DH Lepper Trust Piggery Monitoring Programme Annual Report 2014-2015

Technical Report 2015-64

ISSN: 1178-1467 (Online)
Document: 1565024 (Word)
Document: 1599642 (Pdf)

Taranaki Regional Council
Private Bag 713
STRATFORD

February 2016

Executive summary

DH Lepper Trust operates a piggery located on Mountain and Manutahi Roads at Lepperton, in the Waiongana catchment. This report for the period July 2014–June 2015 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess the Company's environmental performance during the period under review, and the results and environmental effects of the Company's activities.

The Company holds a total of 3 resource consents, which include a total of 24 conditions setting out the requirements that the Company must satisfy. The Company holds one consent to allow it to take and use water, one consents to discharge treated effluent into the Waiongana Stream, and one consent to discharge emissions into the air from the piggery operation.

During the monitoring period, the Company demonstrated an overall Good level of environmental performance and compliance with the resource consents.

The Council's monitoring programme for the year under review included 4 inspections and three physicochemical water quality sampling surveys.

The monitoring has shown that the consent holder has ensured to discharge treated effluent into the Waiongana Stream only when the flow was greater than 5 cubic metres per second. On one of the three monitoring occasions the required effluent to receiving water dilution ratio was not met, although no adverse effect in the receiving water was observed. Previous investigative work has shown that incomplete mixing occurs at the boundary of the allowable mixing zone during high River flows.

The consent holder has also spent in a lot of time and effort into progressing consent **0715** application, where over a five year period approximately 47% of the treated effluent which is currently being discharged into the Waiongana Stream will be spray irrigated to land.

For reference, in the 2014-2015 year, 75% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level o f environmental performance and compliance with their consents, while another 22% demonstrated a good level of environmental performance and compliance with their consents.

This report includes recommendations for the monitoring programmes for the2015-2016 year.

Table of contents

List of tables

List of figures

1. Introduction

1.1 Compliance monitoring programme reports and the Resource Management Act 1991

1.1.1 Introduction

This report is for the period July 2014-June 2015 by the Taranaki Regional Council (the Council) on the monitoring programme associated with resource consents held by DH Lepper Trust (the Company). The Company operates a piggery situated on Mountain Road 9SH3a) at Lepperton, in the Waiongana catchment.

The report includes the results and findings of the monitoring programme implemented by the Council in respect of the consents held by the Company that relate to a discharge of water within the Waiongana catchment, and the air discharge permit held by DH Lepper Trust to cover emissions to air from the site.

One of the intents of the *Resource Management Act 1991* (RMA) is that environmental management should be integrated across all media, so that a consent holder's use of water, air, and land should be considered from a single comprehensive environmental perspective. Accordingly, the Council generally implements integrated environmental monitoring programmes and reports the results of the programmes jointly. This report discusses the environmental effects of the Company's use of water, land and air, and is the 12th combined annual report by the Council for the Company.

1.1.2 Structure of this report

Section 1 of this report is a background section. It sets out general information about compliance monitoring under the RMA and the Council's obligations and general approach to monitoring sites though annual programmes, the resource consents held by the Company in the Waiongana catchment, the nature of the monitoring programme in place for the period under review, and a description of the activities and operations conducted in the Company's site/catchment.

Section 2 presents the results of monitoring during the period under review, including scientific and technical data.

Section 3 discusses the results, their interpretations, and their significance for the environment.

Section 4 presents recommendations to be implemented in the 2015-2016 monitoring year.

A glossary of common abbreviations and scientific terms, and a bibliography, are presented at the end of the report.

1.1.3 The Resource Management Act 1991 and monitoring

The RMA primarily addresses environmental 'effects' which are defined as positive or adverse, temporary or permanent, past, present or future, or cumulative. Effects may arise in relation to:

(a) the neighbourhood or the wider community around an activity, and may include cultural and social-economic effects;
(b) physical effects on the locality, including landscape, amenity and visual effects;
(c) ecosystems, including effects on plants, animals, or habitats, whether aquatic or terrestrial;
(d) natural and physical resources having special significance (for example recreational, cultural, or aesthetic);
(e) risks to the neighbourhood or environment.

In drafting and reviewing conditions on discharge permits, and in implementing monitoring programmes, the Council is recognising the comprehensive meaning of 'effects' inasmuch as is appropriate for each activity. Monitoring programmes are not only based on existing permit conditions, but also on the obligations of the RMA to assess the effects of the exercise of consents. In accordance with section 35 of the RMA, the Council undertakes compliance monitoring for consents and rules in regional plans, and maintains an overview of the performance of resource users and consent holders. Compliance monitoring, including both activity and impact monitoring, enables the Council to continually re-evaluate its approach and that of consent holders to resource management and, ultimately, through the refinement of methods and considered responsible resource utilisation, to move closer to achieving sustainable development of the region's resources.

1.1.4 Evaluation of environmental and administrative performance

Besides discussing the various details of the performance and extent of compliance by the consent holder/s during the period under review, this report also assigns a rating as to each Company's environmental and administrative performance.

Environmental performance is concerned with actual or likely effects on the receiving environment from the activities during the monitoring year. **Administrative performance** is concerned with the Company's approach to demonstrating consent compliance in site operations and management including the timely provision of information to Council (such as contingency plans and water take data) in accordance with consent conditions.

Events that were beyond the control of the consent holder and unforeseeable (that is a defence under the provisions of the *RMA* can be established) may be excluded with regard to the performance rating applied. For example loss of data due to a flood destroying deployed field equipment.

The categories used by the Council for this monitoring period, and their interpretation, are as follows:

Environmental Performance

- **High:** No or inconsequential (short-term duration, less than minor in severity) breaches of consent or regional plan parameters resulting from the activity; no adverse effects of significance noted or likely in the receiving environment .The Council did not record any verified unauthorised incidents involving significant environmental impacts and was not obliged to issue any abatement notices or infringement notices in relation to such impacts.

- **Good:** Likely or actual adverse effects of activities on the receiving environment were negligible or minor at most. There were some such issues noted during monitoring, from self reports, or in response to unauthorised incident reports, but these items were not critical, and follow-up inspections showed they have been dealt with. These minor issues were resolved positively, co-operatively, and quickly. The Council was not obliged to issue any abatement notices or infringement notices in relation to the minor non-compliant effects; however abatement notices may have been issued to mitigate an identified potential for an environmental effect to occur.

  For example:

  - High suspended solid values recorded in discharge samples, however the discharge was to land or to receiving waters that were in high flow at the time;
  - Strong odour beyond boundary but no residential properties or other recipient nearby.

- **Improvement required:** Likely or actual adverse effects of activities on the receiving environment were more than minor, but not substantial. There were some issues noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent minor non-compliant activity could elevate a minor issue to this level. Abatement notices and infringement notices may have been issued in respect of effects.

- **Poor:** Likely or actual adverse effects of activities on the receiving environment were significant. There were some items noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent moderate non-compliant activity could elevate an 'improvement required' issue to this level. Typically there were grounds for either a prosecution or an infringement notice in respect of effects.

Administrative performance

- **High:** The administrative requirements of the resource consents were met, or any failure to do this had trivial consequences and were addressed promptly and co-operatively.

- **Good:** Perhaps some administrative requirements of the resource consents were not met at a particular time, however this was addressed without repeated interventions from the Council staff. Alternatively adequate reason was provided for matters such as the no or late provision of information, interpretation of 'best practical option' for avoiding potential effects, etc.

- **Improvement required:** Repeated interventions to meet the administrative requirements of the resource consents were made by Council staff. These matters took some time to resolve, or remained unresolved at the end of the period under review. The Council may have issued an abatement notice to attain compliance.

- **Poor**: Material failings to meet the administrative requirements of the resource consents. Significant intervention by the Council was required. Typically there were grounds for an infringement notice.

For reference, in the 2014-2015 year, 75% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level o f environmental performance and compliance with their consents, while another 22% demonstrated a good level of environmental performance and compliance with their consents.

1.2 Process description

The consent holder operates a 'farrow to finish' piggery breeding and fattening unit. The approximate weights of the pigs are shown in Table 1 below.

The pigs are housed in purpose-built sheds (Figure 1) with controlled heating and ventilation systems that regulate the internal environment to optimise conditions for stock production.

A feed mill located on site mixes the majority of the piggery's food requirements with grains and feed supplements. Recycled local waste food supplies, including waste bread from local suppliers, are mixed to produce a protein meal for the stock.

Table 1 Piggery composition as at 30 June 2015

Type of pigs	No of pigs	Average weight kg	Total weight kg	50 kg Equivalent pigs
Sows	434	162	70,280	1,406
Light porkers (3 months)	1,026	65	66,690	1,334
Store pigs (2½ months)	325	44	14,300	286
Weaners (5 – 8 weeks)	1,351	18	25,150	503
Total	3,136			3,529

Stock holding pens are washed down on a daily basis and the waste conveyed through pipes to a central collection tank. From this point, all waste material is channelled through a solids separator (contra shear screen) which provides primary treatment by separating out the solid component from the piggery slurry.

Solid waste is stored in three large bins prior to being mixed at a ratio 1:1 with sawdust. This mixture is then transferred to a large covered compost bunker where over a 40 day period it is aerated and heated to 70°C until well composted. The composting process elevates the temperature which kills harmful pathogens as well as helping to stabilise the product. The forced aeration provides oxygen for bacterial action. The final product is bagged and sold commercially as a soil conditioner.

After solids have been removed, the piggery wastewater drains to a liquids sump and pumped to the inlet of the covered anaerobic pond.

Biogas is produced from the covered anaerobic pond digestive process and captured and stored beneath the plastic cover on the anaerobic pond. The biogas (approximately

200 m^3 of gas daily) is compressed and forced through a hydrogen sulphide scrubber, powering a six-cylinder biogas engine that drives a 40 kilowatt generator, which generates half of the piggery's electricity needs.

Partially digested effluent from the covered anaerobic pond is gravity-fed via a pipeline directly to the off-site treatment ponds, approximately 1.5 km away. The ponds are located on the true left bank of the Waiongana Stream near Lepperton.

Bacteria present in the two off-site treatment ponds break-down the contents of the effluent further. Periodically during high river flows, the consent holder discharges treated water from the final aerobic pond into the neighbouring Waiongana Stream in compliance with the conditions of Consent **0715.**

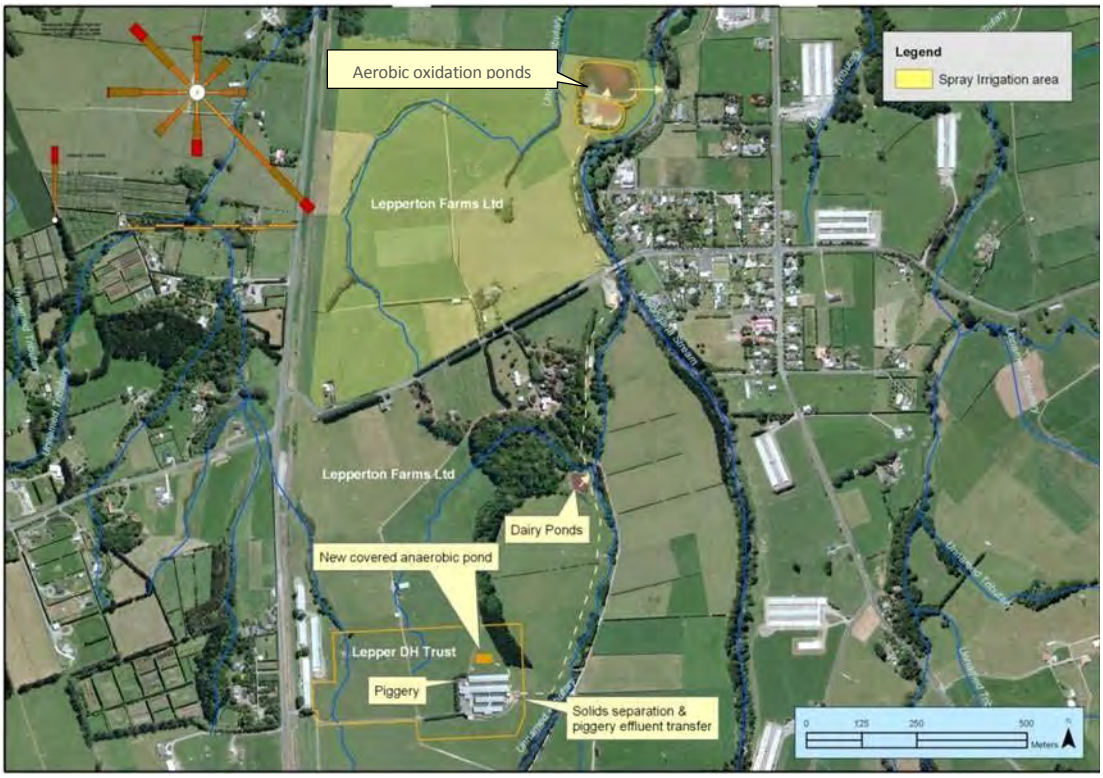

Figure 1 Location of DH Lepper Trust piggery and Lepperton

1.3 Resource consents

1.3.1 Water abstraction permit

Section 14 of the RMA stipulates that no person may take, use, dam or divert any water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or it falls within some particular categories set out in Section 14.

DH Lepper Trust holds water permit **0188-3** to cover the take of water from an unnamed tributary of the Waiongana Stream for piggery operation purposes. This permit was re-issued by the Council on 09 January 2002 under Section 87(d) of the RMA. It is due to expire on 1 June 2020.

Three special conditions are attached to this consent.

Special condition 1 requires consent holder to adopt best practicable option to prevent or minimise effects.

Special condition 2 states the abstraction should not exceed 50% of the natural stream flow and special condition 3 is a review provision.

The permit is attached to this report in Appendix I.

1.3.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

The Company holds water discharge permit **0715-3** to discharge treated piggery effluent from a treatment ponds system into the Waiongana Stream during fresh (high flow) conditions. This permit was issued by the Council on December 2002 under Section 87(e) of the RMA. It expired on 1 December 2013 with no further reviews of this consent. As a result, the renewal application has been modified to include a dual system for the disposal of treated piggery effluent on site. The proposal will now include the discharge of approximately 40 % of piggery effluent to land and the remaining 60 % will continue to discharge to water.

The discharge of treated wastewater of this nature may affect the water quality of a stream, particularly if there is insufficient dilution. Some effects may be obvious (e.g. appearance, turbidity) while biological effects may be more subtle.

Eleven special conditions are included in Resource Consent 0715-3:

Special condition 1 relates to the operation of the piggery and associated activities and discharges.

Special condition 2 defines the point of discharge.

Special condition 3 requires the maintenance of a minimum dilution rate of 1 part effluent to 250 parts receiving water at all times.

Special condition 4 defines a minimum flow in the Waiongana Stream above which the discharge may occur.

Special conditions 5 and 6 define the mixing zone and prohibit a number of effects.

Special condition 7 requires the consent holder to operate and maintain the treatment and discharge system to ensure compliance.

Special condition 8 requires the consent holder to monitor and maintain records of the discharge.

Special conditions 9 and 10 require effluent from the aerobic pond to be discharged onto and into land via irrigation at least once annually during the summer/autumn period and notification to be provided prior to any irrigation.

Special condition 11 provides for review of the consent.

The permit is attached to this report in Appendix I.

1.3.3 Air discharge pemit

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

The Company holds air discharge permit **5206-2** to discharge emissions into the air from a pig farming operation and associated practices, including solids composting, effluent treatment and other waste management activities. This permit was issued by the Taranaki Regional Council on 13 November 2008 as a resource consent under Section 87(e) of the Resource Management Act. It is due to expire on June 2026.

Consent **5206-2** is subject to change. A variation to the existing consent is required because this consent did not anticipate the additional effects associated with discharging approximately 40% of treated effluent to land, as at July 2014.

Ten special conditions are attached to the consent.

Special condition 1 requires the number of pigs [equivalent = 50 kg per pig] on the property at any one time shall not exceed 3500 pig equivalents.

Special condition 2 requires the consent holder to adopt the best practicable option to prevent or minimise any actual or likely adverse effects.

Special condition 3 requires the new anaerobic pond to be covered and biogas utilised as an energy source.

Special condition 4 requires consultation should any alterations occur to the pig farming and effluent disposal processes, operations, equipment or layout which might change the nature or quantity of contaminants emitted from the site.

Special condition 5 requires the consent holder to minimise the emissions and impacts of air contaminants discharged into air from the site.

Special condition 6 restricts odours at or beyond the boundary of the site.

Special condition 7 allows intermittent offensive and objectionable odour, beyond the property boundary for a limited period while anaerobic to aerobic pond conditions settle.

Special condition 8 outlines the recording and reporting of odour emissions which may be deemed offensive or objectionable.

Special condition 9 requires an Odour Management Plan outlining how odorous emissions beyond the boundary are minimised.

Special condition 10 provides for review of any or all of the conditions of the consent.

The permit is attached to this report in Appendix I.

1.4 Monitoring programme

1.4.1 Introduction

Section 35 of the RMA sets out obligations upon the Council to gather information, monitor, and conduct research on the exercise of resource consents, and the effects arising, within the Taranaki region and report upon these.

The Council may therefore make and record measurements of physical and chemical parameters, take samples for analysis, carry out surveys and inspections, conduct investigations, and seek information from consent holders.

The monitoring programme for the DH Lepper site consisted of three primary components.

1.4.2 Programme liaison and management

There is generally a significant investment of time and resources by the Council in:

- ongoing liaison with resource consent holders over consent conditions and their interpretation and application;
- in discussion over monitoring requirements;
- preparation for any reviews;
- renewals;
- new consents;
- advice on the Council's environmental management strategies and content of regional plans and;
- consultation on associated matters.

1.4.3 Site inspections

The piggery was visited three times during the monitoring period. With regard to consents for the abstraction of or discharge to water, the main points of interest were plant processes with potential or actual discharges to receiving watercourses, including contaminated stormwater and process wastewaters. Air inspections focused on plant processes with associated actual and potential emission sources and characteristics, including potential odour, dust, noxious or offensive emissions. Sources of data being collected by the consent holder were identified and accessed, so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council. The neighbourhood was surveyed for environmental effects as part of the monitoring inspection.

1.4.4 Chemical sampling

The Council undertook sampling of both the discharges from the site and the water quality upstream and downstream of the discharge point and consented mixing zone.

The piggery discharge was sampled on three occasions, and the samples analysed for conductivity, chloride, turbidity, suspended solids, BOD_5 (total carbonaceous) and

temperature. The Waiongana Stream, upstream and downstream of the discharge point was sampled on three occasions, and the samples analysed for conductivity, chloride, turbidity, suspended solids. BOD_5 (filtered carbonaceous), ammonia-N, DRP and temperature.

The locations of the water sampling locations are illustrated in Figure 2. Water quality sampling is generally performed by starting at the upstream monitoring site (WGA000361), followed by the piggery wastewater discharge (PGP002002), then sampling at the downstream monitoring site (WGA000363).

The monitoring programme allows for the effluent discharge and receiving water to be sampled on three separate occasions, preferably during the summer, autumn and spring periods.

2. Results

2.1 Water

2.1.1 Inspections

22 August 2014
This initial inspection for the 2014-2015 monitoring period was carried out during fine weather conditions. A gusty wind was blowing from the southern quarter. Slightly noticeable to nil odour was found to be emanating towards the downwind monitoring sites of the piggery. All piggery effluent was flowing towards the solids separator and wastewater was being pumped to the first covered pond. The effluent from there was pumped to the three concrete traps below the grunt area and then on to the bottom ponds. There was minimal flow discharging from the anaerobic pond via the discharge pipe due to some form of blockage under the cover. The grunt and solids separation area runoff all goes to the bottom ponds. Solids were built up in the levelling tank and the bottom collection areas. The piggery appeared to be well managed and monitored regularly. The bottom two oxidation ponds appeared to be working well. No discharge between the second and final pond was occurring at the time of inspection. No odour was detected around the pond system and everything appeared to be well managed.

3 November 2014
Piggery discharge and receiving water samples were collected during overcast weather conditions with a light northwesterly wind blowing. Heavy rain had been recorded throughout the catchment overnight. Waiongana Stream was in a receding fresh, turbid brown in colour. The Waiongana Stream flow was recorded at 9.4 m^3/sec at the time of sampling. The piggery discharge flow rate from the final pond was estimated at 15 L/s. No visual downstream environmental effects were observed from the treated piggery. Minimal odour was found to be emanating downwind of the pond system.

27 November 2014
A light north westerly breeze was blowing at the time of inspection. Normal piggery odour was detected at various downwind sites (only minor). The effluent pond system appeared to be working very well with a clear discharge flowing from the second to third pond. The final pond was not discharging into the Waiongana Stream. Only slightly noticeable odours were emanating downwind of the pond system. The covered anaerobic pond had produced a large volume of methane gas which was powering the generator. All effluent was collected and directed through the pond system. There was not a large volume of solids in the solids separator and odour from this area was minimal. Overall the site appeared to be well managed and maintained with little odour being generated.

11 March 2015
A slight north easterly breeze was blowing at the time of inspection. All piggery effluent was collected and directed to the solids separator and then on to the covered anaerobic pond. The discharge from the anaerobic pond was flowing via the levelling tank and then discharging to the bottom lower ponds. The bottom two ponds appeared to be working well with storage available. All liquid wastewater from the grunt and solids separator was discharging to the three concrete traps below the system and then on to the ponds. There was little to no odours detected at any downwind sites of the piggery. The piggery appeared to be well managed and maintained.

28 April 2015
Piggery discharge and receiving water samples were collected during overcast weather conditions with a light westerly wind blowing. Waiongana Stream was in a receding fresh, slightly turbid brown in colour. The final aerobic pond staff gauge reading was 300 mm and the pond discharge was dark green brown in colour. Slightly noticeable microbial actively was occurring on the first aerobic pond but not noticeable on the final aerobic pond. The Waiongana Stream flow was recorded at 6.9 m^3/sec at the time of sampling. The piggery discharge flow rate from the final pond was estimated at 15 L/s. No visual downstream environmental effects were observed from the treated piggery. Minimal odour was found to be emanating downwind of the pond system.

19 June 2015
Piggery discharge and receiving water samples were collected during wet weather conditions with a northeasterly wind blowing. Heavy rain had been recorded throughout the catchment overnight. Waiongana Stream was in an elevated fresh, turbid brown in colour. The piggery discharge flow rate from the final pond was estimated at ≤15 L/s as the pond level staff gauge was reading below 100 mm. No visual downstream environmental effects were observed from the treated piggery. Minimal odour was found to be emanating downwind of the pond system. The discharge continued for a further two days until the discharge probably stopped running.

2.1.2 Results of discharge and receiving waters phyicochemical monitoring

During the monitoring period, three inspections of the piggery site were conducted by the Council. Samples were collected on three separate occasions from three sites listed in Table 2 and illustrated in Figure 2, for physicochemical analysis in the Councils IANZ registered laboratory.

Table 2 Location of sampling sites in the Waiongana Stream

Site	Location	Site Code	GPS reference
Waiongana Stream	Approx 100 m u/s of discharge	WGA000361	N1704439 E5676128
Piggery pond treated effluent	Final pond treated effluent	PGP002002	N1704469 E5676209
Waiongana Stream	75 m d/s of discharge – true left bank	WGA000363	N1704466 E5676274

Figure 2 Location of sampling sites

Survey of 3 November 2014

This initial receiving water monitoring survey was performed on 3 November 2014 after the consent holder had informed the Council that the piggery was discharging treated effluent to the Waiongana Stream. Samples were collected near the beginning of the discharge during overcast weather conditions after a period of overnight rain recorded throughout the catchment. At the time of sampling the stream was running at a swift, moderately high (recession) flow with a stream flow of approximately 9 m^3/s (Figure 3) at the time of sampling. The river was turbid brown in colour. The wastewater discharge from the final anaerobic pond had no visual downstream environmental impact on the Waiongana Stream at the time of the survey. The consent holder continued to discharge for a further two hours before ceasing to discharge when the river flow had fallen to 6.4 m^3/s.

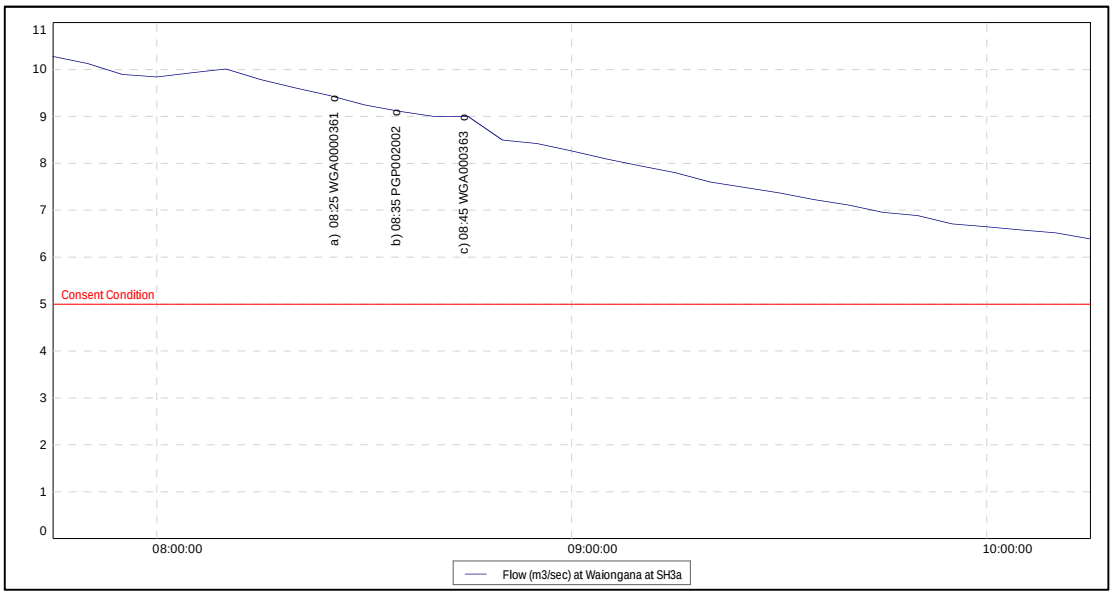

Figure 3 Flow data recorded for the Waiongana Stream for the duration of the piggery wastewater discharge commencing 3 Nov 2014 at 0745 hrs and finishing 3 Nov 2014 at 1015 hrs

Table 3 Results of the receiving water compliance survey of 3 November 2014

Site		WGA000361	PGP002002	WGA000363
Parameter	Unit	upstream	discharge	50 metres downstream
Time	NZST	0825	0835	0845
Temperature	°C	14.8	17.9	14.7
Conductivity @ 20°c	mSm	11.5	242	12.6
Chloride	g/m³	12.6	286	14.0
pH		7.7	8.0	7.6
BOD_5 (total carbonaceous)	g/m³	-	170	-
BOD_5 (carbonaceous filtered)	g/m³	<0.5	-	0.5
Ammoniacal nitrogen	g/m³N	0.051	155	0.705
Un-ionised ammonia	g/m³N	0.0008	6.1434	0.0090
Dissolved reactive phosphorus	g/m³P	0.034	-	0.174
Suspended solids	g/m³	54	350	40
Turbidity	NTU	26	120	24
Appearance		Turbid, brown	Turbid, dark green	Turbid, brown

These results indicate that the dilution rate was approximately 1 part effluent to 200 parts receiving water and therefore not in compliance with Special Condition 3 at the time of the survey and may not have complied throughout the duration of the discharge. The increase of 0.65 g/m³N in ammoniacal nitrogen did not result in non-compliance with the un-ionised ammonia limit imposed by special Condition 5 at the time of survey. There was minimal measurable increase in filtered carbonaceous BOD_5 which remained well within the limit imposed by Special Condition 6, and otherwise the discharge had minimal impact in terms of pH, conductivity, and suspended solids at the mixing zone boundary. Compliance with Special Condition 6(b) was indicated by the field observation that there was no change in the colour or visual clarity within the receiving waters at the boundary of the mixing zone.

The piggery pond wastewater quality sampled was slightly higher than historical maximum levels for BOD_5, suspended solids and within the range for ammonia-N that had been recorded since the dairy wastes were moved from the treatment system (Table 7 TRC 2014) although well within the ranges found prior to this date.

Survey of 28 April 2015

Piggery discharge and receiving water samples were collected during overcast weather conditions with a light westerly wind blowing. The Waiongana Stream was in a slow receding fresh and slightly turbid brown in colour. The Waiongana Stream flow was recorded at 6.9 m^3/sec (Figure 4) at the time of sampling. The piggery discharge flow rate from the final pond was estimated at 15 L/s. The wastewater discharge from the final anaerobic pond had no visual downstream environmental impact on the Waiongana Stream at the time of the survey. The consent holder continued to discharge for a further four hours before ceasing the discharge when the river had fallen to 5.75 m^3/s.

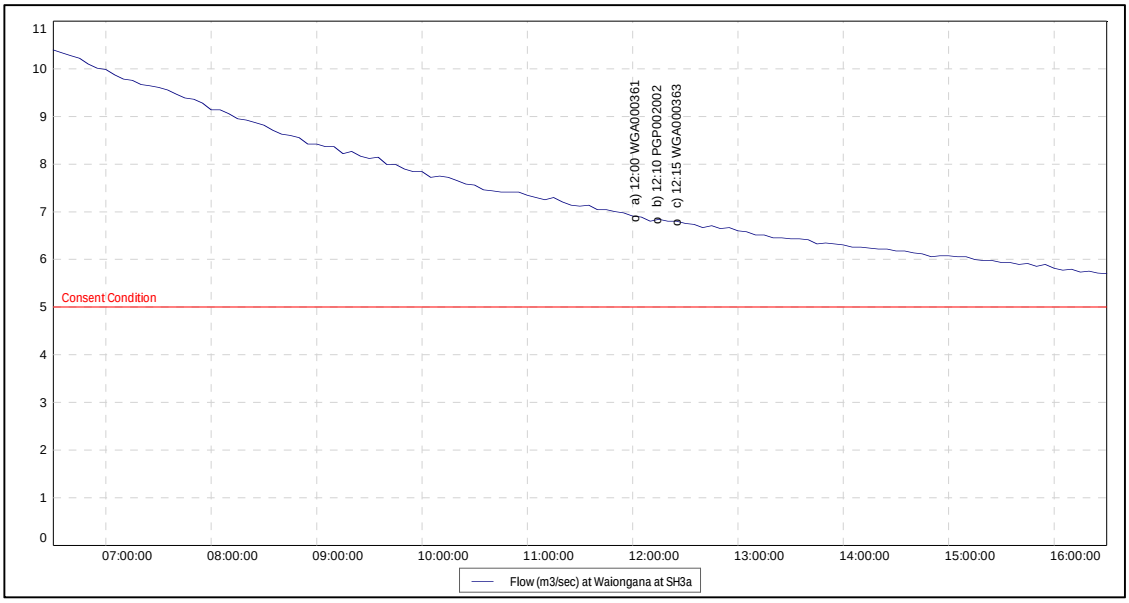

Figure 4 Flow data recorded for the Waiongana Stream for the duration of the piggery wastewater discharge commencing 28 April 2015 at 0630 hrs and finishing 28 April 2015 at 1630 hrs

Table 4 Results of the receiving water compliance survey of 28 April 2015

Site		WGA000361	PGP002002	WGA000363
Parameter	Unit	upstream	discharge	50 metres downstream
Time	NZST	1200	1210	1215
Temperature	°C	14.7	17.7	14.7
Conductivity @ 20°c	mSm	9.7	247	11.4
Chloride	g/m^3	11.7	337	14.0
pH		7.6	8.1	7.7
BOD_5 (total carbonaceous)	g/m^3	-	110	-
BOD_5 (carbonaceous filtered)	g/m^3	<0.5	-	0.5
Ammoniacal nitrogen	g/m^3N	0.157	192	1.14
Un-ionised ammonia	g/m^3N	0.0020	9.3654	0.0182
Dissolved reactive phosphorus	g/m^3P	0.043	-	0.318
Suspended solids	g/m^3	9	280	11
Turbidity	NTU	5.5	130	6.6

Site		WGA000361	PGP002002	WGA000363
Parameter	Unit	upstream	discharge	50 metres downstream
Appearance		Slightly turbid, brown	Turbid, dark green-brown	Slightly turbid, brown

Based on the results of chemical analysis (chloride) the dilution rate was approximately 1 part effluent to 150 parts receiving water and therefore not in compliance with Special Condition 3 at the boundary of the mixing zone (beside the river bank) at the time of the survey. It was therefore unlikely to have complied for the majority of the discharge's duration. However, an increase of 0.98g/m^3N in ammoniacal nitrogen did not result in non-compliance with the un-ionised ammonia N limit impose by Special Condition 5. There was minimal measurable increase in filtered carbonaceous BOD_5 which was well within the limit imposed by Special Condition 6. Generally, the discharge also had minimal impact on the receiving water in terms of pH, conductivity, turbidity, and suspended solids at the boundary of the mixing zone. The visual assessment in relation to Compliance with Special Condition 6(5) indicated no change in the visual clarity or colour of the receiving waters at the boundary of the mixing zone.

This assessment confirmed that incomplete mixing may occur under higher flow conditions or that discharge flow rate should be reduced accordingly.
The treated ponds wastewater quality at the time of sampling was within historical ranges and very similar to medians (for BOD_5, suspended solids, and ammonia N) recorded since the dairy wastes were removed from the treatment system (Table 7, TRC 2014).

Survey of 19 June 2015

The consent holder advised the Council that the piggery discharge had commenced at approximately 1100 hours on the 19 June 2015. Wastewater and receiving water samples were collected approximately one hour after the commencement of the discharge of treated wastewater into the Waiongana Stream when the river flow was in flood (Figure 5). Prior to collecting samples, heavy rain throughout the catchment had caused the Waiongana Stream to rise rapidly, peaking at 150 m^3/s. The consent holder continued to discharge for a further two days before ceasing the discharge when the river had fallen to 5.75m^3/s.

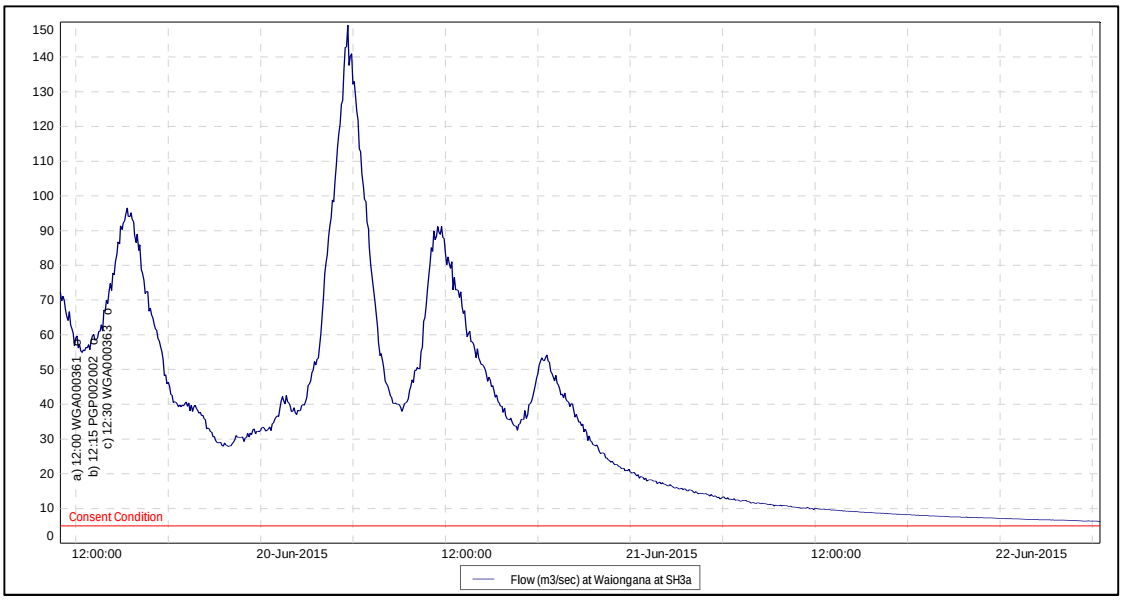

Figure 5 Flow data recorded for the Waiongana Stream for the duration of the piggery wastewater discharge commencing 19 June 2015 at 1100 hrs and finishing 22 June 2015 at 0630 hrs

Table 5 Results of the receiving water compliance survey of 19 June 2015

Site		WGA000361	PGP002002	WGA000363
Parameter	Unit	upstream	discharge	50 metres downstream
Time	NZST	1200	1215	1230
Temperature	°C	13.0	12.9	13.0
Conductivity @ 20°c	mSm	5.8	287	5.9
Chloride	g/m³	9.39	318	9.45
pH		7.1	7.9	7.2
BOD_5 (total)	g/m³	-	53	-
BOD_5 (carbonaceous filtered)	g/m³	2.2	-	2.1
Ammoniacal nitrogen	g/m³N	0.173	232	0.276
Un-ionised ammonia	g/m³N	0.0006	5.1113	0.0012
Dissolved reactive phosphorus	g/m³P	0.050	-	0.061
Suspended solids	g/m³	230	130	220
Turbidity	NTU	170	78	150
Appearance		Turbid, brown	Turbid, dark brown	Turbid, brown

These results indicated that the dilution rate was in excess of 1 part effluent to 5000 parts receiving water and therefore well in compliance with Special Condition 3 at the time of sampling and should have remained in compliance throughout the period of discharge assuming a steady discharge rate. An increase of 0.10 g/m³ N in ammoniacal nitrogen did not result in non-compliance with the un-ionised ammonia limit imposed by Special Condition 5. There was no increase in filtered carbonaceous BOD_5 which although just beyond the limit imposed by Special Condition 5 was already elevated upstream of the discharge under flood conditions. Generally the discharge had minimal impact in term of pH, conductively, turbidity, and suspended solids at the mixing zone boundary. A visual assessment in relation to Special Condition 6(b) compliance indicated there was no change in the colour or visual clarity within the receiving waters at the boundary of the mixing zone.

The piggery pond treated wastewater quality at the time of the survey was better than typical of that recorded since dairy wastes were removed from the treatment system (TRC 2013), with lower total BOD, turbidity, and suspended solids levels than previously recorded and an ammoniacal N level near historical median.

2.2 Historical wastewater trends

2.2.1 Evaluation of treatment pond system wastewater quality

Table 6 Summary of treated wastewater analysis results from the DH Lepper Trust piggery/dairy for the period 1991 to January 2011

Parameter	Unit	Number of samples	Range		Median
Conductivity @ 20°C	mS/m	16	222	415	289
pH		4	8.1	8.3	8.1
Total carbonaceous BOD5	g/m^3	16	110	310	170
Filtered carbonaceous BOD_5	g/m^3	7	7.2	46	28
Ammoniacal nitrogen	g/m^3N	9	189	336	257
Turbidity	NTU	14	110	450	205
Suspended solids	g/m^3	17	230	840	420

The results from the final aerobic pond illustrate the variability in effluent quality measured from this dairy/piggery treatment system over the period prior to the establishment of the current tailored consent monitoring programme (Table 6).

Some of this variability relates to stormwater infiltration through the system and the configuration of the recent additional covered anaerobic pond preceding the final aerobic ponds provided by the treatment system over the twenty-two-year period surveyed.

Wastewater quality data recorded for the piggery treatment system between May 2011 and June 2015 have been summarised in Table 7.

Table 7 Summary of the treated wastewater analysis results from the DH Lepper Trust piggery for the period May 2011 to June 2015 (ex removal of dairy wastes)

Parameter	Unit	Number of samples	Range		Median
Conductivity @ 20°C	mS/m	16	216	311	274
pH	pH	16	7.9	8.3	8.1
Total carbonaceous BOD_5	g/m^3	16	53	170	110
Ammoniacal nitrogen	g/m^3N	8	99	294	201
Turbidity	NTU	16	78	180	120
Suspended solids	g/m^3	16	130	350	250
Chloride	g/m^3	15	190	364	246

Parameter	Unit	Number of samples	Range		Median
Total nitrogen (N)	g/m^{3}N	5	237	358	260
Total Phosphorus (P)	g/m^{3}P	5	50	70	56
Potassium (K)	g/m^3	5	192	302	240

Marked improvements in terms of median wastewater concentrations are apparent for total BOD_5 (35% reduction) and suspended solids (40% reduction) following the removal of dairy wastes from the treatment system, although concentrations for the parameters remain typical of piggery ponds treated wastewaters (particularly very high nutrient levels).

Sampling the final anaerobic pond wastewater discharge for nutrients was carried out on three separate occasions during 2013-2014 (Table 7). Nutrients: nitrogen (N), phosphorus (P) and potassium (K) were analysed to evaluate nutrient benefits when spray irrigating effluent to land commences compared to discharging treated effluent to the receiving waters.

The average discharge volume for the past six years has been 14263 m^3 per annum (283 actual discharge hours x 14 L/s discharge effluent flow rate).

The nutrient results from the discharged wastewater show that the annual loading of total nitrogen (N) = 3,708 kg, phosphorus (P) = 799 kg and potassium (K) = 3,423 kg.

Trends in various parameters are graphed in Figures 6-10.

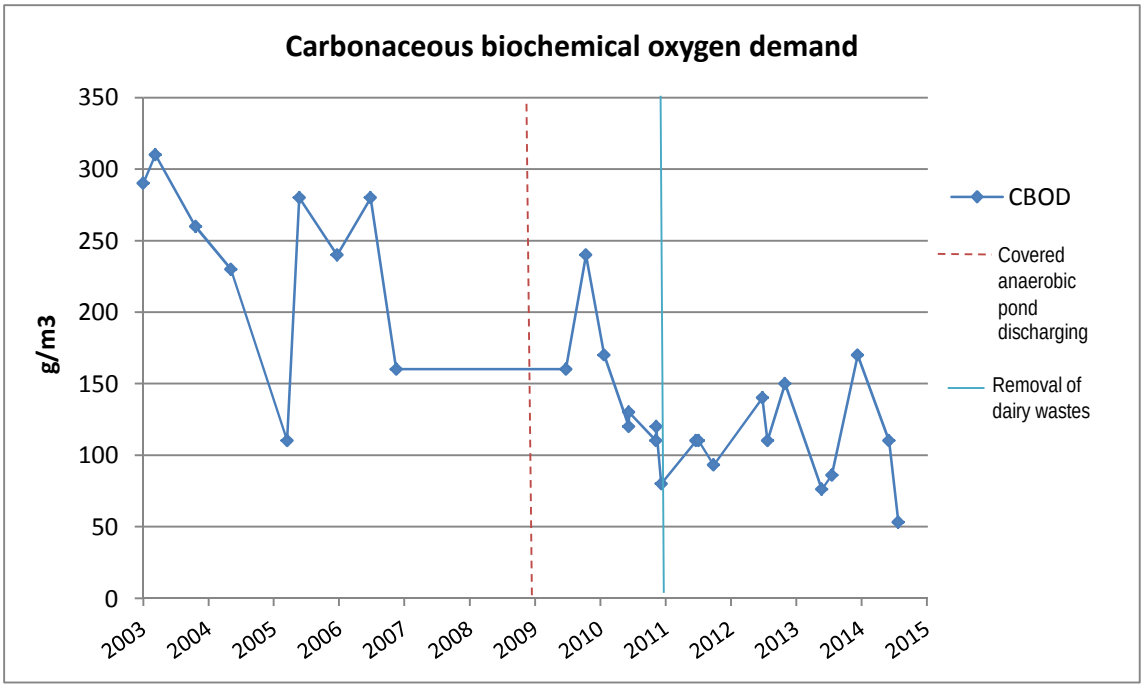

Figure 6 Wastewater carbonaceous biochemical oxygen demand levels for the 2003-2015 period

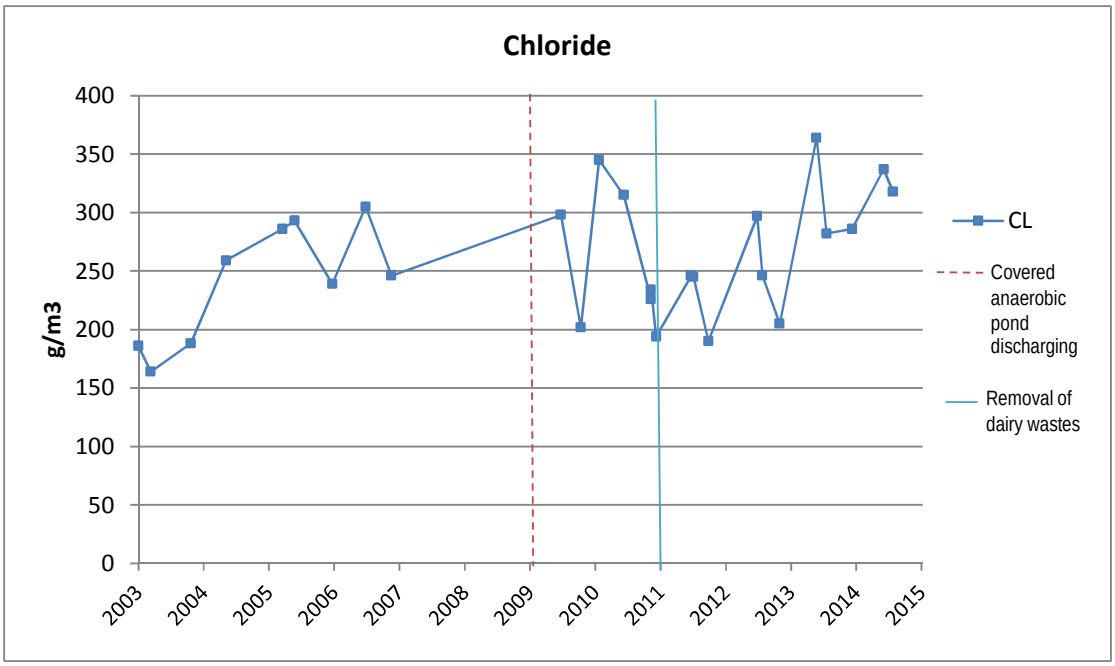

Figure 7 Wastewater chloride levels for the 2003-2015 period

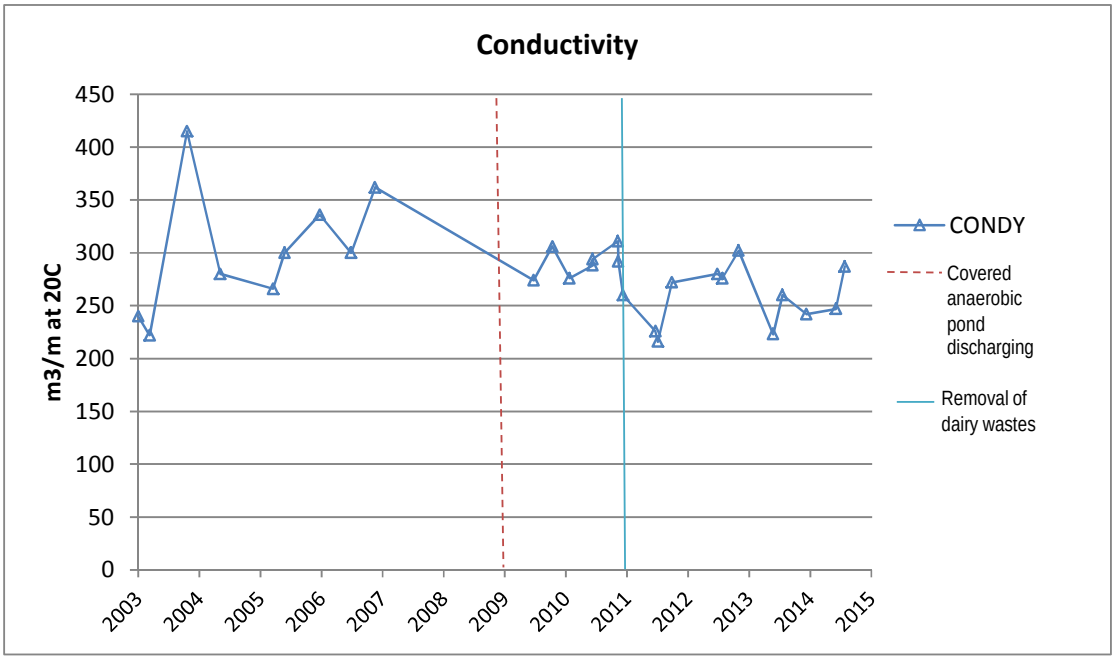

Figure 8 Wastewater conductivity levels for the 2003-2015 period

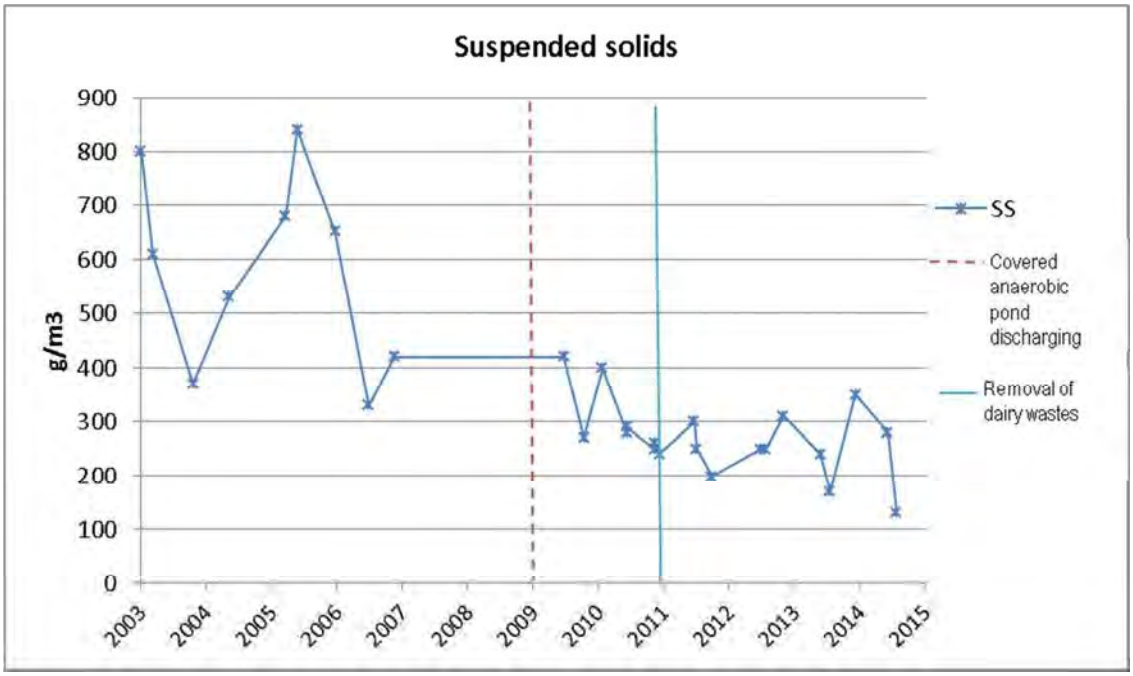

Figure 9 Wastewater suspended solids levels for the 2003-2015 period

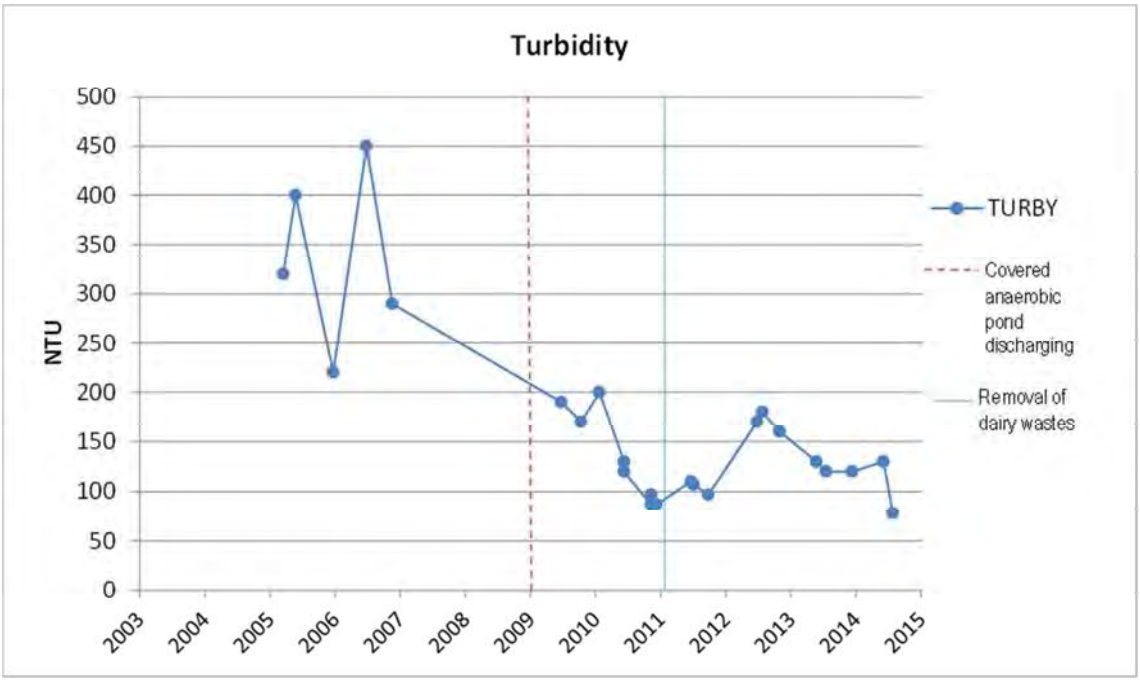

Figure 10 Turbidity levels for the 2003-2015 period

Since the wastewater system upgrade in 2008 and removing dairy shed effluent in 2011, in terms of wastewater quality it appears that BOD_5 (Figure 6), suspended solids (Figure 9) and turbidity levels (Figure 10) are still showing a slight downward trend. It appears that chloride (Figure 7) and conductivity (Figure 8) levels have now stabilised.

2.2.2 Treated effluent discharge records

The Company provides data on treated wastewater discharges to the Waiongana Stream upon request, as required by Special Condition 8 of Consent 0715-3. This data is presented in table 8 below.

Table 8 Discharge records of piggery treated wastes to the Waiongana Stream

Discharge period	Duration (hrs approx.)	Stream flow above 5 m^3/sec
30 Jun 2014 1330 hrs to 01 Jul 2014 1545 hrs	26	Yes
2 Aug 2014 0800 hrs to 3 Aug 2014 0915 hrs	25	Yes
19 Sep 2014 0700 hrs to 19 Sep 2014 1045 hrs	4	Yes
27 Oct 2014 1315 hrs to 27 Oct 2014 2030 hrs	7	Yes
28 Oct 2014 1930 hrs to 29 Oct 2014 0515 hrs	9	Yes
3 Nov 2014 0745 hrs to 3 Nov 2014 1015 hrs (samples collected)	3	Yes
26 Nov 2014 0715 hrs to 26 Nov 2014 0910 hrs	2	Yes
10 Dec 2014 1240 hrs to 11 Dec 2014 0530 hrs	17	Yes
01 Feb 2015 1500 hrs to 01 Feb 2015 2230 hrs	8	Yes
08 Apr 2015 1130 hrs to 11 Apr 2015 1630 hrs	77	Yes
18 Apr 2015 0915 hrs to 18 Apr 2015 1400 hrs	5	Yes
28 Apr 2015 0630 hrs to 28 Apr 2015 1640 hrs (samples collected)	10	Yes
07 May 2015 0930 hrs to 8 May 2015 1520 hrs	30	Yes
12 May 2015 1145 hrs to 12 May 2015 1630 hrs	5	Yes
15 May 2015 1600 hrs to 16 May 2015 1000hrs	18	Yes
19 Jun 2015 1100 hrs to 22 Jun 2015 0630 hrs (samples collected)	20	Yes
Total discharge hours	266	

(Note: all times shown in NZST hours)

These records indicate that the treated effluent discharge into the Waiongana Stream was well managed and that good wastewater dilution ratios have been maintained and were compliant with special condition 4 of Consent **0715-3**. The discharge records indicated that all discharges had occurred when the river flow was above the allowable 5 m^3/s which was compliant with Special Condition 4.

The Waiongana Stream hydrology displays a natural rapid rise and fall (typical of Taranaki ring plain streams) which allows for a limited window of opportunity when treated wastewater can be discharged above the minimum consent limit. The consent holder has access to the Taranaki Regional Council web site (www.trc.govt.nz) which provides current river flow and water levels for the Waiongana Stream recorded at SH3a at the time of discharging.

The consent holder also has access to the HydroTel text messaging service and is notified when the Waiongana Stream flow exceeds 5 m^3/s (i.e. when discharge to stream is allowed) and again when the stream flow recedes back to minimum consent conditions.

For the 2014-2015 monitoring period a total of 266 discharge hours were recorded compared to 250.5 hours for the 2013-2014 period, 283.5 hours for the 2012-2013 period, 274.75 hours for the 2011-2012 period, 311.65 hours for the 2010-2011 period and 312 hours for the 2009-2010 period. The yearly discharge hours averaged over the past six years equates to 283 discharge hours.

2.3 Air

2.3.1 Inspections

Air inspections were carried out in conjunction with all the general compliance monitoring inspections, or if odour complaints are received. There were no odour complaints concerning the piggery emissions from the ponds system, and routine inspections found no objectionable odour offsite. The covered anaerobic pond, has been hugely instrumental in reducing odour resulting in no odour complaints for the 2014-2015 monitoring period.

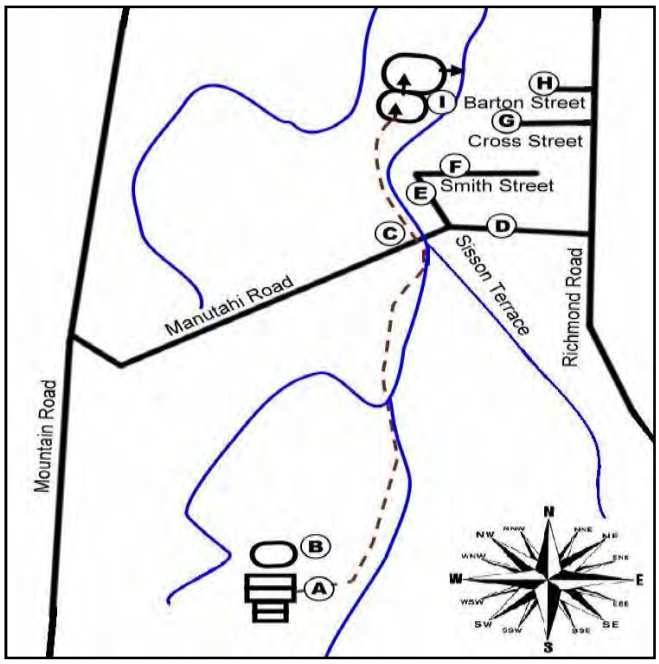

Figure 11 Odour survey monitoring locations

Operations at the piggery had previously resulted in some odour emanating offsite from the ponds system from time to time prior to installing the covered anaerobic pond. Odour issues were the result of general piggery operations and adverse weather conditions. As the piggery wastewater treatment ponds are located near a residential area in the Lepperton Township, there is no real buffer zone.

The Council uses FIDOL factors and scales to rate odour observations. The five FIDOL factors used are frequency, intensity, duration, offensiveness and location.

Frequency:

- How many times the odour is detected during the investigation.

Intensity:

- Perceived strength or concentration of the odour.
- Does not relate to degree of pleasantness or unpleasantness.
- Assessed subjectively using 0-6 scale (ambient).

0. *Not detectable - no odour*
1. *Very weak - odour detected but may not be recognisable*
2. *Weak - odour recognisable (i.e. discernible)*
3. *Distinct - odour very distinct and clearly distinguishable*

4. *Strong - odour causes a person to try to avoid it*
5. *Very strong - odour overpowering and intolerable*
6. *Extremely strong - pungent, highly offensive, overpowering and intolerable.*

Duration:
- The lengths of time people are exposed to odour.
- During an investigation how long does the odour persist.

Offensiveness:
- A rating of an odour's pleasantness or unpleasantness ("hedonic tone").
- This does not necessarily have the same meaning as offensiveness in the Act or consent condition.
- A subjective assessment which can vary between individuals, but which must also be based for compliance purposes on a 'typical 'response.

Location:
- Where the odour is detected from.
- Note type of area (for example, agricultural, residential, or industrial).

The RMA (1991) requires that there should be no offensive or objectionable odour beyond the boundary of the farm.

The pork industry's guide to managing environmental effects, deals with management practices ensuring the effect of odour is taken into account when undertaking activities relating to farm operations.

No complaints concerning piggery odour emissions were received by the Council during the 2014-2015 monitoring period.

2.4 Investigations, interventions, and incidents

The monitoring programme for the year was based on what was considered to be an appropriate level of monitoring, review of data, and liaison with the consent holder. During the year matters may arise which require additional activity by the Council, for example provision of advice and information, or investigation of potential or actual courses of non-compliance or failure to maintain good practices. A pro-active approach that in the first instance avoids issues occurring is favoured.

The Council operates and maintains a register of all complaints or reported and discovered excursions from acceptable limits and practices, including non-compliance with consents, which may damage the environment. The Incident Register (IR) includes events where the Company concerned has itself notified the Council. The register contains details of any investigation and corrective action taken.

Complaints may be alleged to be associated with a particular site. If there is potentially an issue of legal liability, the Council must be able to prove by investigation that the identified company is indeed the source of the incident (or that the allegation cannot be proven).

In the 2014-2015 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with the DH Lepper Trust Piggery in resource consents or provisions in Regional Plans.

3. Discussion

3.1 Discussion of site performance

Receiving water surveys that were undertaken in November 2014 and April 2015 indicated that the dilution rate was below 1 part effluent to 250 parts receiving water and therefore not in compliance with Special Condition 3 at the boundary of the mixing zone at the time these surveys were undertaken. Mixing at the immediate boundary of the designated mixing zone (50 metres below the diffuser outfall) was incomplete and probably not entirely dispersed within the stream flow for several hundred metres downstream of the discharge point.

An investigation that was carried out on the 28 May 2012 (TRC 2012) to determine the flow characteristics at the immediate boundary of the mixing zone confirmed that incomplete mixing may occur under higher flow conditions. Fluorescein dye was also used to trace the piggery discharge from the true left bank some 30 m upstream of the discharge point (near WGA000361) where the river narrowed and it appeared that mixing tended to remain close to the true left bank throughout the mixing zone.

Consent **0715 -3** expired December 2014 and as a result, changes have been made in the renewal process. Consent **0715-4** now includes that over a five year period the consent holder will gradually make 24.6 ha available for land discharge, which will allow for a discharge of approximately 47% of the treated effluent, which is currently being discharged into the Waiongana Stream. The remaining 53%will continue to discharge to the Waiongana Stream under existing conditions, i.e. during fresh conditions no less than 5 cumecs.

As a result of the changes in the piggery operation, provision has been made to include emissions associated with spray-irrigating treated effluent to land, under air discharge Consent **5206-2.**

Before the 01 November 2016 the consent holder is required to provide the Council, with the Piggery Effluent Management Plan (the 'Management Plan') and an Effluent Irrigation Management Plan showing how the consent holder will manage the dual (land & water) discharge. These plans are also to be provided to Fish and Game.

Throughout the 2014-2015 monitoring period the consent holder continued to utilise extracted biogas from the covered anaerobic pond for onsite energy requirements.

The piggery continues to utilise up to 16 tonnes per week of food waste as part of the feeding programme. Large volumes of food wastes products come mainly from local industries. It should be recognised that if the piggery was not utilising these waste food streams, food manufacturing industries would more than likely dispose their unused products to landfill.

The Lepper Piggery is a well run established industry employing up to six highly trained staff.

The consent holder is the local advocate for the Taranaki Pork producers Association.

3.2 Evaluation of performance

A tabular summary of the consent holder's compliance record for the year under review is set out in Tables 9-11.

Table 9 Summary of performance for consent 0715-3

Purpose: *To discharge piggery effluent from an oxidation pond treatment system*		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Operation and discharge in accordance with application	Inspections of data and discharge point inspections	Yes
2. Location of discharge point	Monitoring inspections	Yes
3. Minimum dilution rate in receiving waters	Consent holder's discharge records and monitoring	No (Would have achieved if adequate mixing)
4. Discharge only when river conditions allow	Consent holder's discharge records and monitoring	Yes
5. Maximum concentrations in receiving water after mixing	Sampling	Yes
6. Effects on receiving water after mixing	Monitoring inspections of receiving waters	Yes
7. Operation and maintenance of treatment and discharge system	Monitoring inspections	Yes
8. Records of discharge	Records Received	Yes
9. Effluent of aerobic pond discharged to land	Consent holder to notify Council	Yes
10. Notification of discharging to land	Consent holder to notify Council	Yes
11. Optional review provision	New Consent (0715-4)issued Sept 2015	N/A
12. Optional review provision re environmental effects	Not scheduled for consideration during year under review. Next consideration June 2014	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		Good
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

Table 10 Summary of performance for consent 5206-2

Purpose: *To discharge emissions into the air from a pig farming operation and associated practices including solids composting, effluent treatment and other waste management activities*		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of action to minimise adverse environmental effects	Monitoring inspections	Yes
2. Consultation and approval prior to alterations to plant or process	Monitoring inspections & consent review process	Yes

Purpose: *To discharge emissions into the air from a pig farming operation and associated practices including solids composting, effluent treatment and other waste management activities*		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
3. Minimisation of impact and emissions through use of equipment and suitable methods	Monitoring inspections	Yes
4. Operation in accordance with application	Monitoring inspections	Yes
5. Objectionable odour at site boundary not permitted	Monitoring inspections	Yes
6. Objectionable dust levels at the site boundary nor permitted	Monitoring inspections	Yes
7. Significant adverse ecological effect on ecosystems	Monitoring inspections	Yes
8. Maintenance and landscaping plan	Monitoring inspections	N/A
9. Maintain and operate the effluent ponds and associated activities	Monitoring inspections	Yes
10. Advise neighbours prior to irrigating effluent to land	Monitoring inspections	N/A
11. Particular regard to wind direction to minimise effects upon neighbours	Monitoring inspections	Yes
12. Review of consent conditions	Under review	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

Table 11 Summary of performance for consent 0811-3

Purpose: *To take water from an unnamed tributary of the Waiongana Stream for piggery purposes*		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Minimise environmental effects	Monitoring inspections	Yes
2. Water abstraction not to exceed 50% of the stream flow	Monitoring inspections	Yes
3. Optional review of consent	No further reviews	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

During the year, the Company demonstrated a Good level of environmental and High level of administrative performance with the resource consents as defined in Section 1.1.4

(Note: The non-compliance for minimum dilution rate (1 part effluent to 250 parts receiving water) in receiving water was due to incomplete mixing at the boundary of the mixing zone).

3.3 Recommendations from the 2013-2014 Annual Report

In the 2013-2014 Annual Report, it was recommended:

1. THAT monitoring of air emissions and discharges to natural water from the DH Lepper Trust Piggery in the 2014-2015 year continues at the same level as in the 2013-2014 period except where noted below.

2. THAT the consent holder continues to advise the Council of all treated wastewater discharges to the Waiongana Stream and onto land and to maintain a discharge only when the Waiongana Stream flow rate is above the allowable 5 m^3/sec and with regard to possible non-compliance issues as flow rates become marginal.

3. THAT the consent holder monitors and maintains discharge (water and land) records and forwards these records to the Council as required.

4. THAT the consent holder monitors and maintains anaerobic biogas abstraction rates (flaring and usage) and supplies details to Council if required.

5. THAT the effluent wastewater discharged to the Waiongana Stream continues to be analysed for additional nutrients: total nitrogen (TN), total phosphorus (TP) and potassium (K) for the purpose of evaluation of nutrient benefits for spray irrigation of effluent to land.

6. THAT the consent holder provides all necessary information requested by Council in support of Consent **0715-4** application process.

7. THAT the consent holder provides all necessary information requested by Council in support of Consent **5206-2** (change to consent conditions) application process.

Recommendation 1 - was achieved. Four inspections were carried out including monitoring the wastewater and receiving waters on three separate occasions. There was no requirement to undertake and an additional sampling run.

Recommendation 2 & 3 was achieved. Records received by Council show that all treated wastewater discharges to the Waiongana Stream were discharged only when the Waiongana Stream flow rate was above the allowable 5 m^3/sec.

Recommendation 4 - anaerobic biogas abstraction rates (flaring and usage). Data was not required by the Council on this occasion.

Recommendation 5 – Sampling the treated wastewater for NPK levels was completed in 2013-2014. Sufficient data has now been collated for the purpose of spray irrigating effluent to land. No further sampling is required.

Recommendation 7 Consent renewal application process is near completion.

Recommendation 8 Consent renewal application process is near completion.

3.4 Alterations to monitoring programmes for 2015-2016

In designing and implementing the monitoring programmes for air/water discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, its obligations to monitor emissions/discharges and effects under the RMA, and report to the regional community. The Council also takes into account the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere/discharging to the environment.

In the case of DH Lepper Trust Piggery monitoring programme, it is proposed that for the 2015-2016 period, monitoring continues as set out in the 2014-2015 compliance monitoring programme with an emphasis on a reduction of effluent to be discharged to the receiving waters and a gradual increase to spray irrigate effluent to land over a five year period.

3.5 Exercise of optional review of consent

Resource consent **0715-3** (wastewater discharge) expired on 1 December 2013. Consent 0715-4 was granted September 2015. The next review of the consent is June 2017.

Resource Consent **5206-2** (air discharge) provides for a review of consent in June 2016.

However, Consent **5206-2** was subject to change (to include emissions to air from piggery effluent application to land) therefore a variation to the existing consent was made because this consent did not anticipate the additional effects associated with discharging approximately 47% of treated effluent to land.

Resource Consent **0188-3** - No review required for June 2014. Consent expires June 2020 with no further review dates allowed for.

Based on the results of monitoring in the year under review, and in previous years as set out in earlier annual compliance monitoring reports, it is considered that there are no grounds that require a review to be pursued.

A recommendation to this effect is presented in Section 4 of this report.

4. Recommendations

THAT monitoring of consented activities at DH Lepper Trust Piggery in the 2015-2016 year continues at the same level as in 2014-15 period except where noted below.

1. THAT monitoring of air emissions and discharges to natural water from the DH Lepper Trust Piggery in the 2015-2016 year continues at the same level as in the 2014-2015 period except where noted below.

2. THAT the consent holder continues to advise the Council of all treated wastewater discharges to the Waiongana Stream and onto land and to maintain a discharge only when the Waiongana Stream flow rate is above the allowable $5m^3$/sec.

3. THAT the consent holder monitors and maintains discharge (water and land) records and forwards these records to the Council as required

4. THAT the consent holder provides a 'Piggery Effluent Disposal Management Plan' (the 'Management Plan") as requested by Council in support of Consent **0715-4** application process.

5. THAT the consent holder provides an 'Odour Management Plan' as requested by Council in support of Consent **5206-2** (change to consent conditions) application process.

Glossary of common terms and abbreviations

The following abbreviations and terms may be used within this report:

Biomonitoring	Assessing the health of the environment using aquatic organisms.
BOD	Biochemical oxygen demand. A measure of the presence of degradable organic matter, taking into account the biological conversion of ammonia to nitrate.
BODF	Biochemical oxygen demand of a filtered sample.
Bund	A wall around a tank to contain its contents in the case of a leak.
CBOD	Carbonaceous biochemical oxygen demand. A measure of the presence of degradable organic matter, excluding the biological conversion of ammonia to nitrate.
cfu	Colony forming units. A measure of the concentration of bacteria usually expressed as per 100 millilitre sample.
COD	Chemical oxygen demand. A measure of the oxygen required to oxidise all matter in a sample by chemical reaction.
Conductivity	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 20°C and expressed in mS/m.
Cumec	A volumetric measure of flow- 1 cubic metre per second (1 m^3s^{-1}).
DO	Dissolved oxygen.
DRP	Dissolved reactive phosphorus.
E.coli	Escherichia coli, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample.
Ent	Enterococci, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre of sample.
F	Fluoride.
FC	Faecal coliforms, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample.
Fresh	Elevated flow in a stream, such as after heavy rainfall.
$g/m^2/day$	grams/$metre^2$/day.
g/m^3	Grams per cubic metre, and equivalent to milligrams per litre (mg/L). In water, this is also equivalent to parts per million (ppm), but the same does not apply to gaseous mixtures.
Incident	An event that is alleged or is found to have occurred that may have actual or potential environmental consequences or may involve non-compliance with a consent or rule in a regional plan. Registration of an incident by the Council does not automatically mean such an outcome had actually occurred.
Intervention	Action/s taken by Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring.

Investigation	Action taken by Council to establish what were the circumstances/events surrounding an incident including any allegations of an incident.
IR	The Incident Register contains a list of events recorded by the Council on the basis that they may have the potential or actual environmental consequences that may represent a breach of a consent or provision in a Regional Plan.
L/s	Litres per second.
m^2	Square Metres.
mS/m	Millisiemens per metre.
Mixing zone	The zone below a discharge point where the discharge is not fully mixed with the receiving environment. For a stream, conventionally taken as a length equivalent to 7 times the width of the stream at the discharge point.
NH_4	Ammonium, normally expressed in terms of the mass of nitrogen (N).
NH_3	Unionised ammonia, normally expressed in terms of the mass of nitrogen (N).
NO_3	Nitrate, normally expressed in terms of the mass of nitrogen (N).
NTU	Nephelometric Turbidity Unit, a measure of the turbidity of water.
O&G	Oil and grease, defined as anything that will dissolve into a particular organic solvent (e.g. hexane). May include both animal material (fats) and
pH	A numerical system for measuring acidity in solutions, with 7 as neutral. Numbers lower than 7 are increasingly acidic and higher than 7 are increasingly alkaline. The scale is logarithmic i.e. a change of 1 represents a ten-fold change in strength. For example, a pH of 4 is ten times more acidic than a pH of 5.
Physicochemical	Measurement of both physical properties (e.g. temperature, clarity, density) and chemical determinants (e.g. metals and nutrients) to characterise the state of an environment.
PM_{10}	Relatively fine airborne particles (less than 10 micrometre diameter).
Resource consent	Refer Section 87 of the RMA. Resource consents include land use consents (refer Sections 9 and 13 of the RMA), coastal permits (Sections 12, 14 and 15), water permits (Section 14) and discharge permits (Section 15).
RMA	*Resource Management Act* 1991 and including all subsequent amendments.
SS	Suspended solids.
SQMCI	Semi quantitative macroinvertebrate community index.
Temp	Temperature, measured in °C (degrees Celsius).
Turb	Turbidity, expressed in NTU.
UI	Unauthorised Incident.
Zn*	Zinc.

For further information on analytical methods, contact the Council's laboratory.

Bibliography and references

Taranaki Regional Council 1990 Review of monitoring and inspectoral procedures for dairy shed oxidation pond waste treatment systems. Taranaki Regional Council Technical Report 90-42

Taranaki Regional Council 2004 DH Lepper Trust Piggery Monitoring Programme Annual Report 2003-2004 Technical Report 2004-79

Taranaki Regional Council 2005 DH Lepper Trust Piggery Monitoring Programme Annual Report 2004-2005 Technical Report 2005-24

Taranaki Regional Council 2006 DH Lepper Trust Piggery Monitoring Programme Annual Report 2005-2006 Technical Report 2006-61

Taranaki Regional Council 2007 DH Lepper Trust Piggery Monitoring Programme Annual Report 2006-2007 Technical Report 2007-50

Taranaki Regional Council 2008 DH Lepper Trust Piggery Monitoring Programme Annual Report 2007-2008 Technical Report 2008-16

Taranaki Regional Council 2009 DH Lepper Trust Piggery Monitoring Programme Annual Report 2008-2009 Technical Report 2009-34

Taranaki Regional Council 2010 DH Lepper Trust Piggery Monitoring Programme Annual Report 2009-2010 Technical Report 2010-12

Taranaki Regional Council 2011 DH Lepper Trust Piggery Monitoring Programme Annual Report 2010-2011 Technical Report 2011-34

Taranaki Regional Council 2012 DH Lepper Trust Piggery Monitoring Programme Annual Report 2011-2012 Technical Report 2012-33

Taranaki Regional Council 2013 DH Lepper Trust Piggery Monitoring Programme Annual Report 2012-2013 Technical Report 2013-03

Taranaki Regional Council 2014 DH Lepper Trust Piggery Monitoring Programme Annual Report 2013-2014 Technical Report 2014-28

Miscellaneous references

Ministry for the Environment Good Practice Guide for Assessing & Managing Odour in New Zealand – June 2003

New Zealand Pork Industry Board – Pork Industry guide to Managing Environmental Effects EnviroPork – 2005

NIWA Year in Review 2011 Energy Section

Fish & Game (Taranaki Region) Re Consent 0715-3 - discharge to the Waiongana Stream (TRC ref. # 1030484)

Appendix I

Resource consents held by DH Lepper Trust Piggery

Consent 0715-3

TARANAKI REGIONAL COUNCIL

CHIEF EXECUTIVE
PRIVATE BAG 713
47 CLOTEN ROAD
STRATFORD
NEW ZEALAND
PHONE 06-765 7127
FAX 06-765 5097

Please quote our file number on all correspondence

Discharge Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	DH Lepper Trust SM Lepper 326 Wortley Road R D 9 INGLEWOOD
Consent Granted Date:	18 December 2002

Conditions of Consent

Consent Granted:	To discharge treated piggery and farm dairy effluent from an oxidation pond treatment system into the Waiongana Stream during fresh [high flow] conditions
Expiry Date:	1 December 2013
Review Date(s):	June 2004, June 2008
Site Location:	Manutahi Road, Lepperton
Legal Description:	Pt Lot 2 DP 2634 Sec 185 Huirangi Dist Blk VII Paritutu SD
Catchment:	Waiongana

Treatment/Discharge System[s]::	two oxidation ponds	length	width	depth	[metres]
	anaerobic pond	100	50	4	
	aerobic pond	130	80	1.2	

For General, Standard and Special conditions pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. The consent holder shall, at all times, operate the piggery and associated activities and discharges in accordance with the information provided in support of application 1649, including the management and contingency plans, except as otherwise required or directed by the conditions set out in this resource consent.

2. The discharge point into the Waiongana Stream shall be located at 2614557E-6237954N. The point of discharge shall be beneath the surface of the receiving water.

3. A minimum dilution rate of 1 part effluent to 250 parts receiving water shall be maintained at all times in the receiving water at the point of discharge, during discharge events

4. Discharge from the ponds to the Waiongana Stream shall occur only when the flow in the Waiongana Stream measured at the Taranaki Regional Council SH3A monitoring site is greater than 5 cumecs (5 cubic metres per second).

5. After allowing for reasonable mixing, within a mixing zone extending 50 metres downstream of the discharge point, the discharge shall not cause the receiving waters of the Waiongana Stream to exceed the following concentrations:

Constituent	**Concentration**
Unionised ammonia	0.025 gm^{-3}
Filtered carbonaceous BOD_5	2.0 gm^{-3}

6. After allowing for reasonable mixing, within a mixing zone extending 50 metres downstream of the discharge point, the discharge shall not give rise to any of the following effects in the receiving waters of the Waiongana Stream:

a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
b) any conspicuous change in the colour or visual clarity;
c) any emission of objectionable odour;
d) the rendering of fresh water unsuitable for consumption by farm animals;
e) any significant adverse effects on aquatic life, habitats or ecology.

7. The consent holder shall operate and maintain the treatment and discharge system to ensure that the conditions of this consent are met.

8. The consent holder shall monitor and maintain records of the discharge including date, rate, and volume discharged to the Waiongana Stream; and date, volume and area of land discharge occurs to onto and into land; and shall make these records available to the Chief Executive, Taranaki Regional Council, upon request.

9. Effluent from the aerobic pond shall be discharged onto and into land via irrigation at least once annually during the summer/autumn period, to minimise the adverse effects on water quality in the Waiongana Stream, to the satisfaction of the Chief Executive, Taranaki Regional Council.

10. The Chief Executive, Taranaki Regional Council shall be advised in writing at least 24 hours prior to any irrigation onto and into land from the aerobic pond.

11. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2004 and/or June 2008, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time, including but not limited to:

    a) dilution rate
    b) maximum discharge rate
    c) concentrations of constituents of the discharge
    d) concentrations of constituents of the receiving water.

Signed at Stratford on 18 December 2002

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	DH Lepper Trust [Trustee: Steven Maxwell Lepper] 326 Wortley Road R D 9 INGLEWOOD 4389
Decision Date [Change]:	23 February 2011
Commencement Date [Change]:	23 February 2011 [Granted: 18 December 2002]

Conditions of Consent

Consent Granted:	To discharge treated piggery effluent from an oxidation pond treatment system into the Waiongana Stream during fresh [high flow] conditions at or about (NZTM) 1704451E-5676184N
Expiry Date:	1 December 2013
Site Location:	Manutahi Road, Lepperton
Legal Description:	Pt Lot 2 DP 2634
Catchment:	Waiongana

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
   i) the administration, monitoring and supervision of this consent; and
   ii) charges authorised by regulations.

Special conditions

1. The consent holder shall, at all times, operate the piggery and associated activities and discharges in accordance with the information provided in support of application 1649, including the management and contingency plans, except as otherwise required or directed by the conditions set out in this resource consent.

2. The discharge point into the Waiongana Stream shall be located at 1704451E-5676184N. The point of discharge shall be beneath the surface of the receiving water.

3. A minimum dilution rate of 1 part effluent to 250 parts receiving water shall be maintained at all times in the receiving water at the point of discharge, during discharge events

4. Discharge from the ponds to the Waiongana Stream shall occur only when the flow in the Waiongana Stream measured at the Taranaki Regional Council SH3A monitoring site is greater than 5 cumecs (5 cubic metres per second).

5. After allowing for reasonable mixing, within a mixing zone extending 50 metres downstream of the discharge point, the discharge shall not cause the receiving waters of the Waiongana Stream to exceed the following concentrations:

Constituent	**Concentration**
Unionised ammonia	0.025 gm^{-3}
Filtered carbonaceous BOD_5	2.0 gm^{-3}

6. After allowing for reasonable mixing, within a mixing zone extending 50 metres downstream of the discharge point, the discharge shall not give rise to any of the following effects in the receiving waters of the Waiongana Stream:

   a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
   b) any conspicuous change in the colour or visual clarity;
   c) any emission of objectionable odour;
   d) the rendering of fresh water unsuitable for consumption by farm animals;
   e) any significant adverse effects on aquatic life, habitats or ecology.

7. The consent holder shall operate and maintain the treatment and discharge system to ensure that the conditions of this consent are met.

8. The consent holder shall monitor and maintain records of the discharge including date, rate, and volume discharged to the Waiongana Stream; and date, volume and area of land discharge occurs to onto and into land; and shall make these records available to the Chief Executive, Taranaki Regional Council, upon request.

9. Effluent from the aerobic pond shall be discharged onto and into land via irrigation at least once annually during the summer/autumn period, to minimise the adverse effects on water quality in the Waiongana Stream, to the satisfaction of the Chief Executive, Taranaki Regional Council.

10. The Chief Executive, Taranaki Regional Council shall be advised in writing at least 24 hours prior to any irrigation onto and into land from the aerobic pond.

11. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2004 and/or June 2008, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time, including but not limited to:

    a) dilution rate
    b) maximum discharge rate
    c) concentrations of constituents of the discharge
    d) concentrations of constituents of the receiving water.

Signed at Stratford on 23 February 2011

For and on behalf of
Taranaki Regional Council

_____

Director-Resource Management

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	DH Lepper Trust (Trustees: Steve Maxwell Lepper & Paul Robert Franklin) 326 Wortley Road RD 9 Inglewood 4389
Decision Date:	8 September 2015
Commencement Date:	29 September 2015

Conditions of Consent

Consent Granted:	To discharge treated piggery effluent from an oxidation pond treatment system to land and into the Waiongana Stream during fresh (high flow) conditions
Expiry Date:	1 June 2026
Review Date(s):	June 2017, June 2021, June 2023
Site Location:	Manutahi Road, Lepperton
Legal Description:	Pt Lot 2 DP 2634 Sec 185 Huirangi Dist Blk VII Paritutu SD (Discharge source & site)
Grid Reference (NZTM)	1704471E-5676221N (Water) 1703992E-5675964N (Land)
Catchment:	Waiongana

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General condition

a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance with section 36 of the Resource Management Act 1991.

Special conditions

1. This consent shall be exercised in a manner that ensures, to the greatest extent practicable, the discharge of treated effluent to land is maximised and the discharge to water minimised.

2. The effluent discharged shall be from piggery of no more than 3529 (50 kg) pig equivalents.

3. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects of the discharge on the environment.

4. All effluent generated at the piggery site shall be treated in a system of oxidation ponds, involving at least one anaerobic pond and two aerobic ponds.

5. Any discharge shall be from the aerobic pond on site.

6. There shall be no overflow of effluent from any part of the effluent disposal system.

7. The consent holder shall ensure that at all times, while complying with the other requirements of this consent, there is sufficient storage available in the effluent treatment system for any reasonably likely inflow, so that there is no unauthorised discharge to land or water.

8. A flow control structure, such as a 'tee-piece' pipe or other baffle system that achieves the same outcome, shall be maintained and operated on the outlet of the first oxidation pond so as to minimise the movement of solids from the pond**.**

9. The effluent treatment system and disposal system shall be operated and maintained to ensure compliance with the conditions of this consent. Operation and maintenance shall include as a minimum:

    (a) vegetation control on and around the storage facility;
    (b) desludging;
    (c) ensuring that there is adequate freeboard in ponds to allow for contingencies such as a pipe blockage; and
    (d) cleaning, repairing and generally ensuring the integrity of the:
        (i) irrigator;
        (ii) stormwater diversion;
        (iii) sand trap;
        (iv) piping;
        (v) pump(s);
        (vi) pond wall; and
        (vii) fences.

10. The consent holder shall keep accurate records of effluent application to land and water, including, as a minimum, the:

    (a) type of effluent (e.g. solid, liquid);
    (b) volume of effluent applied;
    (c) rate and duration of application;
    (d) loading of potassium and nitrogen over the discharge area;
    (e) paddock and area (ha) that the effluent was applied to;
    (f) date the paddock received effluent;
    (g) wind direction;
    (h) any odour from the land application;
    (i) any complaints received, including dates and times; and
    (j) date, duration (start and finish times), rate and volume of the discharge to the Waiongana Stream.

    This information shall be provided to the Taranaki Regional Council upon request.

11. From 1 November 2016 and subject to the other conditions of this consent, this consent shall be exercised in accordance with a *Piggery Effluent Disposal Management Plan* (the 'Management Plan') that has been approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity. The Management Plan shall detail how the consent holder will manage the dual discharge to ensure that adverse environmental effects are avoided as far as practical, and consent conditions are met and can be shown to be met. It shall address as a minimum:

    (a) methods and procedures for maximising the discharge of contaminants to land;
    (b) methods and procedures for minimising the discharge of contaminants to the Waiongana Stream;
    (c) the staged implementation of the discharge to land, including the amount of discharge and area of land for disposal at each stage;
    (d) monitoring the quality and rate of the discharge;
    (e) monitoring the quality and flow of the Waiongana Stream;
    (f) management of the wastewater treatment system;
    (g) minimisation of potassium, nitrogen and phosphorus in the wastewater discharge and how this is being achieved;
    (h) methods for determining the amount of nitrogen and potassium discharged to land; and
    (i) reporting on the exercise of the consent.

12. From 1 November 2016, and subject to the other conditions this consent, this consent shall be exercised in accordance with an Effluent Irrigation Management Plan ('EIMP') that has been approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity. The EIMP shall detail how the application of effluent will be managed to ensure that the soil moisture deficit in not exceeded on high risk soils or soils with slopes of more than 7 degree and effluent will be retained in the top 300 mm for low risk soils including, as a minimum, details of:

    (a) area(s) to be irrigated and the method of irrigation;
    (b) evapotranspiration and available water holding capacity of the soil(s) over the irrigated area;
    (c) how irrigation will be scheduled to maximise the benefits of evapotranspiration and minimise subsurface drainage;
    (d) how available soil water will be determined;
    (e) how water is to be applied as uniformly as practicable over the irrigated area, and the uniformity of application demonstrated; and
    (f) information to be provided to the Taranaki Regional Council to enable compliance to be checked.

    Note: The 'Effluent Irrigation Management Plan' may be combined with the 'Piggery Effluent Disposal Management Plan' required by condition 11.

13. Before 1 June 2021, the consent holder shall provide a *Land Disposal Options Report* (LDOR) to the Chief Executive, Taranaki Regional Council. The purpose of the LDOR is to detail the feasibility of disposing all of the effluent to land. The report will include, as a minimum:

    (a) details of the proportion of contaminants that have been discharged to land to date;
    (b) a general assessment of the efficacy of land disposal based on experience at the site taking into account such matters as cost and environmental benefits;
    (c) an assessment of the land area that would be needed to dispose of all the effluent to land; and
    (d) identification of specific areas of land that could be used for expanded land disposal.

14. Plans and reports submitted to the Chief Executive, Taranaki Regional Council in accordance with conditions 11, 12 and 13 shall also be provided to Fish and Game New Zealand at the same time. Any comments made by Fish and Game New Zealand within 15 working days of receiving a plan or report may be taken into account by the Chief Executive, Taranaki Regional Council when determining if the plan or report meets the requirements of this consent.

Discharge to water conditions

15. The rate of the discharge to water shall not exceed 16 litres/second.

16. The discharge from the pond to the Waiongana Stream shall occur only when the flow in the Waiongana Stream measured at the Taranaki Regional Council SH3A monitoring site is greater than 5 cubic metres per second.

17. The discharge point into the Waiongana Stream shall be located at (NZTM) 1704471E–5676221N. This point of discharge shall be beneath the surface of the receiving water.

18. After treatment in the aerobic pond, the maximum concentration of the constituents shown in the table below shall not be exceeded in the effluent.

Constituent	Maximum Concentration
Total carbonaceous BOD_5	110 gm^{-3}
Suspended solids	100 gm^{-3}

19. The consent holder shall ensure that there is always clear and safe access to a point where the effluent from the final pond can be sampled.

20. The discharge shall not cause the maximum concentration of any constituent shown in the following table to be exceeded in the receiving water more than 50 metres downstream of the discharge to the receiving water.

Constituent	Maximum Concentration
Unionised ammonia	0.025 gm^{-3}
Filtered carbonaceous BOD_5	2.0 gm^{-3}

Discharge to land conditions

21. From 1 June 2020, the consent holder shall ensure that effluent application to land is as evenly as practicable over an area of no less than 24.6 hectares.

22. Discharges to land shall not result in effluent ponding on the surface that remains for more than 30 minutes.

23. Over any 12 month period the amount of potassium (K) applied to land as a result of the discharge shall not exceed 100 kg per hectare.

24. Over any 12 month period the amount of Total Nitrogen (N) applied to land as a result of the discharge shall not exceed 200 kg per hectare.

25. The discharge authorised by this consent shall not occur within 25 metres of any surface water body.

26. Where, for any cause (accidental or otherwise), untreated or partially treated effluent associated with the consent holder's operations escapes to surface water, the consent holder shall:

    (a) immediately notify the Taranaki Regional Council on Ph. 0800 736 222 (notification must include either the consent number or farm dairy number); and
    (b) stop the discharge and immediately take steps to control and stop the escape of untreated or partially treated effluent to surface water; and
    (c) immediately take steps to ensure that a recurrence of the escape of untreated or partially treated effluent to surface water is prevented; and
    (d) report in writing to the Chief Executive, Taranaki Regional Council, describing the manner and cause of the escape and the steps taken to control it and to prevent it reoccurring. The report shall be provided to the Chief Executive within seven (7) days of the occurrence.

27. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2017 and/or June 2021 and/or June 2023, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time, including consideration, following receipt of the report required by condition 13, of the feasibility of expanding the irrigation area to dispose of all effluent to land.

Signed at Stratford on 8 September 2015

For and on behalf of
Taranaki Regional Council

_____

A D McLay
Director - Resource Management

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	DH Lepper Trust [Trustees: Steven Maxwell Lepper & Paul Robert Franklin] 326 Wortley Road R D 9 INGLEWOOD
Consent Granted Date:	13 November 2008

Conditions of Consent

Consent Granted:	To discharge emissions into the air from a pig farming operation and associated practices including solids composting, effluent treatment and other waste management activities at or about (NZTM) 1704054E-5674882N [Piggery] and 1704345E-5676156N [Ponds]
Expiry Date:	1 June 2026
Review Date(s):	June 2009, June 2011, June 2013, June 2016, June 2020
Site Location:	Mountain Road, Lepperton
Legal Description:	Lot 3 DP 21006 [Piggery] & Pt Lot 1491, Pt Lot 2 DP 2634 [Ponds]

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. The number of pigs [equivalent 50 kg per pig] on the property at any one time shall not exceed 3500 pig equivalents.

2. Notwithstanding any other condition of this consent, the consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any actual or likely adverse effect on the environment associated with the discharge of contaminants from the site.

3. Before 30 September 2009, the development of the covered anaerobic pond shall be completed. From that date gases emanating from the covered anaerobic pond shall be captured and appropriately utilised as an energy source.

4. Prior to undertaking any alterations to the piggery unit's processes, operations, equipment or layout, which may significantly change the nature or quantity of contaminants emitted from the site, the consent holder shall consult with the Chief Executive, Taranaki Regional Council, and shall obtain any necessary approvals under the Resource Management Act 1991 and its amendments.

5. The consent holder shall minimise the emissions and impacts of contaminants discharged into air from the site by:

a) the selection of the most appropriate process equipment;
b) process control equipment and emission control equipment;
c) the methods of control;
d) the proper and effective operation, supervision, maintenance and control of all equipment and processes; and
e) the proper care of all pigs on the site.

6. Subject to condition 7, the discharges authorised by this consent shall not give rise to an odour at or beyond the property boundary that is offensive or objectionable.

7. To allow for the conversion of the existing anaerobic pond to an aerobic state, discharges from this pond may give rise to intermittent offensive and objectionable odour beyond the property boundary until 30 September 2009.

8. For the purposes of condition 6 and 7, an odour shall be deemed to be offensive or objectionable if:

   a) it is held to be so in the opinion of an enforcement officer of the Taranaki Regional Council, having regard to the duration, frequency, intensity and nature of the odour; and/or
   b) an officer of the Taranaki Regional Council observes that an odour is noticeable, and either it lasts longer than three (3) hours continuously, or it occurs frequently during a single period of more than six (6) hours; and/or
   c) no less than three individuals from at least two different properties, each declare in writing that an objectionable or offensive odour was detected beyond the boundary of the site, provided the Council is satisfied that the declarations are not vexatious and that the objectionable or offensive odour was emitted from the site at the frequency and duration specified in (b). Each declaration shall be signed and dated and include:

      - the individuals' names and addresses;
      - the date and time the objectionable or offensive odour was detected;
      - details of the duration, frequency, intensity and nature of the odour that cause it to be considered offensive or objectionable;
      - the location of the individual when it was detected; and
      - the prevailing weather conditions during the event.

9. The consent holder shall provide an Odour Management Plan that details to the satisfaction of the Chief Executive of Taranaki Regional Council how odorous emissions beyond the property boundary will be minimised by 30 September 2009. The plan shall include:

   i) Define the environmental effect/s being managed by the plan and the objective sought in relation to this effect;

   ii) Identify key personnel responsible to managing the effect;

   iii) Describe the activities on the site and describe the main potential sources of odour emissions;

   iv) Identify and describe methods of mitigation and operating procedures including the dewatering of the anaerobic pond or during control contingency discharge events;

   v) Monitoring methods including record keeping of maintenance and control parameters, any odour complaints received and weather conditions present at time of complaints.

   Thereafter, the piggery and associated waste management practices shall be operated in accordance with the plan.

10. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2009 and/or June 2011 and/or June 2013 and/or June 2016 and/or June 2020, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 13 November 2008

For and on behalf of
Taranaki Regional Council

_____

Director-Resource Management

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	DH Lepper Trust (Trustees: Steven Maxwell Lepper & Paul Robert Franklin) 326 Wortley Road RD 9 Inglewood 4389
Decision Date (Change):	8 September 2015
Commencement Date (Change):	29 September 2015 (Granted Date: 13 November 2008)

Conditions of Consent

Consent Granted:	To discharge emissions into the air from a pig farming operation and associated practices including solids composting, effluent treatment system, effluent application to land and other waste management activities
Expiry Date:	1 June 2026
Review Date(s):	June 2016, June 2020
Site Location:	Mountain Road, Lepperton
Legal Description:	Pt Lot DP 2634 Sec 185 Huirangi Dist Blk VII Paritutu SD Lot 3 DP 21006 (Discharge source & site)
Grid Reference (NZTM)	1703992E-5675964N (Land & air) 1704041E-5674835N (Air)

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

    i) the administration, monitoring and supervision of this consent; and
    ii) charges authorised by regulations.

Special conditions

1. The number of pigs (equivalent 50 kg per pig) on the property at any one time shall not exceed 3529 pig equivalents.

2. Notwithstanding any other condition of this consent, the consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any actual or likely adverse effect on the environment associated with the discharge of contaminants from the site.

3. Prior to undertaking any alterations to the piggery unit's processes, operations, equipment or layout, which may significantly change the nature or quantity of contaminants emitted from the site, the consent holder shall consult with the Chief Executive, Taranaki Regional Council, and shall obtain any necessary approvals under the Resource Management Act 1991 and its amendments.

4. The consent holder shall minimise the emissions and impacts of contaminants discharged into air from the site by:

    (a) the selection of the most appropriate process equipment;
    (b) process control equipment and emission control equipment;
    (c) the methods of control;
    (d) the proper and effective operation, supervision, maintenance and control of all equipment and processes; and
    (e) the proper care of all pigs on the site.

5. The discharges authorised by this consent shall not give rise to an odour at or beyond the property boundary that is offensive or objectionable.

6. For the purposes of condition 5, an odour shall be deemed to be offensive or objectionable if:

   (a) it is held to be so in the opinion of an enforcement officer of the Taranaki Regional Council, having regard to the duration, frequency, intensity and nature of the odour; and/or
   (b) an officer of the Taranaki Regional Council observes that an odour is noticeable, and either it lasts longer than three (3) hours continuously, or it occurs frequently during a single period of more than six (6) hours; and/or
   (c) no less than three individuals from at least two different properties, each declare in writing that an objectionable or offensive odour was detected beyond the boundary of the site, provided the Council is satisfied that the declarations are not vexatious and that the objectionable or offensive odour was emitted from the site at the frequency and duration specified in (b). Each declaration shall be signed and dated and include:
      i. the individuals' names and addresses;
      ii. the date and time the objectionable or offensive odour was detected;
      iii. details of the duration, frequency, intensity and nature of the odour that cause it to be considered offensive or objectionable;
      iv. the location of the individual when it was detected; and
      v. the prevailing weather conditions during the event.

7. Prior to any discharge in accordance with consent 0715-4, the consent holder shall provide an Odour Management Plan which details to the satisfaction of the Chief Executive of Taranaki Regional Council how odorous emissions beyond the property boundary will be minimised. The plan shall include:

   (a) A definition of the environmental effects being managed by the plan and the objective sought in relation to this effect;
   (b) Identify key personnel responsible to managing the effect;
   (c) Describe the activities on the site and describe the main potential sources of odour emissions;
   (d) Identify and describe methods of mitigation and operating procedures including the dewatering of the anaerobic pond or during control contingency discharge events;
   (e) Monitoring methods including record keeping of maintenance and control parameters, any odour complaints received and weather conditions present at time of complaints.

   Thereafter, the piggery and associated waste management practices shall be operated in accordance with the plan.

8. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2016 and/or June 2020, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 8 September 2015

For and on behalf of
Taranaki Regional Council

_____

A D McLay
Director - Resource Management

Consent 0188-3

TARANAKI
REGIONAL
COUNCIL

PRIVATE BAG 713
47 CLOTEN ROAD
STRATFORD
NEW ZEALAND
PHONE 0-6-765 7127
FAX 0-6-765 5097

Water Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	Lepper D H Trust S Lepper 326 Wortley Road R D 9 INGLEWOOD
Consent Granted Date:	9 January 2002

Conditions of Consent

Consent Granted:	To take up to 75 cubic metres/day [0.9 litres/second] of water from an unnamed tributary of the Waiongana Stream for piggery operation purposes at or about GR: Q19:145-366
Expiry Date:	1 June 2020
Review Date(s):	June 2008, June 2014
Site Location:	Manutahi Road, RD 3, New Plymouth
Legal Description:	Pt Sec 185 & 186 Huirangi Dist Blk VII Paritutu SD
Catchment:	Waiongana

For General, Standard and Special conditions pertaining to this consent please see reverse side of this document

General conditions

a) That on receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. At all times the consent holder shall adopt the best practicable option to prevent or minimise any actual or likely adverse effect on the environment associated with the abstraction of water from the unnamed tributary in the Waiongana Stream catchment, including, but not limited to, the efficient and conservative use of water.

2. That abstraction shall not exceed 50% of the natural stream flow at any time.

3. The Taranaki Regional Council may review, according to section 128 of the Resource Management Act 1991, any or all of the conditions of this consent by giving notice of review during June 2008 and/or June 2014, for the purpose of ensuring that the conditions are adequate to deal with any significant adverse effects on the environment arising from the exercise of this consent, which either were not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 9 January 2002

For and on behalf of
Taranaki Regional Council

Director-Resource Management