Resource Consent

FILE: 2417
(01 - 04)
Replacement

Document Date: 16.03.2026

Pursuant to the Resource Management Act 1991, the Northland Regional Council (hereinafter called "the council") does hereby grant a Resource Consent to:

FAR NORTH DISTRICT COUNCIL

To undertake the following activities associated with the operation and upgrade of the Kaikohe Wastewater Treatment Plant on Lot 2 DP 45233; Sec 27, SO 40585 Blk IV Punakitere SD; Sec 2, SO 12295 Blk IV Punakitere DS; Sec 30 Blk IV Punakitere SD (Cumber Road, Kaikohe)**:**

Note: All location co-ordinates in this document refer to Geodetic Datum 2000, New Zealand Transverse Mercator Projection.

AUT.002417.01.04	**To discharge treated wastewater to an unnamed tributary of Wairoro Stream, at or about location co-ordinates 1674820E 6079440N.**
AUT.002417.02.03	**To discharge contaminants to ground via seepage from the base of an anaerobic pond, oxidation pond and a constructed wetland, at or about location co-ordinates 1674525E 6079466N.**
AUT.002417.03.03	**To discharge contaminants (primarily odour) to air from the wastewater treatment system, at or about location co-ordinates 1674525E 6079466N.**
AUT.002417.04.01	**To discharge water (being the water component of the treated wastewater) to water within, or within a 100 m setback from, a natural inland wetland, at or about location co-ordinates 1674820E 6079440N.**

Subject to the following conditions:

AUT.002417.01, AUT.002417.02 and AUT.002417.04 - Discharge to Water and to Land:

Stage 1 – Existing Pond-Based System

1 Conditions 2 through 10 of this resource consent only apply until the wastewater treatment plant is upgraded in accordance with Condition 11.

2 The volume of treated wastewater discharged to the unnamed tributary of the Wairoro Stream must not, based on a 30 day rolling average of dry weather discharges, exceed 1,900 cubic metres per day. Compliance with this condition must be based on the average daily discharge volume of the 30 most recent "dry weather discharge days".

For the purposes of this consent, a "dry weather discharge day" is any day on which there is less than 1 millimetre of rainfall, and that day occurs after three consecutive days either without rainfall or with rainfall of less than 1 millimetre on each day.

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Advice Note: *The rainfall measurements used to determine a dry weather discharge shall be based on the nearest appropriate rainfall recorder site. The recorder site shall be selected in consultation with the Northland Regional Council.*

3 The Consent Holder must maintain, in good working order, a flow meter on the outlet of the constructed treatment wetland that has a measurement error of ±5% or less to measure the volume of wastewater discharged to the unnamed tributary of the Wairoro Stream.

4 The Consent Holder must keep records of the daily volume of treated wastewater discharged to the unnamed tributary of the Wairoro Stream, as measured by the meter required by Condition 3, the local daily rainfall measurement, and the 30 day rolling average dry weather discharge volume, as defined in Condition 2. These records must be recorded in a format agreed to by the Northland Regional Council.

5 In addition to any requirements of the conditions of this consent, the Consent Holder must monitor the exercise of these consents in accordance with the Monitoring Programme in Schedule 1 (**attached**).

6 The Consent Holder must provide and maintain easy and safe access to each of the following sampling points (all shown on NRC Plan 5798, **attached**):

(a) Northland Regional Council Sampling Site Number 100562, discharge point from the wastewater treatment system into natural wetland, at or about location co-ordinates 1674820E 6079440N.

(b) Northland Regional Council Sampling Site Number 100560, unnamed tributary of the Wairoro Stream at the point where the unnamed tributary discharges into the Wairoro Stream, at or about location co-ordinates 1674854E 6079181N.

(c) Northland Regional Council Sampling Site Number 103316, Wairoro Stream approximately 25 metres upstream of the discharge point from the unnamed tributary into Wairoro Stream, at or about location co-ordinates 1674725E 6079148N.

(d) Northland Regional Council Sampling Site Number 100807, Wairoro Stream approximately 80 metres downstream of the discharge point from the unnamed tributary into Wairoro Stream, at or about location co-ordinates 1674866E 6079142N.

7 Notwithstanding any other conditions of these consents, the exercise of these consents must not give rise to any of the following effects on the water quality of the Wairoro Stream, as measured at Northland Regional Council Monitoring Site 100807, Wairoro Stream approximately 80 metres downstream of the discharge point from the unnamed tributary into Wairoro Stream, when compared with the water quality at Northland Regional Council Monitoring Site 103316, Wairoro Stream approximately 25 metres upstream of the discharge point from the unnamed tributary into Wairoro Stream:

(a) The natural temperature of the water to change by more than 3 degrees Celsius;

(b) The natural pH of the water to exceed the range 6.5 to 9.0;

(c) The concentration of dissolved oxygen (daily minimum) to be reduced by more than 20%;

(d) The production of conspicuous oil or grease films, scums or foams, floatable or suspended materials, or emissions of objectionable odour;

(e) An increase in the median *Escherichia coli* concentration by more than 50 per 100 millilitres, as determined by samples taken in accordance with Section 3.2 of the Monitoring Programme in Schedule 1 (**attached**); and

(f) The concentration of total ammoniacal nitrogen to exceed 4.6 mg/L (when adjusted to pH 8).

8 In the event that the background concentration of total ammoniacal nitrogen or pH of the Wairoro Stream, as measured at Northland Regional Council Site Number 103316, Wairoro Stream approximately 25 metres upstream of the discharge point from the unnamed tributary into Wairoro Stream, do not meet the requirements of Condition 7(b) or (f), then the exercise of these consents shall not result in any measurable adverse change in the water quality of the Wairoro Stream as measured at Northland Regional Council Monitoring Site 100807.

9 The Consent Holder must compare actual influent suspended solids and five-day biochemical oxygen demand loadings, as required to be monitored in accordance with the Monitoring Programme in Schedule 1 (**attached**), with the design loadings for the wastewater treatment system. The results of this comparison must be reported in the monitoring reports required to be prepared in accordance with Section 7 of Schedule 1.

10 The Consent Holder must continue to assess and manage inflow and infiltration to the wastewater reticulation network, with annual reporting on progress and effectiveness of reduction measures.

Stage 2 – Membrane Bioreactor System:

11 The Consent Holder must upgrade the wastewater treatment plant so that all wastewater receives treatment within a fully commissioned Membrane Bioreactor (MBR) system prior to it being discharged in accordance with these consents, by no later than 5 years from the commencement date of these consents.

12 The Consent Holder must submit a progress report to Northland Regional Council every 6 months, from the commencement date of these consents until the MBR system is commissioned.

13 Within forty working days of commissioning the MBR system, written confirmation from a suitably qualified and experienced person that the MBR is operating as designed must be provided to Northland Regional Council.

14 The volume of treated wastewater discharged to the unnamed tributary of the Wairoro Stream must not, based on a 30-day rolling average of dry weather discharges, exceed 2,317 cubic metres per day. Compliance with this condition must be based on the average daily discharge volume of the 30 most recent "dry weather discharge days".

15 For the purposes of this consent, a "dry weather discharge day" is any day on which there is less than 1 millimetre of rainfall, and that day occurs after three consecutive days either without rainfall or with rainfall of less than 1 millimetre on each day.

Advice Note: *The rainfall measurements used to determine a dry weather discharge shall be based on the nearest appropriate rainfall recorder site. The recorder site shall be selected in consultation with the Northland Regional Council.*

16 The Consent Holder must install and maintain a flow meter at the UV disinfection unit that has a measurement error of ±5% or less to measure the volume of wastewater discharged from the wastewater treatment plant.

17 The Consent Holder must validate the accuracy of the flow meter required by Condition 15 at least once every five years. The validation must be undertaken by a suitably qualified and experienced person (SQEP). Written verification from the SQEP that the meter accuracy has

been validated must be provided to the Northland Regional Council within one month of the validation being completed.

18 The Consent Holder must keep records of the daily volume of treated wastewater discharged from the wastewater treatment plant, as measured by the meter required by Condition 15, the local daily rainfall measurement, and the 30 day rolling average dry weather discharge volume, as defined in Condition 14. These records must be recorded in a format agreed to by the Northland Regional Council.

19 Following commissioning of the MBR system, treated wastewater discharged from the plant, as measured immediately after the UV disinfection system and prior to it entering the constructed wetland system, must comply with the following:

Parameter	Median	90th percentile	Range
Escherichia coli	≤10 cfu/100 mL	≤ 100 cfu/100 mL	-
Total Ammoniacal nitrogen	≤ 1.0 g/m³	≤ 5.0 g/m³	-
Total Nitrogen	≤ 5.0 g/m³	≤ 10.0 g/m³	-
5-day carbonaceous biochemical oxygen demand	≤ 10.0 g/m³	≤ 20.0 g/m³	-
Total Suspended solids	≤ 10.0 g/m³	≤ 20.0 g/m³	-
Total phosphorus	≤ 1.0 g/m³	≤ 2.0 g/m³	-
pH	-	-	6.5-8.5

For each parameter except pH, compliance must be determined as follows:

(a) For median concentrations, no more than 10 samples in any 20 consecutive fortnightly samples can exceed the specified concentration.

(b) For 90 percentile concentrations, no more than 2 samples in any 20 consecutive fortnightly samples can exceed the specified concentration.

20 In addition to any requirements of the conditions of this consent, the Consent Holder must monitor the exercise of these consents in accordance with the Monitoring Programme in Schedule 1 (**attached**) following commissioning of the MBR system.

21 The Consent Holder must provide and maintain easy and safe access to each of the following sampling points (sites (b), (c) and (d) are shown on NRC Plan 5798, **attached**):

(a) Northland Regional Council Sampling Site Number 344866, Kaikohe WWTP at UV outlet.

(b) Northland Regional Council Sampling Site Number 100560, unnamed tributary of the Wairoro Stream at the point where the unnamed tributary discharges into the Wairoro Stream, at or about location co-ordinates 1674854E 6079181N.

(c) Northland Regional Council Sampling Site Number 103316, Wairoro Stream approximately 25 metres upstream of the discharge point from the unnamed tributary into Wairoro Stream, at or about location co-ordinates 1674725E 6079148N.

(d) Northland Regional Council Sampling Site Number 100807, Wairoro Stream approximately 80 metres downstream of the discharge point from the unnamed tributary into Wairoro Stream, at or about location co-ordinates 1674866E 6079142N.

(03) Discharge to Air:

22 The Consent Holder's operations must not give rise to any discharge to air of contaminants at or beyond the legal boundary of the area occupied by the Kaikohe wastewater treatment plant that are deemed by an officer of the Northland Regional Council to be noxious, dangerous, offensive or objectionable.

23 The consent holder must prepare an Odour Management Plan for the upgraded wastewater treatment plant and provide it to the Northland Regional Council at least three (3) months prior to the commissioning of the MBR system required by Condition 11.

24 The Odour Management Plan must be prepared by a suitably qualified and experienced person and must detail the methods and operational procedures adopted by the consent holder to ensure compliance with the conditions of the consent. As a minimum the Odour Management Plan must address the following matters:

(a) A description of the wastewater treatment plant facilities;

(b) A description of routine inspection, monitoring and maintenance procedures to be undertaken to ensure effective plant operation and compliance with consent conditions;

(c) Details of operational and maintenance procedures to minimise odour release from the treatment facilities;

(d) Details of the odour complaints procedure, record keeping and response procedure.

25 The Odour Management Plan must be reviewed, and updated if required, every five years and as required as a result of any changes in plant operation or management. Any updated Odour Management Plan must be submitted to the Northland Regional Council, within one month of any updates.

26 The Consent Holder must implement and adhere to the Odour Management Plan.

General Conditions:

27 The Consent Holder must prepare, implement, and maintain an Operations and Maintenance Plan (OMP) for the wastewater treatment plant. The OMP must be appropriate to the treatment system in operation at any given stage and be prepared by a suitably qualified and experienced person.

28 At least three months prior to commissioning the MBR system required by Condition 11, the Consent Holder must submit an updated OMP specific to the MBR-based system to Northland Regional Council.

29 The OMP for the upgraded MBR system must include:

(a) Detailed description of MBR process units and controls;

(b) Membrane cleaning protocols (frequency/chemicals used);

(c) Monitoring of membrane integrity and replacement schedule;

(d) An updated plan showing water quality sampling locations and coordinates, including at the discharge point for the MBR plant after the UV unit;

(e) Management procedures for waste streams including sludge handling/disposal; and

(f) Emergency response procedures specific to MBR operation.

30 The Consent Holder must review the OMP at least annually or following any significant modification to plant operation or infrastructure, whichever occurs first.

31 The wastewater treatment system must be correctly operated and maintained in an effective manner, as to minimise the adverse effects on the environment.

32 Within six months of the commencement of this consent, the Consent Holder must prepare an Avian Botulism Management Plan. The Plan must be prepared by a suitably qualified and experienced person and must include:

(a) Identification of appropriate monitoring methods for early detection of avian botulism;

(b) Actions to be undertaken in the event of an avian botulism outbreak, including response protocols and mitigation measures;

(c) Procedures for timely communication with Fish & Game New Zealand and other relevant stakeholders;

(d) Requirements and timeframes for inviting Northland Fish and Game Council (NFGC) to input and review the Plan as necessary to ensure its ongoing effectiveness.

33 A copy of the Avian Botulism Management Plan must be provided to NFGC upon completion.

Advice Note: *Conditions 31 and 32 have been offered by the Consent Holder on an Augier basis. The Regional Council has no statutory responsibility regarding enforcement of the Avian Botulism Management Plan.*

34 The Consent Holder must on becoming aware of any discharge associated with the Consent Holder's operations that is not authorised by these consents:

(a) Immediately take such action, or execute such work as may be necessary, to stop and/or contain the discharge; and

(b) Immediately notify the Northland Regional Council by telephone of the discharge; and

(c) Take all reasonable steps to remedy or mitigate any adverse effects on the environment resulting from the discharge; and

(d) Report to the Northland Regional Council in writing within one week on the cause of the discharge and the steps taken, or being taken, to effectively control or prevent the discharge.

For telephone notification during the Northland Regional Council's opening hours, the Northland Regional Council's assigned monitoring officer for these consents must be contacted. If that person cannot be spoken to directly, or it is outside of the Northland Regional Council's opening hours, then the Environmental Hotline must be contacted.

35 The Consent Holder must maintain an ongoing relationship with the Working Group by inviting members of the group to meet within three months after the commencement of these consents and quarterly thereafter. The Working Group includes:

(a) Appointed representatives of Te Uri o Hua, Te Takotoke, Ngati Kura, Ngāti Whakaeke, Ngāti Tautahi, Matarahurahu; and

(b) At least two representatives from Far North District Council.

36 The purpose of the Working Group is to provide a forum to:

(a) Receive and discuss information about the operation, maintenance and monitoring of the wastewater treatment plant and its effects on the receiving environment;

(b) Make recommendations to the Consent Holder about measures to reduce effects of the wastewater treatment plant on the environment;

(c) Identify alternative long-term options for discharging wastewater from Kaikohe.

37 The consent holder shall provide an annual report to the Northland Regional Council outlining any progress made on alternative long-term options for discharging wastewater from Kaikohe.

REVIEW CONDITION

38 The council may, in accordance with Section 128 of the Resource Management Act 1991, serve notice on the Consent Holder of its intention to review the conditions of these consents. Such notice may be served annually during the month of May. The review may be initiated for any one or more of the following purposes:

(a) To deal with any adverse effects on the environment that may arise from the exercise of these consents and which it is appropriate to deal with at a later stage.

(b) To require the adoption of the best practicable option to remove or reduce any adverse effect on the environment.

(c) To change existing conditions relating to, or impose new limits on, the quality of the discharges and/or the receiving waters.

(d) To change existing conditions relating to the monitoring of the discharges and/or the receiving waters.

The Consent Holder shall meet all reasonable costs of any such review.

EXPIRY DATE: **35 years from the date of commencement, as in accordance with Section 116 of the RMA**

SCHEDULE 1: MONITORING PROGRAMME

The Consent Holder (or its authorised agent) must monitor these consents in accordance with the following monitoring programme.

1. WASTEWATER DISCHARGE VOLUME

The discharge volume from the treatment plant and the local daily rainfall over the same 24-hour period must be recorded. The Consent Holder must then use this data to calculate the 30 day rolling average dry weather discharge volume, as defined in Conditions 2 and 14.

2. STAGE 1 – TREATMENT SYSTEM MASS LOADINGS

2.1 Biochemical Oxygen Demand and Total Suspended Solids

The influent 5-day biochemical oxygen demand(See Note 1) and total suspended solids daily mass loadings must be determined annually during February-March, on a minimum of four consecutive days under dry weather discharge conditions. A dry weather discharge day is defined in Condition 2.

24 hour flow proportional influent samples shall be taken for determination of the mass loadings.

2.2 Significant Intermittent Loadings

An assessment of the effects on final effluent quality of any significant intermittent loadings to the Kaikohe wastewater treatment system from activities such as discharges by septic tank cleaning contractors and discharges from sources of potentially high organic loading such as stock truck washing facilities must be provided in the Annual Review Report.

3. STAGE 1 – DISCHARGE AND RECEIVING WATER MONITORING

The following monitoring must be undertaken until the Membrane Bioreactor System is commissioned.

3.1 Sites

The following sites (shown on NRC Plan 5798, **attached**) must be monitored.

NRC Monitoring Site Number	Location Description
100562	Discharge from treatment plant (outlet from final treatment wetland at flow monitoring point).
100560	Unnamed tributary, at point where it joins the Wairoro Stream.
103316	Wairoro Stream 25 metres upstream of the discharge point of the unnamed tributary into which the treated wastewater is discharged.
100807	Wairoro Stream approximately 80 metres downstream of the discharge point of the unnamed tributary into which the treated wastewater is discharged.

3.2 Sampling Procedures, Parameters and Frequency

3.2.1 Discharge Monitoring

Two triplicate(See Note 2) samples of the discharged wastewater (NRC Sampling Site 100562) must be taken at least two weeks apart, during each month between November and April (inclusive), and monthly triplicate samples must be collected for the rest of the year. The time must be recorded for each sample and all samples must be analysed for the following parameters:

- Temperature(See Note 3)
- pH
- Dissolved oxygen concentration(See Note 3) and percentage saturation
- 5 day biochemical oxygen demand
- Total suspended solids
- Total ammoniacal nitrogen
- Nitrate-nitrite nitrogen
- Total nitrogen
- Dissolved reactive phosphorus
- Total phosphorus

During the following three two-month periods each year, October-November; February-March; and July-August, 20 triplicate(See Note 2) samples of treated wastewater from NRC Sampling Site 100562 must be taken during each period, with a minimum of one day between samples. These samples must be analysed for *Escherichia coli*(See Note 4) concentration.

Discharge sampling must be co-ordinated with receiving water sampling and the discharge samples must be taken prior to the receiving water samples.

3.2.2 Receiving Water Monitoring

The unnamed tributary of the Wairoro Stream into which the wastewater is discharged must be monitored at a point approximately 30 metres upstream of the point of where the wastewater discharge enters the main stream of the unnamed tributary (Northland Regional Council Site 100560).

The Wairoro Stream must be monitored 25 metres upstream of the point of discharge of the unnamed tributary (Northland Regional Council Site 103316), and at the downstream boundary of the mixing zone, this being approximately 80 metres downstream of the point of discharge from the unnamed tributary (Northland Regional Council Site 100807).

Two triplicate(See Note 2) samples per month, taken at least two weeks apart, must be collected each month between November and April (inclusive) and monthly triplicate samples shall be collected for the rest of the year. Samples must be analysed for the following parameters:

- Temperature(See Note 3)
- pH
- Dissolved oxygen concentration(See Note 3) and percentage saturation
- Total ammoniacal nitrogen
- Nitrate-nitrite nitrogen
- Dissolved reactive phosphorus

The time must be recorded for each receiving water sample.

Compliance shall be determined for each sampling occasion.

During the following three two-month periods each year, (October-November; February-March; and July-August) 20 triplicate(See Note 2) samples must be taken, with a minimum of one day between samples, from the NRC Sampling Sites 100560, 103316 and 100807. Paired samples(See Note 5) must be taken from Sites 103316, and 100807 and the difference between *Escherichia coli* concentrations must be determined for each of the 20 paired samples.

In addition to spot measurements continuous DO measurements must be taken upstream and
downstream of the discharge at least once during summer over the course of a week using a
combined DO/temperature logger to ascertain the 1-day and 7-day minimum.

The median difference for the set of 20 paired samples must not exceed an increase of 50 *Escherichia coli* per 100 millilitres.

To assist data interpretation, the monitoring of parameters with different sampling frequencies shall be integrated so that the maximum number of parameters is sampled at one time.

The water quality data from Northland Regional Council Site 100560 must be considered if non-compliance is recorded, and there is an inconsistency between the wastewater quality data and the Wairoro Stream upstream and downstream data.

3.2.3 Blue-green Algal Toxicity

During periods when blue-green algae are prominent in the oxidation pond discharge, one triplicate sample shall be taken each week from Northland Regional Council Sampling Site 100807 and analysed for microcystins, expressed as microcystin-LR, and for cell counts of potentially toxic blue green algae species.

4. STAGE 2 – DISCHARGE AND RECEIVING WATER MONITORING

Following the commissioning of the MBR wastewater treatment system, the following monitoring must be undertaken.

4.1 Sites

The following sites (shown on NRC Plan 5798, **attached**) must be monitored. The final location and co-ordinates of the discharge point from the MBR plant is to be confirmed within one month of commissioning.

NRC Monitoring Site Number	Location Description
344866	Kaikohe WWTP at UV outlet.
100560	Unnamed tributary, at point where it joins the Wairoro Stream.
103316	Wairoro Stream 25 metres upstream of the discharge point of the unnamed tributary into which the treated wastewater is discharged.
100807	Wairoro Stream approximately 80 metres downstream of the discharge point of the unnamed tributary into which the treated wastewater is discharged.

4.2 Sampling Procedures, Parameters and Frequency

4.2.1 Discharge Monitoring

Two triplicate(See Note 2) samples of the discharged wastewater (NRC Sampling Site 344866), collected at least two weeks apart, must be collected fortnightly and analysed for the following parameters:

- Temperature(See Note 3)
- pH
- Dissolved oxygen concentration(See Note 3) and percentage saturation
- 5-day carbonaceous biochemical oxygen demand
- Total suspended solids
- Total ammoniacal nitrogen
- Nitrate-nitrite nitrogen
- Total nitrogen
- Dissolved reactive phosphorus
- Total phosphorus
- *Escherichia coli*(See Note 4)

The time must be recorded for each sample.

Discharge sampling must be co-ordinated with receiving water sampling and the discharge samples must be taken prior to the receiving water samples.

4.2.2 Receiving Water Monitoring

The unnamed tributary of the Wairoro Stream into which the wastewater is discharged must be monitored at a point approximately 30 metres upstream of the point of where the wastewater discharge enters the main stream of the unnamed tributary (Northland Regional Council Site 100560).

The Wairoro Stream must be monitored 25 metres upstream of the point of discharge of the unnamed tributary (Northland Regional Council Site 103316), and at the downstream boundary of the mixing zone, this being approximately 80 metres downstream of the point of discharge from the unnamed tributary (Northland Regional Council Site 100807). Paired samples(See Note 5) must be taken from Sites 103316 and 100807.

Two triplicate(See Note 2) samples must be collected fortnightly. Samples must be analysed for the following parameters:

- Temperature(See Note 3)
- pH
- Dissolved oxygen concentration(See Note 3) and percentage saturation
- Total ammoniacal nitrogen
- Nitrate-nitrite nitrogen
- Total Nitrogen
- Dissolved reactive phosphorus
- Total Phosphorus
- Escherichia coli(See Note 4)

The time must be recorded for each receiving water sample.

In addition to spot measurements, continuous DO measurements must be taken upstream and downstream of the discharge at least once during summer over the course of a week using a combined DO/temperature logger to ascertain the 1-day and 7-day minimum, for a period of at least two years, which may then be reduced to either a 3 or 5-year monitoring cycle (depending on the outcome of the two-year monitoring regime results showing improvement relative to the pre-upgrade monitoring).

To assist data interpretation, the monitoring of parameters with different sampling frequencies shall be integrated so that the maximum number of parameters is sampled at one time.

4.2.3 Ecological Monitoring of the Receiving Water Environment

Ecological monitoring must be undertaken on an annual basis for two consecutive years following the plant upgrade to establish a baseline of information, which may then be reduced to either a 3 or 5-year monitoring cycle (depending on the outcome of the two-year monitoring regime results showing improvement relative to the pre-upgrade ecological surveys).

Ecological monitoring should occur above and below the discharge point and will be intended to determine the following parameters:

(a) Biotic indices for ecosystem health (Macroinvertebrate Community Index and Semi-Quantitative Macroinvertebrate Community Index)

(b) Periphyton cover

(c) Methods should follow those outlined in the Cawthron report 3601 to enable comparison with pre- and post-upgrade ecological conditions.

Notes:

(1) The “total” 5-day biochemical oxygen demand must be measured and nitrogenous inhibitors must not be added to the samples prior to analysis.

(2) Triplicate sampling shall involve collection of three separate samples taken at least five minutes apart during the same sampling event. Analysis shall be conducted on a composite sample made up of equal volumes of each triplicate sample.

(3) Temperature and dissolved oxygen concentration shall be measured in the field using a meter in accordance with standard procedures and triplicate measurements are not required for these parameters, apart from the measurement of dissolved oxygen in the facultative pond which is to be measured in accordance with Section 3.

(4) *Escherichia coli* shall, unless otherwise agreed to by the Northland Regional Council, be measured using the Colilert™ method.

(5) Paired samples are samples taken from the same body of water prior to and after the addition of the wastewater discharge. Paired samples shall be obtained by marking the upstream water with dye (or small drogues such as oranges) at the same time as the upriver sample is taken, and then sampling the marked body of water when it reaches the downstream boundary of the mixing zone.

5. RECORD OF SIGNIFICANT ODOURS

A record must be kept of any significant odour at or beyond legal boundary of the area occupied by the Kaikohe wastewater treatment system. The record must identify the source and cause of any significant odour, duration of the odour, wind strength and direction, remedial action undertaken, and the degree of success of the remedial action.

6. SAMPLE COLLECTION, SAMPLE TRANSPORT, AND LABORATORY REQUIREMENTS

All samples must be collected in accordance with recognised industry standards and using appropriate containers supplied or approved by the analysing laboratory.

Samples must be transported to the laboratory under documented chain-of-custody procedures and in accordance with relevant standards to ensure sample integrity is maintained at all times.

All analyses must be undertaken by a laboratory accredited to ISO/IEC 17025 (or equivalent), or holding other recognised quality assurance accreditations such as IANZ or Ministry of Health accreditation. Analyses must use internationally or nationally accepted standard methods where applicable.

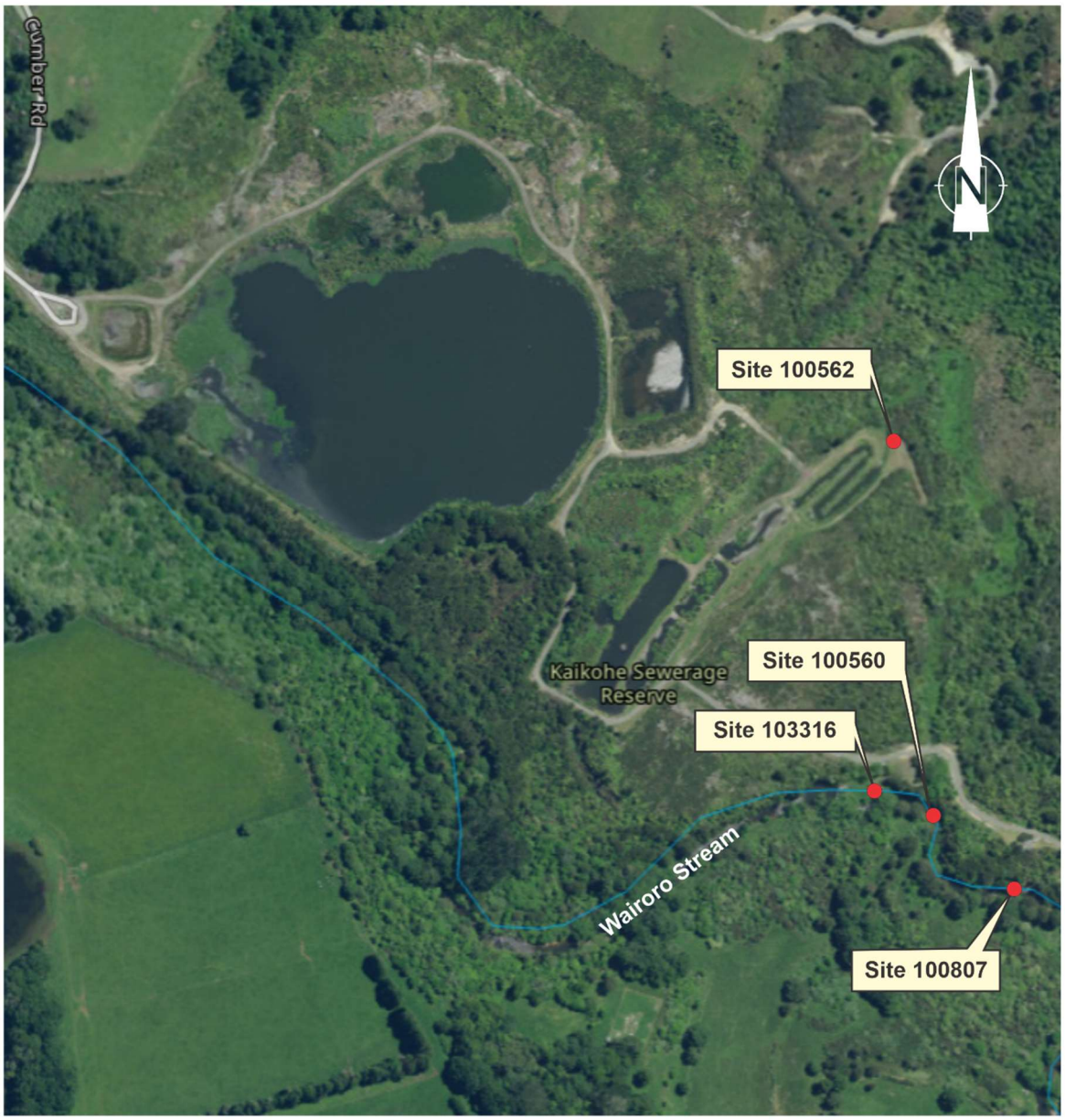
The Consent Holder must retain all documentation relating to sample collection, transport, chain of custody, and laboratory analysis, and provide these to Northland Regional Council upon request.

7. REPORTING

The Consent Holder must prepare monthly reports on the monitoring undertaken in accordance with this schedule. These reports must include all the raw data, the averages and/or medians calculated for compliance purposes, and a summary showing the level of compliance with any consent conditions for which limits have been defined.

The monthly reports must be in a format agreed to by the Northland Regional Council and must be forwarded to the Northland Regional Council by the 15th of the following month.

Where the monitoring is required to be undertaken over a period greater than a month, then the results of that monitoring event shall be included in the next scheduled monitoring report. If the monitoring results indicate a non-compliance with any consent condition, then the Consent Holder shall report the results to the Northland Regional Council within 24 hours of receiving the analysis results.



Site 100562	Discharge from treatment plant (outlet from final treatment wetland)
Site 100560	Discharge from unnamed tributary to Wairoro Stream
Site 103316	25 metres upstream of discharge into Wairoro Stream
Site 100807	80 meters downstream discharge into Wairoro Stream

Northland REGIONAL COUNCIL
Te Kaunihera ā rohe o Te Taitokerau

Sampling Sites for Kaikohe Wastewater Treatment Plant

Scale:	N.T.S.	
Drawn:	KATM	02/26
File:	2417	
Plan Number.	**5798**	