



File: 932
01 to 03
Change to conditions

Document date: 16.04.2015

Resource Consent

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, PRIVATE BAG 752, KAIKOHE 0400

To undertake the following activities associated with the operation of the Kaitaia Wastewater Treatment System:

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

AUT.000932.01.03: To discharge treated wastewater to the Awanui River on Pt Lot 4A DP 4093 Blk V Takahue SD, at or about location co-ordinates 1620752E 6114931N.

AUT.000932.02.02: To discharge contaminants (primarily odour) to air from a wastewater treatment system presently located on Section 87 Blk V Takahue SD, at or about location coordinates 1620595E 6114496N.

AUT.000932.03.02: To discharge contaminants to ground via seepage from a wastewater treatment system located on Section 87 Blk V Takahue SD, at or about location co-ordinates 1620595E 6114496N.

Subject to the following conditions:

AUT.000932.01.03 and AUT.000932.03.02: Discharge to Awanui River and Seepage to Ground

- 1 The volume of treated wastewater discharged from the sewage treatment plant to the Awanui River shall not, based on a 30 day rolling average of dry weather discharges, exceed 3,100 cubic metres per day. Compliance with this condition shall be based on the average 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 day shall be based on the nearest appropriate rainfall recorder site. This recorder site shall be selected in consultation with the Northland Regional Council.*

- 2 The Consent Holder shall install and maintain a flow meter with an accuracy of $\pm 5\%$ on the outlet of the wastewater treatment system to measure the volume of treated wastewater discharged to the Awanui River.
- 3 The Consent Holder shall monitor the exercise of these consents in accordance with the Monitoring Programme in Schedule 1 (**attached**).
- 4 The Consent Holder shall prepare monthly reports of the results of all monitoring required to be undertaken in accordance with Condition 3, that shall include both the raw data and averages and/or medians calculated to determine compliance with the conditions of these consents, and a summary showing the level of compliance for those parameters for which limits have been defined. The monthly reports shall be in a format agreed to by the Northland Regional Council and shall be forwarded to the Northland Regional Council prior to the tenth 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 shall report the results to the Northland Regional Council within 24 hours of receiving the analysis results.
- 5 The Consent Holder shall keep records of the daily volume of the treated wastewater discharged to the Awanui River, as measured by the meter required to be maintained on the outlet of the wastewater treatment system in accordance with Condition 2. In addition, the Consent Holder shall keep records of the 30 day rolling average dry weather discharge, as defined in Condition 1. These records shall be recorded in a format agreed to by the Northland Regional Council and shall be forwarded to the Northland Regional Council by 15 May, for the preceding six months of November to April, and by 15 November, for the preceding months of May to October.
- 6 The F-specific bacteriophage concentrations in the final treated wastewater, as measured at Northland Regional Council Sampling Site 100373, shall not exceed the following:
 - (a) 50th percentile of 140 plaque forming units; or
 - (b) 90th percentile of 750 plaque forming units.Compliance with this condition shall be determined in accordance with Section 2 of Schedule 1 (**attached**).
- 7 The Consent Holder shall provide and maintain easy and safe access to the following sampling point, as shown on the Northland Regional Council Plan No 3475 (**attached**):
 - (a) Northland Regional Council Sampling Site Number 100373, a point located at the outlet from the treatment system, at or about location co-ordinates 1620772E 6114688N.
- 8 Notwithstanding any other conditions, the exercise of these consents shall not cause the water quality of the Awanui River, as measured at Northland Regional Council Monitoring Site 100370, immediately upstream of its confluence with the Waihoe Channel to fall below the following when compared with the water quality at Northland Regional Council Monitoring Site 100369 (Awanui River 50 metres upstream of the discharge):

- (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 shall not be reduced by more than 20%;
- (d) There shall be no production of conspicuous oil or grease films, scums or foams, floatable or suspended materials, or emissions of objectionable odour;
- (e) There shall be no acute toxicity, or significant adverse effects of chronic toxicity, to natural aquatic life by reason of a concentration of toxic substances. Compliance with this requirement shall be determined from the results of whole effluent toxicity monitoring in accordance with Section 4.3 of the Monitoring Programme in Schedule 1 (**attached**);
- (f) The hue of the waters shall not be changed by more than 10 Munsell units;
- (g) The waters shall not be tainted so as to make them unpalatable to farm animals, nor contain toxic substances to the extent that they are unsuitable for consumption by farm animals. The microcystin concentration shall not exceed 2.3 micrograms per litre, expressed as microcystin-LR, for samples taken in accordance with Section 4.2.3 of the Monitoring Programme in Schedule 1 (**attached**);
- (h) No significant increase in the *Escherichia coli* concentration; and
- (i) The concentration of total ammoniacal nitrogen shall not exceed the following:

pH of Water at the Time Sampling	Total Ammoniacal Nitrogen [[NH ₃ + NH ₄]-N) (grams per cubic metre)
6.0	2.57
6.1	2.56
6.2	5.54
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

pH of Water at the Time Sampling	Total Ammoniacal Nitrogen [[NH ₃ + NH ₄]-N] (grams per cubic metre)
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 100369 (Awanui River 50 metres upstream of discharge) exceeds the above concentration, then the discharge shall not result in an increase in concentration of more than 0.10 grams per cubic metre.

- 9 The Consent Holder shall undertake an assessment of the degree of infiltration of stormwater and/or groundwater into the Kaitaia sewage reticulation system. If there is excessive infiltration into the wastewater treatment system occurring, then a programme for infiltration reduction shall be provided to the Northland Regional Council. If an infiltration reduction programme is undertaken, the results of infiltration investigations, work undertaken, progress made and priorities for further work, shall be included in the Annual Review Report, required to be prepared in accordance with Condition 15.

AUT.000932.02.02 Discharge to Air

- 10 The Consent Holder's operations shall not give rise to any discharge of contaminants to the air at or beyond the property boundary of the treatment plant site (presently being Section 87 Blk V Takahue SD), 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

- 11 The wastewater treatment system shall be correctly operated and maintained in an effective and workmanlike manner. In addition the Consent Holder shall implement the following improvements within two years of the date of commencement of this consent:
- (a) The discharge of wastewater from the ponds by wave wash over the bunds onto adjacent land shall be prevented; and
 - (b) An appropriately designed influent screen shall be installed at the inlet to the first oxidation pond. For the purpose of this condition, an "appropriately designed influent screen" is one that removes all large solids that would not degrade within the treatment system; is self cleaning and is sized to allow wastewater to pass through the screen under all influent flow regimes.
- 12 The Consent Holder shall prepare and submit a Management Plan covering all aspects of the operation and maintenance of the wastewater treatment system, including the discharge structure, for certification by the Northland Regional Council, within six months of the date of commencement of these consents.

The Management Plan shall include, but not be limited to, the following:

- (a) Specification of the design wastewater volume, dimensions, design loading and expected treatment performance of each component of the treatment system in which wastewater treatment occurs.

- (b) A schedule of inspection, servicing, and maintenance actions to be carried out on the wastewater treatment system. This will include a schedule for the repair of damaged wave bands around the oxidation pond edges.
- (c) Where it is not practical to schedule maintenance activities, such as the desludging of oxidation ponds, a monitoring programme shall be provided to demonstrate that the design treatment capacity is maintained, and criteria shall be provided to trigger required maintenance. Particular attention shall be given to the method used for measuring the depth of wastewater and sludge in treatment ponds in which soft sludge accumulates. When desludging of the oxidation ponds is required, a detailed plan of the proposed desludging shall be provided to Northland Regional Council at least one month prior to commencement of any desludging works.
- (d) Contingency measures for unauthorised discharges. These shall include measures to be undertaken following the discharge of wastewater by wave wash over the pond bunds onto surrounding land.
- (e) Methods to be used to combat nuisances that might arise in the treatment system including midges and other insects, and blue-green algae (cyanobacteria).

Note: *Algicides, including copper sulphate, and insecticides shall not to be used within the oxidation ponds without the prior written approval of the Northland Regional Council.*

- 13 The operation and maintenance of the wastewater treatment system shall be undertaken in accordance with the certified Management Plan required to be prepared in accordance with Condition 12, but also always subject to the conditions of these consents. Any changes to the Management Plan shall be subject to the written certification of the Northland Regional Council.
- 14 The Consent Holder shall, in consultation with the Northland Regional Council, review the Management Plan two years after the date of commencement of these consents, and thereafter at no greater than five yearly intervals. Any changes to the Management Plan as a result of a review shall be subject to the written certification of the Northland Regional Council. The Consent Holder shall meet all reasonable costs of each review.
- 15 The Consent Holder shall prepare an Annual Review Report for the previous year (1 April to 31 March) that shall include, but not be limited to, the following:
 - (a) A summary of all activities required by the Management Plan; and
 - (b) A summary of the results of all monitoring required to be undertaken in accordance with Conditions 3, 4 and 5.
 - (c) An assessment of the effects of any significant intermittent loadings to the wastewater treatment system during the year 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 on the effectiveness of the treatment process, and consequently the receiving water quality.

The Annual Review Report shall be forwarded to the Northland Regional Council by 1 May each year.

- 16 The Consent Holder shall, for the purposes of adequately monitoring these consents as required under Section 35 of the Act, on becoming aware of any incident or situation that does not comply with these consents, immediately advise the Northland Regional Council of the incident. In the event of any unauthorised discharge of contaminants (excluding those to air) outside of the boundaries of the treatment plant, the Consent Holder shall immediately notify the Medical Officer of Health, Northland Health Ltd.

The Consent Holder shall then supply a written report to the Northland Regional Council within one week detailing:

- (a) The nature of the non-compliance;
- (b) The location of the discharge and receiving environment;
- (c) The time of discharge;
- (d) The duration of discharge;
- (e) The quantity of contaminant discharged;
- (f) The nature of contaminant discharged (eg. raw sewage, primary, secondary treated sewage);
- (g) The measures taken to mitigate the effects on the environment and public health; and
- (h) The proposed measures to prevent similar discharges in future.

- 17 The Consent Holder shall, for the purposes of adequately monitoring these consents as required under Section 35 of the Act, 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 shall 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.

- 18 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 of the state of the environment 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 provide for compliance with rules in any regional plan that has been made operative since the commencement of these consents.
- (d) To deal with any inadequacies or inconsistencies the Northland Regional Council considers there to be in the conditions of these consents, following the establishment of the activities the subject of these consents.
- (e) To deal with any material inaccuracies that may in future be found in the information made available with the application. (Notice may be served at any time for this reason.)
- (f) To change existing conditions relating to, or impose new limits on, the quality of the discharges and/or the receiving waters.

The Consent Holder shall meet all reasonable costs of each review.

EXPIRY DATE: 30 NOVEMBER 2021

The original resource consent CON19970093201 dated Seventeenth day of August 2005 was authorised by Cr Lorraine Hill, Hearing Committee Chairperson under delegated authority from the Council. This change to consent conditions is granted this Sixteenth day of April 2015 under delegated authority from the Council by:



Stuart Savill
Consents Programme Manager – Water and Wastes

SCHEDULE 1

MONITORING PROGRAMME

The Consent Holder (or its authorised agent) shall monitor Resource Consent 0932 in accordance with the following monitoring programme.

1. FINAL DISCHARGE VOLUME

The daily wastewater discharge volume shall be recorded together with the local daily rainfall over the same 24-hour period, in accordance with Condition 1.

2. INFLUENT AND DISCHARGE MONITORING FOR VIRAL INDICATOR

The concentration of F-specific bacteriophage shall be determined in the final discharge at monthly intervals.

Compliance with the 50th and 90th percentile values set out in Condition 6 shall be determined over a fixed 12 month period. The 50th and 90th percentile values shall be calculated using the 12 most recent monthly monitoring results required under this Schedule and any supplementary monitoring results from audit sampling undertaken by the Northland Regional Council within the relevant 12 month period.

The number of allowable exceedances within a 12 month period for the 50th and 90th percentile are shown in the following table:

Number of samples	50 th percentile value: Allowable number of exceedances	90 th percentile value: Allowable number of exceedances
12	6	1
13	7	1
14	7	1
15	8	2
16	8	2

A non-compliance occurs when the number of exceedances for a percentile value is greater than that allowable for the number of samples used to calculate the percentile.

If a non-compliance occurs, then the 12 month period for that percentile begins again.

An allowable exceedance of a percentile value shall only be as a result of natural variation in the treated wastewater quality from a well maintained and effectively operating treatment system.

3. TREATMENT POND DISSOLVED OXYGEN MONITORING

The concentration of dissolved oxygen in each wastewater treatment pond shall be measured every three months at three points at approximately equal intervals around the edge of each wastewater treatment pond. Measurements shall be taken at least 60 centimetres from the water's edge and at least 5 centimetres below the water's surface. Dissolved oxygen monitoring in the treatment ponds shall be co-ordinated with the monitoring required by Section 4 of the monitoring programme.

4. DISCHARGE AND RECEIVING WATER MONITORING

4.1 Sites

The following sites (shown on NRC Plan 3475, **attached**) shall be monitored.

NRC Monitoring Site Number	Location Description
100373	Discharge from treatment plant. (Outlet from treatment system).
100369	Awanui River 50 metres upstream of treatment system discharge.
100370	Awanui River immediately upstream of its confluence with the Waihoe Channel.

4.2 Sampling Procedures, Determinands and Frequency

4.2.1 Discharge Monitoring (NRC Site 100373)

A single triplicate^(See Note 2) sample of discharged wastewater shall be collected once each month. All samples shall be taken between 1000 and 1200 hours and analysed for the following determinands:

Temperature^(See Note 3)

pH

Dissolved oxygen concentration^(See Note 3) and percentage saturation

5 day biochemical oxygen demand^(See Note 1)

Total suspended solids

Total ammoniacal nitrogen

Escherichia coli^(See Note 4)

F-specific bacteriophage

The discharge sampling shall be undertaken on the same day as the receiving water sampling. If possible, each discharged wastewater sample shall be taken from the discharge which enters the body of receiving water from which the upstream sample receiving water sample has been taken, and from which the downstream receiving water sample is to be taken.

4.2.2 Receiving Water Monitoring

The Awanui River shall be monitored 50 metres upstream of the discharge from the treatment plant (Northland Regional Council Site 100369), and at the downstream boundary of the mixing zone, being Northland Regional Council Site 100370.

One triplicate^(See Note 2) upstream and downstream sample per month shall be collected. All samples shall be taken between 1000 and 1200 hours and analysed for the following determinands:

Temperature^(See Note 3)

pH

Dissolved oxygen concentration^(See Note 3) and percentage saturation

Total ammoniacal nitrogen

Escherichia coli^(See Note 4)

Notes:

- (1) *The "total" five 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 treatment ponds, which is to be measured in accordance with Section 3.0.*
- (4) *Escherichia coli shall, unless otherwise agreed to with the Northland Regional Council, be measured using the Colilert™ method.*

4.2.3 Blue-green Algal Toxicity

During periods when blue-green algae are prominent in the pond discharge one triplicate sample shall be taken each week from NRC Sampling Site 100370, and analysed for microcystins, expressed as microcystin-LR.

4.3 Whole Effluent Toxicity Testing

Monitoring of whole effluent toxicity (WET) shall be undertaken on samples of discharged wastewater. The monitoring programme shall consist of an initial screening study of four samples taken at two monthly intervals commencing within two months of the date of commencement of this consent. The results shall be reviewed by the Northland Regional Council, and provided no significant toxicity is detected, whole effluent toxicity monitoring shall be undertaken annually on two samples taken at least two months apart during the December to March period.

The Consent Holder shall, at least one month prior to commencing whole effluent toxicity testing, provide a proposed programme for whole effluent toxicity monitoring to the Northland Regional Council for approval. The proposed programme shall include protocols for effluent sampling, handling and transport, test species and methods to be used, sample dilutions to be used in the tests, methods of interpretation of results, and a criterion for unacceptable toxicity. The whole effluent toxicity testing shall not commence until the written approval of the Northland Regional Council has been obtained for the whole effluent toxicity monitoring programme.

4.4 Record of Significant Odours

A record shall be kept of any significant odours at or outside the treatment plant boundary. The record shall 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.

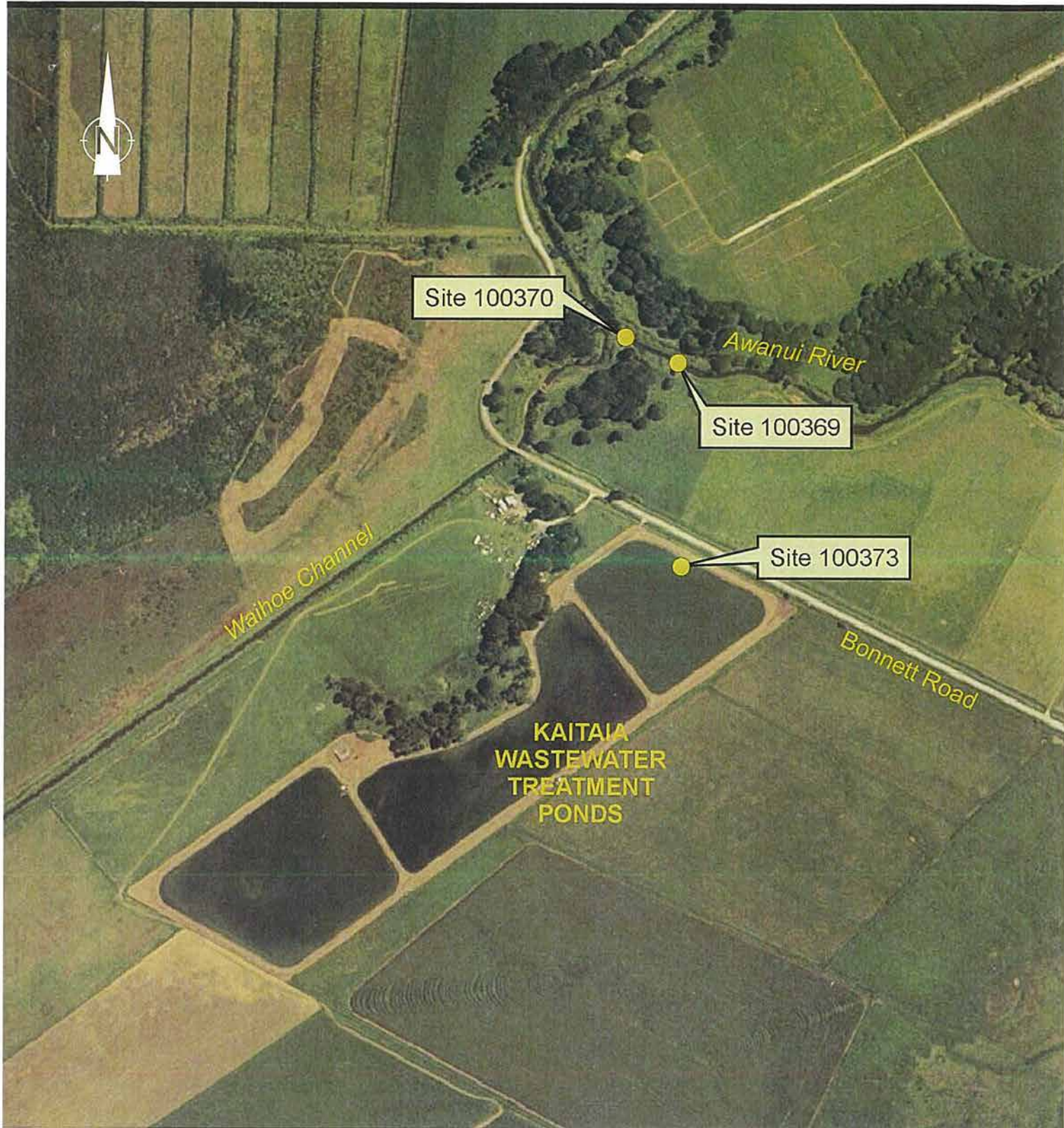
5 SAMPLE COLLECTION, SAMPLE CONTAINERS AND TRANSPORT, AND ANALYTICAL METHODS

All samples shall be collected using standard procedures and in appropriate laboratory supplied containers.

All samples collected as part of this monitoring programme shall be transported in accordance with standard procedures and under chain of custody to the laboratory.

All samples collected shall be analysed at a laboratory with registered quality assurance procedures[#], and all analyses shall be undertaken using standard methods, where applicable.

[#] Registered Quality Assurance Procedures are procedures which ensure that the laboratory meets recognised management practices as would include registrations such as ISO 9000, ISO Guide 25, Ministry of Health Accreditation, IANZ.



<u>Site Number</u>	<u>Co-ordinates (NZTM)</u>	<u>Site Name</u>
NRC Site 100373	1620772 - 6114688	Outlet from Treatment System
NRC Site 100369	1620782 - 6114914	50m upstream of discharge
NRC Site 100370	1620713 - 6114952	100m downstream of discharge



RESOURCE CONSENT
CON19970093201
 For
Far North District Council
Sampling Sites
Kaitaia Wastewater Treatment Plant

Scale:	N.T.S.
Drawn:	CNA 07/04
App'd:	
Plan No.	3475