CON20051496901
(01, 03-08)

EARTH TECH ENGINEERING PTY LIMITED & KAIPARA DISTRICT COUNCIL, 71 QUEENS ROAD, MELBOURNE, VICTORIA 3004, AUSTRALIA

To undertake the following activities associated with the construction and operation of a sewage collection, treatment, and disposal system servicing Mangawhai township, at various locations as specified within this consent.

Note: All locations referred to in this document are expressed as Geodetic Datum 2000, New Zealand Transverse Mercator Projection.

(01) **Discharge Permit**: To discharge treated wastewater into/onto land at Lincoln Downs.

(03) **Discharge Permit:** Unplanned discharge of raw sewage from pump stations onto land.

(04) **Discharge Permit:** To discharge contaminants to air (primarily odour) from a sewage reticulation, treatment and disposal system, including during unplanned discharges of raw sewage from pump stations.

(05) **Water Permit:** To take water from a dam for pasture irrigation.

(06) **Land Use Consent:** To place and use sewer pipelines under and/or over the beds of eight watercourses in the catchments of Mangawhai Harbour and Hakaru River.

(07) **Coastal Permit:** To place a sewer pipeline over the coastal marine area of Mangawhai Harbour at three locations.

(08) **Discharge Permit:** To divert and discharge stormwater from a wastewater treatment site.

Subject to the following conditions:

Untreated Wastewater Quantity

1 Prior to being discharged to land, all wastewater shall be treated within a wastewater treatment plant located on Lot 1 DP 153155 PT Lot 3 DP 108638 Allot 369 Mangawhai Psh Blk II Mangawhai SD SUBJ TO EASE-RES, at or about, location co-ordinates 1743192E 6005357N.

This wastewater treatment plant shall include a granular filtration system and disinfection system. The granular filtration system shall be designed to remove helminths. For the purpose of these consents, disinfection is defined as the use of a process designed specifically to reduce the number of viable, potentially infectious, micro-organisms in the wastewater.

2 The quantity of wastewater received at the treatment plant shall not exceed 5,500 cubic metres in any 24 hour period, as measured between 9.00 a.m. on one day and 9.00 a.m. on the following day. For compliance purposes, this condition shall be monitored in accordance with Schedule 1 (**attached**).

3 A meter with accuracy of ±5% shall be installed and maintained on the inlet to the wastewater treatment plant. The meter shall be used to measure the volume of wastewater entering the wastewater treatment plant. To determine the level of accuracy of the influent flow meter, the meter shall be calibrated at regular intervals in accordance with Schedule 1 (**attached**).

Treated Wastewater Effluent Quality

4 Treated effluent quality shall be monitored in accordance with Schedule 2 (**attached**). The results from the analysis of samples collected in accordance with Schedule 2 shall be no greater than the performance requirements listed in Table 1 below:

The Consent Holder shall notify the Regional Council within five days of receiving the results of the sample analysis if any performance requirement specified in Table 1 is exceeded.

TABLE 1: Treated Effluent Quality

Parameter	Units	Performance Requirements		
		Median [a]	Average [b]	Maximum [c]
Group A Parameters (daily sampling)				
E. coli	MPN	10	-	100
Group B Parameters (8 day sampling)				
Total Dissolved Solids	mg / L	-	500	-
Total Nitrogen	mg / L	-	30	-
Phosphorous	mg / L	-	10	-
Total Suspended Solids	mg / L	-	10	-
Carbonaceous Biochemical Oxygen Demand	mg / L	-	10	-

Notes for Table 1

a The median is calculated on any twelve consecutive results.
b The average is the arithmetic mean of any seven consecutive results.
c The maximum applies to any single sample.
- A dash indicates no performance requirement applies.

Land Application System

5 The Consent Holder shall construct a dam for the storage of treated effluent prior to it being irrigated to land, on Allot 282 Parish of Kaiwaka (SO 3201/B), at or about location co-ordinates 1734506E : 6001741N. The dam shall have a minimum storage volume of 110,000 cubic metres. The required storage volume is the working volume of the dam and does not include the free board between the maximum operational working water level and the top of the crest of the dam. The internal surface of the dam shall be constructed in such a manner that the hydraulic capacity of the surface is no greater than 1 X 10^{-9} metres per second, averaged over the internal surface area of the dam.

6 Treated effluent shall be spray irrigated to land only within the properties listed in Table 2. The irrigation system shall incorporate technology that minimises the potential for spray drift, including use of low to medium pressure irrigators, fixed sprinkler systems, inward throwing irrigators near the boundary and spray heads which produce larger spray droplets.

TABLE 2: Irrigation Site Details

Property Title	Description	GIS Reference (at or about co-ordinates)
Lot 1 DP 177387	Pasture	1734029E : 6002126N
Allot 284 Parish of Kaiwaka (SO 3201/B)	Pasture	1734252E : 6001927N
Allot 282 Parish of Kaiwaka (SO 3201/B)	Pasture	1734506E : 6001741N
Lot 2 DP 204704	Pasture	1734655E : 6001549N
Lot 1 DP 204704	Pasture, including dwelling	1735021E : 6001822N

7 The outside edge of any spray irrigation arc shall not be within the following buffer areas:

(a) All land within 20 metres of any water body, as defined by the Resource Management Act 1991; and

(b) All land within 30 metres of the legal boundary of the properties listed in Table 2 and any other adjacent legal property except for Lot 3 DP 209183 (the “bush block”); and

(c) All land within 50 metres of any dwelling.

In addition to the above buffer areas, no treated effluent shall be spray irrigated to land that has a fall greater than 3 metres over any 10 metres measured horizontally.

8 The rate at which treated wastewater is irrigated to land shall not exceed an annual application rate of 5,000 cubic metres per hectare between 1 April and 31 March the following year.

For the purposes of this condition the annual application rate shall be determined by the volume of wastewater, in cubic metres, discharged to land between 1 April and 31 March the following year divided by the total area, in hectares, on which the wastewater was discharged.

9 Notwithstanding Condition 8, the instantaneous irrigation rate shall not result in any overland flow of treated effluent beyond the irrigation area into any buffer area, as defined by Condition 7.

10 A grab sample(s) of the treated effluent from the storage dam shall be collected and analysed in accordance with Schedule 3 (**attached**) from a point adjacent to where it is drawn into the irrigation system.

In the event that the maximum concentration, as identified in Table 3, is exceeded, irrigation shall cease until such time that three consecutive daily samples are below the maximum concentration. In the event that any sample result exceeds the trigger concentrations listed in Table 3, the Consent Holder shall investigate the source of the contamination.

TABLE 3: Irrigated Water Sampling Requirements

Parameter	Units	Trigger Level	Maximum
E. coli	MPN	1000	10,000

11 A flow meter with an accuracy of ±5% shall be installed and maintained on the outlet pipe from the storage dam to the irrigation system. This meter shall be used to measure the daily volume of treated effluent, midday to midday, that is being irrigated to land.

12 The Consent Holder shall ensure that the irrigation system is connected and continuously communicating with an electronic monitoring system. The monitoring system shall be capable of, and utilised for, notifying the sewerage system operator of at least the following:

(a) Immediate notification of irrigation pipe line breakages; and

(b) On-line indication of irrigated water flow rate; and

(c) On-line indication of water levels in the irrigation dam; and

(d) On-line indication of wind speed and wind direction at the irrigation area.

In addition, the monitoring system shall:

(e) Allow the operator of the irrigation system to remotely switch off the irrigation system.

13 To enable the collection of treated effluent samples prior to it being irrigated to land, the Consent Holder shall provide and maintain easy and safe access to a sampling point either adjacent to where the treated effluent is taken from the dam for irrigation or at some other point prior to the treated effluent actually entering the spray irrigation system.

14 For each day that the irrigation system is operating, the Consent Holder shall keep a written log of the volume of treated effluent discharged to land and the area, in hectares, over which it was irrigated. A copy of these records shall be reported in accordance with Schedule 4 (**attached**). These records shall be used to monitor compliance with Condition 8 of this consent.

15 Notwithstanding Condition 8, the Consent Holder may irrigate treated effluent to land in such a manner that results in the surface runoff of contaminants from the irrigation area and the subsequent discharge of contaminants to water only under the following circumstances:

(a) The working volume of the storage dam is likely to be exceeded and the soil conditions are such that the irrigation of treated effluent to land will result in surface run-off; and

(b) The treated effluent quality complies with Condition 4; and

(c) The applicant provides 10 days notice to downstream water users within 1 km of the irrigation area that a discharge is likely to occur.

16 Prior to the date of commissioning the wastewater treatment plant, the Consent Holder shall develop a procedure to manage the irrigation system whenever Condition 15 is exercised. The procedure shall, as a minimum include:

(a) Notifying the Regional Council at least ten working days prior to exercising Condition 15;

(b) Maintenance of a water user contact list for Cook Stream and Hakaru River, within 1 kilometre downstream of the irrigation area.

(c) Notification of the identified water users at least ten working days prior to the exercise of Condition 15, and

(d) Recording the volume of treated effluent that was irrigated to land in accordance with Condition 15 and advising that volume to the Regional Council and identified water users within five days of ceasing to irrigate treated effluent to land in accordance with Condition 15.

17 The Consent Holder shall forward to the Regional Council, prior to the date of commissioning the wastewater treatment plant, a copy of the irrigation management procedure required by Condition 16. The Consent Holder shall operate the irrigation system in accordance with this irrigation management procedure whenever Condition 15 is exercised.

18 The Consent Holder shall at least one month before the annual irrigation season forward a programme of proposed irrigation timing to the Regional Council for monitoring purposes.

(03) Discharge Permit – Unplanned Discharge of Raw Sewage from Pump Stations onto Land

19 The Consent Holder shall keep a written record of all unplanned discharges of raw sewage from the sewage collection system. This record shall include the following information (or estimate):

(a) The location of the discharge;

(b) The time the discharge started;

(c) The duration of the discharge;

(d) The quantity of wastewater that was discharged; and

(e) The reason for the unplanned discharge.

A copy of this written record shall be forwarded to the Regional Council within 24 hours of the occurrence of the unplanned discharge.

For the purposes of this consent the sewage collection system includes all pump stations as Listed in Table 4, pipelines, and manholes, and any other components which are involved in the conveyance of raw sewage from properties to the sewage treatment system.

TABLE 4: Pump Stations

Reference	Location	
	General	GIS (at or about co-ordinates)
A	Lincoln Street	1743601E : 6002930N
B	Cheviot Court	1743447E : 6002904N
C	Sea Breeze Estate	1742988E : 6003172N
E	Heather Street	1743180E : 6003819N
F	North end of Retirement Village	1742723E : 6004666N
G	Alamar Crescent	1743086E : 6005009N
H	Pearl Street	1743153E : 6005825N
J	Wintle Street	1743664E : 6005919N
Outfall	Corner of Molesworth Drive and Thelma Road	1742392E : 6003101N
VA	Molesworth Drive (Mangawhai Village)	1741678E : 6001082N
VB	Moir Street	1741392E : 6000813N
VC1	Insley Street	1741829E : 6000706N
VC2	Anchorage Estate	1741580E : 6000596N

20 The Consent Holder shall ensure that all unplanned discharges of raw sewage from the sewage collection network are responded to and cleaned up as soon as is practicable, in accordance with the Consent Holder's official response procedure for unplanned discharges.

21 In the event that an unplanned discharge of raw sewage from the sewage collection system enters any watercourse, or the coastal marine area, then the Consent Holder shall immediately notify the Regional Council.

22 All pump stations identified in Table 4 of this consent shall include at least the following:

(a) One duty and one standby pump. The capacity of the standby pump(s) shall be at least equal to that of the largest duty pump; and

(b) Automatic switching from duty to standby pumps on failure of the duty pump; and

(c) 12 hours of emergency storage volume between the start level of the duty pump and the lowest point at which sewage would start to discharge from the pump station or connected gravity sewers. As a minimum the emergency storage volume shall be based on the estimated average daily dry weather flow during peak summer use at each pumping station in the year 2042; and

(d) The ability to connect a portable generator to the pump station switchboard which has the capacity to operate the duty pump.

23 The Consent Holder shall ensure that the pump stations listed in Table 4 are connected and continuously communicating with a remote electronic monitoring system. The monitoring system shall be capable of, and utilised for, notifying the EcoCare sewage collection system operator of at least the following:

(a) Duty and standby pump start failure; and

(b) Mains power failure; and

(c) High water level in the pump station; and

(d) An imminent overflow from a pump station; and

(e) Monitoring system failure.

In addition, the monitoring system at each pump station shall:

(f) Allow the operator of the system to remotely switch the duty and standby pumps; and

(g) Have a continuous back up power supply in case of mains power failure.

The Consent Holder shall keep a written log of all alarms generated by the remote monitoring system.

24 The 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 this consent within one month of being formally notified, in accordance with Conditions 21 and 22, of any unplanned discharge of raw sewage from the sewage collection system. A review under this condition will involve the assessment of conditions relating to the level of emergency storage provided at each pump station and the other safety measures provided to minimise the potential for an unplanned discharge occurring from the sewage collection system.

25 For the purposes of the lapsing provisions of Section 125 of the Act, these consents shall not lapse until their expiry.

(04) Discharge Permit: To Discharge Contaminants to Air (primarily odour)

26 The Consent Holder's operations shall not give rise to any discharge of contaminants, at or beyond the "*Wastewater Treatment Plant Odour Boundary*", which is deemed by a suitably trained and experienced Enforcement Officer of the 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.

In the event that discharges to air occur that are deemed by the enforcement officer not to comply with this condition the Consent Holder shall take action to mitigate the effects of the non-complying discharge. This action may include, inter alia, installation of temporary odour filters, generators, deodorising and altering the operating regime of the wastewater treatment plant. The actions taken to mitigate the odour discharge shall remain in place until the non-compliant air discharge event is rectified.

For the purposes of this condition, the *"Wastewater Treatment Plant Odour Boundary"* is defined by; the southern boundary, the western boundary, 20 metres north of the northern boundary and 20 metres east of the eastern boundary of the area legally occupied by the wastewater treatment plant (the designated area), excluding the access way.

The Consent Holder shall forward to the Regional Council, prior to construction of the wastewater treatment plant, a survey Plan of the *"Wastewater Treatment Plant Odour Boundary"*.

27 Prior to construction of the wastewater treatment plant, the Consent Holder shall present to the Regional Council the findings of an investigation into the proposed wastewater treatment plant odour control system, which shall include undertaking an odour dispersion model. The investigation shall assess whether the proposed wastewater treatment plant odour control system is sufficient to minimise the risk of adverse effects from discharges of contaminants (odour) to air on neighbouring properties.

28 The Consent Holder's operations associated with the sewage collection system, as defined in Condition 19, shall not give rise to any discharge of contaminants to air (namely odour) which is deemed by a suitably trained and experienced Enforcement Officer of the 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.

In the event that discharges to air occur that are deemed by the enforcement officer not to comply with this condition the Consent Holder shall take action to mitigate the effects of the non-complying discharge. This action may include, inter alia, installation of temporary odour filters, generators, deodorising and altering the operating regime of the wastewater treatment

plant. The actions taken to mitigate the odour discharge shall remain in place until the non-compliant air discharge event is rectified.

29 The Consent Holder's operations shall not give rise to any discharge of contaminants, at or beyond the "Irrigation Area Odour Boundary", which is deemed by a suitably trained and experienced Enforcement Officer of the 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.

In the event that discharges to air occur that are deemed by the enforcement officer not to comply with this condition the Consent Holder shall take action to mitigate the effects of the non-complying discharge. This action may include, inter alia, installation of temporary odour filters, generators, deodorising and altering the operating regime of the wastewater treatment plant. The actions taken to mitigate the odour discharge shall remain in place until the non-compliant air discharge event is rectified.

For the purposes of this condition, the "Irrigation Area Odour Boundary" is defined by the properties listed in Table 2, excluding the buffer areas defined in Condition 6.

(05) Water Permit: To Take Water from a Dam for Pasture Irrigation

30 The Consent Holder shall take treated wastewater and/or rainfall that falls directly on the storage dam surface from the treated wastewater storage dam constructed and installed in accordance with Condition 5 of this consent as required.

(06 & 07) Land Use Consent and Coastal Permit: Sewer Pipeline Crossings of Watercourses and the Coastal Marine Area

31 The Consent Holder shall, at least one week prior to the commencement of any streambed disturbance earthworks, lodge with the Regional Council, a Sediment Management Plan (SMP) for each stream crossing, which sets out the practices and procedures to be adopted in order that compliance with the conditions of these consents are achieved. The SMP shall include, but not be limited to, the following:

(a) The expected duration of the proposed works within the bed of the stream;

(b) Methodology of stream diversion works during the period of construction;

(c) Erosion and sediment control measures;

(d) Diagrams and/or plans, of a scale suitable for on-site reference, showing the locations of the stream diversion works;

(e) Measures to prevent spillage of fuel, oil and similar contaminants;

(f) Stream bed restoration measures to minimise scouring following construction;

The Consent Holder shall undertake the activities authorised by these consents in accordance with the SMP.

32 To reduce the risk of sediment discharges from the site, earthworks within the bed of any watercourses shall only be carried out during periods of low stream flow, but not between 1 May and 30 September in any year unless otherwise agreed to beforehand by the Regional Council.

33 The Consent Holder shall ensure that any temporary damming of the stream required to facilitate construction activities in the 'dry' and reduce downstream siltation, shall be for periods of no more than 48 hours. All materials used for damming shall be effectively contained to prevent downstream contamination.

34 The Consent Holder shall remove all unwanted materials and refuse from the consent area upon the completion of the works authorised by these consents, to the satisfaction of the Regional Council.

35 The Consent Holder shall adequately maintain the structures associated with these consents.

(08) Discharge Permit: To Divert and Discharge Stormwater from a Wastewater Treatment Site

36 The discharge of stormwater from the Wastewater Treatment Plant site shall comply with the following:

(a) The best practicable option for on-site stormwater disposal shall be incorporated into the stormwater management system to minimise changes to stormwater flows after development for at least the 1 in 5 year return period storm event.

(b) All hazardous substances storage areas shall be bunded or otherwise designed with sufficient capacity to provide secondary containment that meets the following criteria:

(i) Where containers are stored that have capacities of less than or equal to 450 litres, the secondary containment is able to contain the total capacity of substances stored; and

(ii) Where a single container with a capacity of greater than 450 litres is stored, the secondary containment is able to contain 110% of the volume of the container, or where two or more containers with capacities of greater than 450 litres are stored, the secondary containment is able to contain 100% of the volume of the largest container plus 10% of the aggregate capacity of all other containers.

(c) The stormwater collection system is designed to avoid any hazardous substances or contaminants (including unintentional releases) entering the system, or a stormwater interceptor system shall be installed.

(d) Any waste stream on the site shall be bunded or otherwise contained, within an area of sufficient capacity to provide secondary containment equivalent to 100% of the quantity of any process water or waste that has the potential to spill into a stormwater collection system, in order to prevent waste entering the stormwater collection system; and the site is managed such that the concentration of contaminants in stormwater leaving the site do not pose an immediate or long-term hazard to human health or the environment beyond a 10 metre radius of the discharge point.

(e) The stormwater collection system shall be designed to cater for stormwater flows resulting from not less than a 1 in 5 year return period storm event and a stabilised overland flow path is provided for to allow flows up to and including a 1 in 50 year storm event in excess of the capacity of the primary collection system.

(f) The stormwater treatment system, and any associated works or equipment shall be operated and maintained in an effective operating condition.

General

37 The Consent Holder shall forward to the Regional Council design details of the wastewater treatment system, not less than three months after the date that construction of the wastewater treatment system commences. These documents are to be used to assist the Regional Council's monitoring of the treatment process. These design details shall include, but not be limited to, the following:

(a) A site layout plan, showing the location of all process units and buildings; and

(b) A site elevation plan, showing the relative heights of all process units and buildings; and

(c) A liquids process flow diagram, showing how wastewater flows through the treatment process, including any recycle streams; and

(d) A solids process flow diagram, showing how sludge flows through the treatment process, including any waste or recycle streams; and

(e) An alarm list providing information on each alarm involved in the wastewater treatment process, including; the alarm tag name, a general description of the alarm and its purpose.

The Consent Holder shall ensure that all plans are drawn to scale.

38 The Consent Holder shall forward to the Regional Council design details of the irrigation system, not less than three months after the date that construction of the treated storage dam commences. These design details shall include, but not be limited to, the following:

(a) Design details of the final pumping chamber, including the mechanism by which alternate areas will be irrigated with treated effluent during each day;

(b) Design details of the spray irrigation system, and

(c) Site plans showing the location of the storage dam, the actual area to be utilised for the spray irrigation of wastewater, the location of the spray irrigators and the reticulation lines to the spray irrigators, the slopes of the disposal area as determined by a registered surveyor, the buffer areas, and the location of any watercourses and stormwater flow paths within the disposal area.

The Consent Holder shall ensure that all plans are drawn to scale.

39 The Consent Holder shall forward to the Regional Council an Environmental Management Plan not less than three months after the date that construction of the treated storage dam commences. The Environmental Management Plan shall be based on that presented as *"EcoCare Reclaimed Water Irrigation Scheme Lincoln Downs Site Environmental Management Plan"* (19 June 2006) and include, but not be limited to:

(a) Procedures for managing the irrigation process when the treated wastewater does not meet the requirements of this consent; and

(b) The procedure required as part of Condition 16 of this consent; and

(c) The proposed monitoring programme.

Treated Wastewater shall not be discharged to ground without the approval by the Regional Council Monitoring Manager that the Environmental Management Plan meets the requirements of the requirements of this consent.

40 The Consent Holder shall, for the purposes of adequately monitoring these consents as required under Section 35 of the Resource Management Act 1991, on becoming aware of any contaminant associated with the Consent Holder's operations escaping otherwise than in conformity with these consents:

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

(b) Immediately notify the Regional Council by telephone of an escape of contaminant;

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

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

41 The 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 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 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 the consent;

(d) To deal with any inadequacies or inconsistencies the Regional Council considers there to be in the conditions of these consents, following the establishment of the activity the subject of these consents;

(e) If Condition 15 is exercised; and

(f) 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).

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

EXPIRY DATE: (01, 03–08) 30 SEPTEMBER 2042

ISSUED at Whangarei this Thirtieth day of August 2007

D L Roke
Consents Manager

SCHEDULE 1
Influent Flow Monitoring

(1) A record of the daily influent wastewater volume received at the wastewater treatment plant, between 9.00 a.m. to 9.00 a.m., shall be kept.

(2) To monitor the accuracy of the influent meter, the meter shall be calibrated at routine intervals in accordance with manufacturer's instructions. If no interval is prescribed by the manufacturer then the meter shall be calibrated at no more than two yearly intervals. Copies of the calibration certificates shall be retained by the Consent Holder and made available to Regional Council staff within two weeks of written request.

(3) The Consent Holder shall advise the Regional Council if the calibration exceeds the accuracy specified in Resource Consent 20051496901, within two weeks of becoming aware of the calibration results.

(4) The Consent Holder shall report results in accordance with Schedule 4 of this consent.

SCHEDULE 2
Treated Effluent Quality

The Consent Holder shall undertake the monitoring of the treated effluent in accordance with the following requirements;

(1) The Consent Holder shall agree an Effluent Sampling Location with the Regional Council.

(2) As a minimum the sample location shall:

(a) Be downstream of the disinfection process, but prior to the treated wastewater entering the treated effluent storage tank; and

(b) Have safe access at all times; and

(c) As far as practicable be representative of the treated effluent stream.

(3) Samples shall be collected and handled generally in accordance with New Zealand Wastewater Monitoring Guidelines, NZ Water Environment Research Foundation (October 2002).

(4) Samples shall be analysed by an IANZ accredited laboratory [a].

(5) Sampling Requirements:

(a) On each day, between the hours of 9.00 a.m. and 12.00 p.m. (midday), a grab sample of treated effluent shall be collected at the Effluent Sampling Location and analysed for parameters listed in **Group A** of Table 2.1.

(b) On every eighth day the Consent Holder shall collect a flow weighted 24 hour composite sample of treated effluent from the Effluent Sampling Location and analyse for parameters listed in **Group B** of Table 2.1.

(c) On three occasions, with a minimum of three months between each occasion, during the first year that the wastewater treatment plant is operating, the Consent Holder shall collect a flow weighted 24 hour composite sample of treated effluent from the Effluent Sampling Location and analyse for parameters listed in **Group C** of Table 2.1

TABLE 2.1: Treated Effluent Sampling

Parameter	Units
Group A Parameters	
E. coli	MPN
Group B Parameters	
Total Dissolved Solids	mg / L
Total Nitrogen	mg / L
Phosphorous	mg / L
Total Suspended Solids	mg / L
Carbonaceous Biochemical Oxygen Demand	mg / L
Transmissivity at 253.7nm [a]	%
Group C Parameters	
Alkalinity (as $CaCO_3$)	mg/L
pH [a]	pH
Total Organic Carbon	mg/L
Aluminium	g/L
Cadmium	g/L
Chromium	g/L
Copper	g/L
Lead	g/L
Mercury	g/L
Nickel	g/L
Zinc	g/L
Helminth (egg)	Number per L
Protozoa	Number per 50 L
Viruses	Number per 50 L

Note a: pH and transmissivity shall be recorded using an appropriate meter, and in accordance with standard procedures.

(6) The Consent Holder shall report results in accordance with Schedule 4 of this consent.

SCHEDULE 3
Irrigation Water Sampling

Water Volume

(1) A record of the daily volume of water irrigated between 9.00 a.m. to 9.00 a.m., shall be kept.

(2) To monitor the accuracy of the irrigated water meter the meter shall be calibrated at routine intervals in accordance with manufacturers instructions. If no interval is prescribed by the manufacturer then the meter shall be calibrated at no more than two yearly intervals. Copies of the calibration certificates shall be retained by the Consent Holder and made available to Regional Council staff within two weeks of written request.

(3) The Consent Holder shall advise the Regional Council if the calibration exceeds the accuracy specified in Resource Consent 20051496901, with two weeks of becoming aware of the calibration results.

(4) The Consent Holder shall record on a daily basis the area of land, in hectares, which has been irrigated.

Water Quality

(5) The Consent Holder shall agree an Irrigation Water Sampling Location with the Regional Council.

(6) As a minimum the sample location shall:

(a) Be prior to the irrigation pump(s);

(b) Have safe access at all times; and

(c) As far as practicable be representative of the water being irrigated.

(7) Samples shall be collected and handled generally in accordance with New Zealand Wastewater Monitoring Guidelines, NZ Water Environment Research Foundation (October 2002).

(8) Samples shall be analysed by an IANZ accredited laboratory.

(9) A grab sample(s) of the treated effluent shall be collected every 14 days that the irrigation system is operating from the Irrigation Water Sampling Location. The sample shall be analysed for the parameters listed in Table 3.1.

TABLE 3.1 Irrigated Water Sampling Requirements

Parameter	Units
E. coli	MPN
Chlorine	ppm

(10) The Consent Holder shall report results in accordance with Schedule 4 of this consent.

SCHEDULE 4
Reporting

On three occasions each year, prior to 1 August (for the period 1 April to 30 June); 1 November (for the period 1 July to 30 September); and 1 February (for the period 1 October to 31 December), the Consent Holder shall forward a report to the Regional Council detailing the following:

(1) Daily influent wastewater volumes, in cubic metres;

(2) Sampling results in accordance with Schedule 2;

(3) Daily irrigated water volumes, in cubic metres;

(4) Daily irrigated area, in hectares;

(5) The calculated daily areal loading rate of the irrigation area, in cubic metres per hectare; and

(6) Sampling results in accordance with Schedule 3.

In addition, the Consent Holder shall forward an annual report to the Regional Council by 1 May each year, for the preceding year 1 April and 31 March, detailing the following:

(1) Daily influent wastewater volumes, in cubic metres;

(2) Sampling results in accordance with Schedule 2;

(3) Daily irrigated water volumes, in cubic metres;

(4) Daily irrigated area, in hectares;

(5) Monthly rainfall data for the irrigation area;

(6) The calculated daily areal loading rate of the irrigation area, in cubic metres per hectare;

(7) The calculated annual areal loading rate of the irrigation area, in ML per hectare;

(8) Sampling results in accordance with Schedule 3; and

(9) A summary of any other monitoring undertaken as required by Resource Consent 200514969 (01-08), or environmental monitoring undertaken by the Consent Holder.

All the above records shall be provided in electronic format (Microsoft Excel spreadsheet) or as agreed with the Regional Council.

EARTH TECH ENGINEERING PTY LIMITED, 71 QUEENS ROAD, MELBOURNE, VICTORIA 3004, AUSTRALIA

To undertake the following activities associated with the construction of a sewage collection, sewage treatment, and treated wastewater disposal system servicing Mangawhai Heads and Mangawhai Point within the Kaipara district.

(09) **Land Use Consent:** To carry out earthworks, including within riparian management zones, associated with approximately 54 km of sewer pipeline trenching, pump stations and associated activities.

(10) **Land Use Consent:** To carry out approximately 70,000 m^3 of earthworks associated with the construction of a dam at Lincoln Downs.

(11) **Discharge Permit:** To discharge stormwater to land and water during land disturbance activities.

(12) **Water Permit:** To divert stormwater associated with land disturbance activities.

(13) **Discharge Permit:** Discharge contaminants to air (primarily dust) from earthworks activities

Subject to the following conditions:

1 The Consent Holder shall, at least one week prior to the commencement of earthworks in each operational area, lodge with the Regional Council an Erosion and Sediment Control Plan (ESCP), which sets out the practices and procedures to be adopted in order that compliance with the conditions of these consents are achieved. The ESCP shall include, but not be limited to, the following:

(a) The expected duration (timing and staging) of the proposed earthworks;

(b) Erosion and sediment control measures;

(c) Catchment boundaries for the sediment control structures;

(d) The commencement and completion dates for the implementation of the proposed erosion and sediment controls;

(e) Details of the locations of any surplus fill sites;

(f) Diagrams and/or plans, of a scale suitable for on-site reference, showing the locations of the erosion and silt control structures/measures for each operational area;

(g) Measures to prevent spillage of fuel, oil and similar contaminants;

(h) Surface revegetation measures for all disturbed sites, and other surface covering to minimise sediment runoff following construction;

(i) The name and contact telephone number of the person responsible for monitoring and maintaining all silt detention structures; and

(j) Contingency provisions for the potential effects of large/high intensity rain storm events.

The Consent Holder shall undertake the activities authorised by these consents in accordance with the ESCP.

Advice Note: *As works are intended to be carried out simultaneously by several pipe laying crews, each site is regarded as an operational area within which the above provisions apply.*

2 Erosion and sediment control measures shall be the first measures constructed or installed on site and shall be retained until the site is stable against erosion and sediment discharges.

3 Earthworks related to the activities authorised by these consents, and associated sediment control measures, shall be constructed and carried out in accordance with the principles contained within the document entitled *"Erosion and Sediment Control – Guidelines for Land Disturbing Activities"*, Auckland Regional Council Technical Publication No. 90, dated March 1999.

4 The Consent Holder shall ensure that all land disturbance and earthworks activities are kept to the minimum necessary for pipeline installation.

5 To minimise the potential for sediment discharges from the area of earthworks, trenching shall be undertaken in stages. The total length of pipeline trench open at any time shall not exceed 100 metres within any one operational area, with trenches substantially backfilled at the completion of each working day. Where it is not practical to entirely backfill trenches within a period of one working day, up to 20 metres length of trench may be left open for up to five days, provided all necessary erosion and sediment controls are in place at the exposed pipeline site, and there are no cumulative adverse effects created by pipeline construction from any other operational area.

6 The Consent Holder shall minimise contamination of surface water by ensuring that slash, soil, debris and detritus are not placed in a position where they may enter any water body.

7 Notwithstanding any other conditions of these consents, the discharge of stormwater from any land disturbance activity shall not cause the quality of the receiving waters, as measured downstream of any earthworks activity, compared to a site immediately upstream of all earthworks activities, during the same sampling event, to fall below the following standards:

(a) The level of suspended solids to exceed 100 grams per cubic metre;

(b) The visual clarity of the water to be reduced by more than 40%; and

(c) There shall be no conspicuous oil or grease films, scums or foams, floatable or suspended materials, nor emissions of objectionable odour.

8 To minimise sediment loss, all areas of bare land, other than roads and tracks, created by the exercise of these consents shall be hydroseeded, or topsoiled and established with suitable vegetation, to achieve not less than an 80% ground cover by 31 May immediately following each earthworks season. All roads and tracks shall be covered with aggregate or other roading materials, and temporary mulching or other suitable ground cover shall be applied to achieve total ground cover of any areas left bare or unprotected for more than three months following earthworks in that area.

9 Refuelling and servicing of machinery shall not be carried out in such a way that soil or water at the site is contaminated. Where an accidental spillage to land occurs all contaminated soil shall be collected and removed to a suitable disposal site. Where an accidental spillage to water occurs, the Consent Holder shall:

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

(b) Immediately notify the Regional Council by telephone of an escape of contaminant; and

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

(d) Report to the Regional Council in writing within one week on the cause of the escape of the contaminant and the steps taken or being taken to effectively control or prevent such escape

10 The Consent Holder shall, at least two weeks prior to any land disturbance activities being undertaken associated with dam construction, co-ordinate a pre-construction meeting between itself, Regional Council Monitoring staff, and representatives of construction works contractor's.

11 In the event of unknown archaeological sites or koiwi being uncovered, activities in the vicinity of the discovery shall cease. The Consent Holder shall consult with Te Uri O Hau and the New Zealand Historic Places Trust, and shall not recommence works in the area of the discovery until the relevant Historic Places Trust approvals have been obtained.

12 The 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 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 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 the consent;

(d) To deal with any inadequacies or inconsistencies the Regional Council considers there to be in the conditions of these consents, following the establishment of the activity 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).

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

EXPIRY DATE: (09–13) 30 SEPTEMBER 2012

ISSUED at Whangarei this Thirtieth day of August 2007

D L Roke
Consents Manager