consents Monitoring Team via email consents.monitoring@horizons.govt.nz –OR- via mail addressed to: C/- Consents Monitoring Team, Horizons Regional Council, Private Bag 11025, Manawatu Mail Centre, Palmerston North 4442.

20. The consent holder must, on a **5 yearly basis**, review and update the Irrigation Management Plan required by **condition 19** above. This review must include but not be limited to the following:
- a. Water use (daily and annual volumes) in the time since the commencement of consent;
 - b. Any developments in industry best practice relating to efficiency of water use;
 - c. Assessment of these developments against water use on the property and identification of any opportunities to improve efficiency or reduce water use;
 - d. Identification of measures identified in (b) and (c) which are proposed to be implemented and reasons for any measures which are not proposed to be implemented; and
 - e. Timeframes for any measures to be implemented.
21. The consent holder must undertake irrigation in accordance with the Irrigation Management Plan required by **Condition 20**.
22. By **1 July 20xx** (one year after commencement of this consent) and then **every 5 years thereafter** for the term of this consent, the Consent Holder shall have the irrigation system reviewed by a **suitably qualified and experienced person** and undertake an irrigation performance assessment in accordance with the IrrigationNZ “The New Zealand Water Measurement Code of Practice” September 2018 (or subsequent amendments). The irrigation performance assessment as a minimum shall include, but is not limited to, the following:
- a. an assessment of the existing application method to achieve uniform distribution of water;
 - b. the application rate of water for the soil type(s);
 - c. an assessment of the pump, pipework and irrigators;
 - d. identification of any issues with the irrigation system (if any); and

- e. any recommended changes, upgrade(s) and/or replacement(s) (if required).
23. Within **two (2) months** of the performance assessments being completed under **Condition 22**, the Consent Holder shall provide a report based on the assessment required by **Condition 22** above to the Manawātū-Whanganui Regional Council's Consents Monitoring Team. The report shall identify any changes required (if any) to improve the efficiency of the existing irrigation system, and any proposed additions (if any) to the irrigation system to ensure the performance of the irrigation system is in accordance with the recommendations under **Condition 22**. The report shall provide a timeline of when the proposed works (if any) will be undertaken by the Consent Holder.
- ADVICE NOTE:** Records can be submitted to the Consents Monitoring Team via email consents.monitoring@horizons.govt.nz –OR- via mail addressed to C/- The Consents Monitoring Team, Horizons Regional Council, Private Bag 11025, Manawātū Mail Centre, Palmerston North 4442.
24. The Consent Holder must supply continuous (15-minute intervals) groundwater level monitoring data from Well XXXX to Manawatu-Whanganui Regional Council, via the groundwater level monitoring equipment required by **Condition 6** and telemetry device required by **Condition 4**.
25. The Consent Holder must supply continuous (15-minute intervals) conductivity level monitoring data from Well XXXXX to Manawatu-Whanganui Regional Council, via the conductivity monitoring equipment required by **Condition 7** and telemetry device required by **Condition 4**.
26. If measurements of electrical conductivity under condition **25** –OR- measurements made within the Manawātū-Whanganui Regional Council coastal monitoring well [XX] increase by 50% from any earlier measured value -OR- are greater than 500 µS/cm, then the Consent Holder at their expense, shall:
- collect one water sample in each month July, October, January & April for the duration of the consent; and
 - have laboratory analysis undertaken on the sample for the parameters listed in table 1; and
 - have laboratory analysis undertaken for the ionic balance of the sampled water; and
 - provide the analysis results to the Manawātū-Whanganui Regional Council Regulatory Manager and Science Team.

Table 1: Water Quality Parameters

Parameter	Units
pH	
Calcium	ppm Ca ²⁺
Magnesium	ppm Mg ²⁺
Sodium	ppm Na ⁺
Potassium	ppm K ⁺
Iron	ppm Fe ²⁺
Manganese	ppm Mn ²⁺
Boron	ppm B ³⁺
Silica	ppm SiO ₂
Sulphate	ppm SO ₄ ²⁻
Chloride	ppm Cl ⁻
Carbonate	ppm CO ₃ ²⁻
Bicarbonate	ppm HCO ₃ ⁻

ADVICE NOTE: Analysis Results must be sent to the Manawātū-Whanganui Regional Council via email consents.monitoring@horizons.govt.nz and science.data@horizons.govt.nz –OR- by mail, addressed to: C/- The Regulatory Manager, Horizons Regional Council, Private Bag 11025, Manawatu Mail Centre, Palmerston North 4442.

ADVICE NOTE: The ionic balance of the sampled water should not have a discrepancy of greater than 5%.

Review

27. The Manawātū-Whanganui Regional Council, under s128 of the Resource Management Act, may once per year, in July, serve notice of its intention to review all conditions of this resource consent for the purpose of reviewing the effectiveness of these conditions in avoiding and mitigating any adverse effects on the environment. The review of conditions shall allow for:
- An assessment of the water abstraction volumes and rates detailed in the conditions of this consent against any future allocation policy, and if necessary a change to the monitoring outlined in the conditions of the consent; and /-OR-
 - An assessment of the water abstraction volume and rates detailed in the conditions of this consent against groundwater levels; and / -OR-
 - An assessment of the groundwater trigger levels and/or trigger level bores detailed in the conditions of this consent against updated groundwater level data and overall catchment groundwater levels; and / -OR-

- d. deletion or amendments to any conditions of this resource consent to ensure adverse effects are appropriately mitigated; and / -OR-
- e. addition of new conditions as necessary, to avoid, remedy or mitigate any unforeseen adverse effects on the environment; and / -OR-
- f. if necessary and appropriate, the adoption of the best practicable options to avoid, remedy or mitigate any adverse effects on the environment.

ADVICE NOTE: Any review exercised under this condition may result in the abstraction volume and / or rate being reduced and / or restricted, or further restrictions being placed on the abstraction volume. Efficiency of the take and application method will be factors that will be taken into account in this review.

Duration and Lapsing

- 28. The resource consent will expire on **[same date for all applications to ensure all expire on the same date – 15 years]**.
- 29. If this resource consent is not given effect to by **[LAPSE DATE (Grant Date + 5 Years)]** it shall lapse pursuant to s125 of the Resource Management Act 1991.