

APP.002417.01.04 – Proposed Conditions of Consent

FAR NORTH DISTRICT COUNCIL, PRIVATE BAG 752, KAIKOHE 0440

To undertake the following activities associated with the operation of the Kaikohe wastewater treatment system on Lot 2, DP 45233, Blk XV, Omapere SD; Sec 27, SO 40585 Blk IV Punakitere SD; Sec 2, SO 12295 Blk IV Punakitere SD; Sec 30 Blk IV Punakitere SD.

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

- (01) To discharge treated wastewater to an unnamed tributary of Wairoro Stream, at or about location co-ordinates 1674845E 6079488N.
- (02) 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.
- (03) To discharge contaminants (primarily odour) to air from the Kaikohe wastewater treatment system, at or about location co-ordinates 1674525E 6079466N.

Subject to the following conditions:

(01) and (02) Discharge to Water and to Land

Stage 1 – Existing Pond-Based System

- 1 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 1,710 cubic metres per day. Compliance with this condition shall 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.

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.*

- 2 The Consent Holder must maintain in good working order a flow meter on the outlet of the constructed treatment wetland that has an accuracy of $\pm 5\%$ to measure the volume of wastewater discharged to the unnamed tributary of the Wairoro Stream.
- 3 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 2, the local daily rainfall measurement, and the 30 day rolling average dry weather discharge volume, as defined in Condition 1. These records must be recorded in a format agreed

to by the Northland Regional Council and shall be forwarded to the Northland Regional Council by 15 May of each year for the preceding six months of November to April, and by 15 November of each year for the preceding months of May to October

- 4 The Consent Holder must monitor the exercise of these consents in accordance with the Monitoring Programme in Schedule 1 (**attached**).
- 5 The Consent Holder must prepare monthly reports on the monitoring undertaken in accordance with Conditions 3 and 4. These reports must include, but not be limited to, 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 prior to the fifteenth working day 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 must report the results to the Northland Regional Council within 24 hours of receiving the analysis results.
- 6 The Consent Holder must provide and maintain easy and safe access to each of the following sampling points (all shown on NRC Plan 3514, **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 1674845E 6079488N.
 - (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 shall not change by more than 3 degrees Celsius;
 - (b) The natural pH of the water shall be within the range 6.5 to 9.0;

- (c) The concentration of dissolved oxygen (daily minimum) shall not 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) The increase in the median *Escherichia coli* concentration shall not exceed 50 per 100 millilitres, for samples taken in accordance with Section 4.2.2 of the Monitoring Programme in Schedule 1 (**attached**).
- (f) The concentration of total ammoniacal nitrogen shall not exceed the following:

pH of Water at the Time of Sampling	Total Ammoniacal Nitrogen ([NH ₃ + NH ₄]-N) (grams per cubic metre)
6.0	2.57
6.1	2.56
6.2	2.54
6.3	2.52
6.4	2.49
6.5	2.46
6.6	2.43
6.7	2.38
6.8	2.33
6.9	2.26
7.0	2.18
7.1	2.09
7.2	1.99
7.3	1.88
7.4	1.75
7.5	1.61
7.6	1.47
7.7	1.32
7.8	1.18
7.9	1.03
8.0	0.90
8.1	0.78
8.2	0.66
8.3	0.56
8.4	0.48
8.5	0.40
8.6	0.34
8.7	0.29
8.8	0.24
8.9	0.21
9.0	0.18

In the event that the background concentration of total ammoniacal nitrogen, 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, exceeds the above concentrations, then the exercise of these consents shall not result in an increase of the total ammoniacal nitrogen concentration of more than 0.10 grams per cubic metre.

- 8 The Consent Holder must compare actual influent suspended solids and five day biochemical oxygen demand loadings, as required to be monitored in accordance with Section 1 of 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 Annual Review Report required to be prepared in accordance with Condition 15.

- 9 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

- 10 The Consent Holder must upgrade the wastewater treatment plant to incorporate a Membrane Bioreactor (MBR) system by no later than 5 years from commencement of consent.
- 11 The Consent Holder must submit a progress report to Northland Regional Council every 6 months until the MBR system is fully operational.
- 12 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 Council.
- 13 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 shall 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.

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.*

- 14 Following commissioning of the MBR system, treated wastewater discharged from the plant, immediately after the UV disinfection system and prior to entering the constructed wetland system, must comply with the following limits:

Parameter	Limit (median)	Limit (90 th percentile)	Limit (range)
<i>Escherichia coli</i>	≤10 cfu/100 mL	≤ 100 cfu/100 mL	–
Total Ammoniacal nitrogen	≤ 1.0 g/m ³	≤ 5.0 g/m ³	–
Total Nitrogen	≤ 5.0 g/m ³	≤ 10.0 g/m ³	–
5-day carbonaceous biochemical oxygen demand	≤ 10.0 g/m ³	≤ 20.0 g/m ³	–
Total Suspended solids	≤ 10.0 g/m ³	≤ 20.0 g/m ³	–
Total phosphorus	≤ 1.0 g/m ³	≤ 2.0 g/m ³	–
pH	–	–	6.5-8.5

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

- (a) to determine compliance with the median concentration limits no more than 10 samples in any 20 consecutive fortnightly samples shall exceed the specified limit.
 - (b) To determine compliance with the 90 percentile limits, no more than 2 samples in any 20 consecutive fortnightly samples shall exceed the specified limit.
- 15 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.
- 16 Following three years of receiving environment monitoring undertaken in accordance with Condition 15, the Consent Holder must prepare a summary report. The report must include, but not be limited to, all the raw data, time series and paired sample assessment statistics, and an assessment against discharge and receiving water quality standards. The report must be in a format agreed to by the Northland Regional Council and must be forwarded to the Northland Regional Council within 3 months of completion of the monitoring.
- 17 Following submission of the receiving environment monitoring report prepared under Condition 16, the Consent Holder may, in consultation with the Northland Regional Council, review the Monitoring Programme in Schedule 1 (**attached**). The review shall consider compliance with the consent conditions, and shall also include review of sampling methods, sites, parameters and frequencies. Changes may be made to the monitoring programme with the written agreement of the Northland Regional Council.
- 18 The Consent Holder must provide and maintain easy and safe access to each of the following sampling points (all shown on NRC Plan **XXXX**, **attached**) for a period of three years following commissioning of the MBR system:
- (a) Northland Regional Council Sampling Site Number **XXXXXX**, discharge point from the MBR plant after the UV unit, at or about location co-ordinates **XXXXXX XXXXXX**.
 - (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

- 19 The Consent Holder's operations must not give rise to any discharge of contaminants at or beyond the legal boundary of the area occupied by the Kaikohe wastewater treatment system, which is deemed by a suitably trained and experienced Enforcement Officer of the Northland Regional Council to be noxious, dangerous, offensive or objectionable to such an extent that it has, or is likely to have, an adverse effect on the environment.

General Conditions

- 20 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.
- 21 At least three months prior to commissioning the upgraded MBR system, the Consent Holder must submit an updated OMP specific to the MBR-based system to Council for certification.
- 22 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) Management procedures for waste streams including sludge handling/disposal; and
 - (e) Emergency response procedures specific to MBR operation.
- 23 The Consent Holder must review the OMP at least annually or following any significant modification to plant operation or infrastructure, whichever occurs first.
- 24 The Consent Holder must submit an Annual Review Report to Northland Regional Council by 1 August each year, covering the previous period from 1 July to 30 June. This report must include, but is not limited to, a summary of all monitoring results required under Schedule 1 (**attached**).
- 25 The wastewater treatment system shall be correctly operated and maintained in an effective manner.
- 26 Within six months of the commencement of this consent, the Consent Holder must prepare and implement an Avian Botulism Management Plan for the wastewater treatment plant. The Plan must be prepared by a suitably qualified and experienced person and must include, but not be limited to:
- (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.
- 27 A copy of the Avian Botulism Management Plan must be provided to Northland Regional Council upon completion, and the Plan must be reviewed and updated as necessary to ensure its ongoing effectiveness.

28 If the Consent Holder becomes aware of any discharge of contaminants associated with their operations that is not in accordance with the conditions of this consent, it must immediately notify Northland Regional Council. In addition, if the unauthorised discharge (excluding discharges to air) occurs outside the legal boundary of the wastewater treatment plant, the Consent Holder must also immediately notify the Medical Officer of Health at Northland Health Ltd. Within one week of becoming aware of such a discharge, the Consent Holder must provide a written report to Northland Regional Council. The report must include, but is not limited to:

- (a) The nature, extent and cause of the discharge;
- (b) The location of the discharge and receiving environment;
- (c) The date, time, and duration of discharge;
- (d) The quantity of contaminant discharged;
- (e) The measures taken to mitigate any adverse effects; and
- (f) The proposed measures to prevent similar discharges in future.

29 The Consent Holder must maintain records of any complaints relating to the operation of these consents received by the Consent Holder, as detailed below:

- (a) The name and address of the complainant (where provided);
- (b) The date and time the complaint is received;
- (c) The duration of the event that gave rise to the complaint;
- (d) The location from which the complaint arose;
- (e) The weather conditions prevailing at that time;
- (f) Any events in the management and operation of any processes that may have given rise to the complaint; and
- (g) Any actions taken by the Consent Holder, where possible, to minimise contaminant emissions.

The Consent Holder must notify the Northland Regional Council as soon as is practicable of any complaint received. Records of the above shall also be sent to the Northland Regional Council immediately upon request.

30 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 this consent and quarterly thereafter. The Working Group includes:

- (a) Local representatives of Te Uri o Hua, Te Takotoke, Ngati Kura, Ngāti Whakaeke, Ngāti Tautahi, Matarahurahu; and
- (b) Representatives from Far North District Council.

31 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.
- 32 The consent holder must prepare an Odour Management Plan and submit the Plan to the Northland Regional Council for certification within six months of commencement of operation of the MBR system.
- 33 The Odour Management Plan must be prepared by a suitably qualified and experienced person and shall 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
- 34 The Odour Management Plan shall be reviewed, and updated as a result, every five years and as required as a result of any changes in plant operation or management.
- 32 The Northland Regional 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, or to deal with any such effects following assessment of the results of the monitoring of these consents and/or as a result of the Northland Regional Council's monitoring in the area.
 - (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.
 - (c) 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]

SCHEDULE 1: MONITORING PROGRAMME

The Consent Holder (or its authorised agent) must monitor Resource Consent **XXXX** 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 1 and 13.

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 1.

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 shall be provided in the Annual Review Report.

3. STAGE 1 – FACULTATIVE (OXIDATION) POND AND TREATMENT WETLAND DISSOLVED OXYGEN MONITORING

The concentration and percentage saturation of dissolved oxygen must be measured every three months at three points at approximately equal intervals around the edge of the oxidation pond, and at the outlet from each of the five treatment wetland cells.

Dissolved oxygen measurements in the facultative pond must be taken at least 60 centimetres from the water's edge and at a constant depth of 5 centimetres below the water surface.

Dissolved oxygen monitoring of the facultative pond and treatment wetlands must be carried out on one of the days on which final effluent and receiving water monitoring is undertaken, and must be carried out

prior to the sampling of the final effluent and receiving water. The time must be recorded for all samples.

During each visit for monitoring purposes, any significant odours at or beyond the property boundary must be noted and reported to the Northland Regional Council within 24 hours of the visit. "Property boundary" is defined in Condition 10 of these consents.

4. STAGE 1 – DISCHARGE AND RECEIVING WATER MONITORING

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

4.1 Sites

The following sites (shown on NRC Plan 3514, **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.

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 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.

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).

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.

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.

4.2.3 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.

Notes:

- (1) The “total” 5-day biochemical oxygen demand shall be measured and nitrogenous inhibitors shall 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 2.0.
- (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. STAGE 2 – DISCHARGE AND RECEIVING WATER MONITORING

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

5.1 Sites

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

NRC Monitoring Site Number	Location Description
XXXXXX	Discharge from treatment plant (after UV).
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.

5.2 Sampling Procedures, Parameters and Frequency

5.2.1 Discharge Monitoring

Two triplicate^(See Note 2) samples of the discharged wastewater (NRC Sampling Site **XXXXXX**), collected at least two weeks apart, must be collected at least monthly (minimum 20 per year) 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.

5.2.2 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, collected at least two weeks apart, must be collected at least monthly (minimum 20 per 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
- Total Nitrogen
- Dissolved reactive phosphorus
- Total Phosphorus
- *Escherichia coli* ^(See Note 4)

The time must be recorded for each receiving water sample.

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.

6. 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.

7. 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