

NZ Pure Bred Genetics Ltd (Piggery)
Monitoring Programme
Annual Report
2014-2015

Technical Report 2015-36

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Executive summary

NZ Pure Bred Genetics Ltd (formerly Meadowvale Piggery) operates a piggery located on Mountain Road at Midhirst, in the Manganui catchment. Transfer of consents between the two parties became effective on 1 December 2012. NZ Pure Bred Genetics Ltd (the Company) specialises in growing 8 to 10 weeks old weaners for the market and do not grow fattening pigs at the piggery. Significantly less effluent is produced by not growing fattening pigs.

This report for the period July 2014 to 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 two resource consents, which include a total of 22 conditions setting out the requirements that the Company must satisfy. The Company holds resource consent **0351-3** to allow the discharge of treated effluent to land and into Rumkeg Creek and consent **5249-2** to allow the discharge of emissions into the air from the piggery site.

Consent **0351-3** expired on 1 June 2015 and an application to renew the consent has been applied for. Section 124 of the Resource Management Act (1991) allows the consent holder to operate on the existing consent until a new consent has been granted.

During the year the company demonstrated an overall good level of environmental performance.

The consent holder will need to consider the proposed changes in the Regional Fresh Water Plan which relates to managing diffuse source discharges to land and water in the Taranaki Region when a new consent is applied for.

The Council's monitoring programme for the year under review included five inspections and one wastewater and receiving water physicochemical survey.

In the 2014-2015 monitoring period, the Council had received 12 alleged complaints concerning the Company regarding odour, sump overflows and discharges of pig effluent to water. All these complaints were investigated and found that no 'objectionable' and or 'offensive' odour was found to be emanating beyond the piggery boundary nor were there any unauthorised discharges from the effluent treatment system discharging into the receiving waters.

During the year, the Company demonstrated a good level of environmental performance and a high level of administrative performance with the resource consents.

This report includes recommendations for the 2015-2016 year.

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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 to June 2015 by the Taranaki Regional Council (the Council) on the monitoring programme associated with resource consents held by NZ Pure Bred Genetics Ltd (formerly known as Meadowvale Stud Farm Ltd Piggery).

NZ Pure Bred Genetics Ltd (the Company) is operated by J & R Cooley who leases the piggery buildings and associated wastewater treatment system from E & J O'Sullivan. The Company operates a piggery situated on Mountain Road at Midhirst, in the Manganui 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 discharges of water within the Manganui catchment, and the air discharge permit held by 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 site.

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 through annual programmes, the resource consents held by the Company in the Manganui catchment, the nature of the monitoring programme in place for the period under review, and a description of the activities and operations conducted by the Company at the piggery site.

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 during the period under review, this report also assigns a rating as to the 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 of 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



Figure 1 Aerial photograph of the piggyery and waste water treatment ponds

The Company currently have the largest registered purebred herd in New Zealand with the NZ Pig Breeders Association of Berkshire, Duroc, Hampshire, Large White and Landrace breeds. Current stock numbers include up to 155 sows, gilts, weaners, boars and up to 100 piglets and any one time (Table 1). Future plans are to increase stock numbers up to 180 breeding sows.

Table 1 Piggery Composition as at 30 June 2015

Type of pigs	No of pigs	Average weight	Total weight	50 kg Equivalent pigs
Sows	155	162	25110	502
Gilts	14	150	2100	42
Boars	14	160	2240	45
Weaners (8 – 10 weeks)	45	18	810	16
Total	228		30260	605

The Company specializes in growing 8 to 10 weeks old weaners for the market and do not produce fattening pigs at the piggery. Significantly less effluent is produced by not growing fattening pigs.

Piggery wastewater is collected from various collection sumps situated around the piggery. Raw piggery effluent passes through a cyclone separator (Photo 1) which separates out the solid component (Photo 2) from the wastewater. Removal of solids from the wastewater stream significantly reduces the biochemical oxygen demand (BOD). Wastewater from the separation process is pumped back to the initial anaerobic pond. The solid waste is binned and sold as a soil conditioner (Photo 3).



Photo 1 Cyclone effluent separator



Photo 2 Solid piggery waste

The oxidation pond system consists of three ponds as shown in Figure 1. These ponds were designed to operate as an initial anaerobic pond, followed by two aerobic ponds. However, in practice the second pond operates as an anaerobic pond. Therefore there are two anaerobic ponds and one aerobic pond.

These ponds are adequately sized for the treatment of the piggery wastes provided the system is regularly maintained.



Photo 3 Solids separation area where solid waste is stored in bins

From the treatment pond system, treated wastewater is spray irrigated to the surrounding farmland, including a neighbouring property or discharged to the Rumkeg Creek. Rumkeg Creek is a tributary of the Manganui River in the Waitara catchment and joins the Manganui River 750 m downstream of the discharge.

Wastewater from the treatment system is only discharged to the Rumkeg Creek when river flow conditions provide for at least 250 times effluent dilution. When low receiving water flow conditions preclude this discharge, it is expected that treated wastewater should be spray irrigated onto nearby farmland.

It is recommended that wastewater is spray irrigated onto the surrounding farmland from the second anaerobic treatment pond. Previously untreated wastewater was pumped directly from out of the separator sump which had contributed to odour issues during certain wind conditions. Spray irrigating partially treated effluent will reduce the odour effects which are sometimes associated with spray drift.

1.3 Resource consents

1.3.1 Water and Land 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.

Sections 15(1)(b) and (d) of the RMA stipulate that no person may discharge any contaminant onto land if it may then enter water, or from any industrial or trade premises onto land under any circumstances, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

The Company holds water and land discharge permit **0351-3** to discharge treated piggery effluent from an oxidation pond treatment system into the Rumkeg Creek, a tributary of the Manganui River in the Waitara catchment (during high flow conditions) and to discharge treated piggery effluent into and onto land. This permit was issued by the Taranaki Regional Council on 5 September 2003 (change of conditions: 27 July 2009) as a resource consent under Section 87(e) of the RMA.

Permit **0351-3** expired on 1 June 2015 and the Company applied to renew this permit in late Feb 2015. Whilst the Council processes this application the Company are operating under the expired permit, this is in accordance with section 124 of the RMA.

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.

The discharge of piggery effluent to land greatly improves soil fertility. However piggery effluent also has the potential to contaminate groundwater and surface water if managed inappropriately.

The Council's policy is to promote spray irrigation to land in preference to discharging to water.

There are sixteen special conditions that are attached to this consent.

Discharge to water

Special condition 1 refers to the consent holder operating the piggery and associated activities and discharges in accordance to information provided as directed by conditions set out in the resource consent.

Special conditions 2, 3 and 4 relate to the operation of piggery and associated activities and discharges to water within consent conditions and defines the mixing zone and prohibited effects on the receiving waters.

Special condition 5 requires the consent holder to operate and maintain the treatment and discharge system to ensure compliance.

Special condition 6 requires the consent holder to maintain the minimum dilution rate at all times in the receiving water at point of discharge.

Special condition 7 requires the consent holder to monitor, maintain and supply records of the discharge.

Special condition 8 requires riparian fencing and planting to be completed.

Discharge to land

Special conditions 9 and 10 limit effluent application rates to land in terms of nutrient loadings over any 12 month period.

Special conditions 11, 12 and 13 relate to areas and locations of land discharge, prohibit discharges to surface water, and place restrictions on ponding.

Special condition 14 requires the consent holder to monitor and maintain records of the land discharge.

Special condition 15 requires that the discharge to land shall be maximised and used in preference to discharge to water.

Special condition 16 relates to review of consent conditions.

The permit is attached to this report in Appendix I.

1.3.2 Air discharge permit

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant into air, 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 air discharge permit **5249-2** to discharge emission into the air from a pig farming activity and associated activities, including solids composting, effluent treatment and irrigation and other waste management activities. This permit was issued by the Council on 27 July 2009 as a resource consent under Section 87(e) of the RMA. It is due to expire on 1 June 2027.

Piggery effluent has the potential to produce significant odour especially when discharged to land. Six special conditions are attached to this consent.

Special condition 1 stipulates the number of pigs equivalents allowed on the property at any one time.

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 controls alterations which may significantly change the nature or quantity of contaminants from the site.

Special condition 4 requires the consent holder to minimise the emissions and impacts of air contaminants from the site.

Special condition 5 requires the consent holder limit odour at or beyond the boundary.

Special condition 6 allows for two additional reviews.

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 Company consisted of four 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 Company was visited five times during the monitoring period. With regard to consents for discharge to water land and air, 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.

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 mixing zone.

The Company's discharge was sampled on one occasion, and the sample analysed for carbonaceous biochemical oxygen demand (CBOD₅), chloride, conductivity, suspended solids, and dissolved reactive phosphate (DRP), un-ionised ammonia, pH, turbidity and temperature.

Rumkeg Creek was sampled on the same occasion, upstream and downstream of the treated discharge. The samples were analysed for filtered carbonaceous biochemical oxygen demand (FCBOD₅), chloride, conductivity, suspended solids, dissolved reactive phosphate (DRP), un-ionised ammonia, pH, turbidity and temperature.

The monitoring programme allows for the discharge and receiving water to be sampled on two occasions, however due to the limited discharge opportunities sampling on two separate occasions did not eventuate.

1.4.5 Biomonitoring surveys

No bio-monitoring survey for the piggery was undertaken in the 2014-2015 monitoring period, as none was scheduled within the baseline monitoring programme. Because of the reduction of treated piggery effluent discharge periods including the reduction of pig numbers, a biomonitoring survey was not considered necessary on this occasion.

2. Results

2.1 Water

2.1.1 Inspections

22 August 2014

This initial inspection for the monitoring period was carried out during fine weather conditions. A light cool southerly was blowing. No noticeable odour was detected around the piggery in general. The solid separator was operating and the bins were taking longer to fill due to improved wash down practices and less effluent being generated. The first anaerobic pond discharge was just trickling into the second pond and was relatively clear in colour. The discharge from the second to final aerobic pond was also trickling and relatively clear. No discharge was occurring from the final pond. No odour was emanating around the ponds system and it appeared that the pond contents were fully contained i.e. no seepage from the pond bunds was observed at the time of inspection.

27 November 2014

This inspection was carried out during fine weather conditions with a north westerly breeze blowing. Only slightly noticeable odours were detected at various downwind sites of the piggery and solids separation area. The pond system appeared to be working well with a clear discharge flowing from the second pond into the final pond. The anaerobic pond was working well with minimal odour being detected.

11 March 2015

A slight north east breeze was blowing at the time of the inspection. The solids separator was not operating. All pond levels were well maintained showing good freeboard. The anaerobic pond was not discharging into the second pond. The second pond was discharging into the final pond with room for further holding capacity.

An odour inspection of the piggery and downwind sites found normal piggery odour with nothing offensive or objectionable being noted. Overall the piggery appeared to be well managed and operating within the resource consent conditions.

9 April 2015

Piggery discharge and receiving water samples were collected during overcast weather conditions with a light south easterly wind blowing. Rumkeg Creek was in fresh. Denbigh Road bridge staff gauge reading was 0.70 m at the time of sampling. The piggery discharge flow rate from the final pond was estimated at between 6 and 8 L/s. No visual downstream environmental effects were observed from the treated piggery wastewater discharge.

Piggery discharge records were checked, and six separate discharges to the Rumkeg Creek had been recorded to date.

Because of several unsubstantiated odour complaints received by the Council, the consent holder had installed a weather monitoring station at the piggery. Noted were wind direction (south east), wind speed 14.5 km/hour and rainfall volume (77 mm in last 24hrs).

The consent holder has also installed a new solids separator (juicer), replacing the old solids separator system. This area had been tidied up and no odour was found to be emanating from around this area or from the pig solids stored in cardboard plastic-lined bins.

Discussion took place with the consent holder regarding some options of pumping solids from the middle pond through the solids separator and discharging the wastewater onto a nearby farm.

No concerning odour was found to be emanating beyond the piggery boundary at the downwind monitoring sites.

30 June 2015

An extra compliance monitoring inspection was carried out at the piggery, in response to the Council receiving several anonymous odour complaints.

The weather was fine and sunny. A very light northerly breeze (10.8 km/hr at 1120 hrs) was blowing at the consent holder's weather station.

No wastewater discharge was occurring, although the discharge valve from the final pond was found to be in the open position. The reason the valve was found open was a surprise to the consent holder, as records show the last discharge occurred on the 21 June 2015. (There was no evidence of any recent discharge). The Rumkeg Creek staff gauge was reading 0.32 m.

The perimeter drain running around the south and eastern sides of the final pond, which discharges into the Rumkeg Creek, was flowing relatively clean and clear. Natural groundwater seepage flows from an embankment above the drain, which is clearly visible.

Discharge records received show 14 separate discharge periods into Rumkeg Creek for the monitoring period. The piggery had also produced 3.25 tonnes of dried pig effluent from the 'juicer', which has been sold as a garden conditioner (high magnesium and calcium).

The sow shed influent flows into the No. 1 sump, from here liquids are pumped intermittently through the juicer, which removes solids and returns liquids back to anaerobic pond. This pond was grey-brown in colour and displaying some light microbial activity. There was no sign of any discharge over the top edge of this pond, although the west pond bund had recently been built up at a low point.

The middle pond was brown in colour, partially covered with dark scum and showing approximately 1500 mm of freeboard.

The final pond was green-brown in colour, showing approximately 750 mm freeboard at its lowest point.

Pig inventory was 155 breeding sows, nine gilts, 14 boars with 40-50 weaners going to Ganes Piggery weekly (Berkshire, Duroc, large white and Landrace), all animal welfare certified.

Piggery odour emissions were emanating around all three ponds, sumps and housing, but was not an issue. On a hedonic scale of 0-5, the highest score recorded was 1. The Council advised the consent holder to lock both the outlet valves from the final pond to prevent any tampering or unauthorised discharge.

2.1.2 Results of discharge monitoring

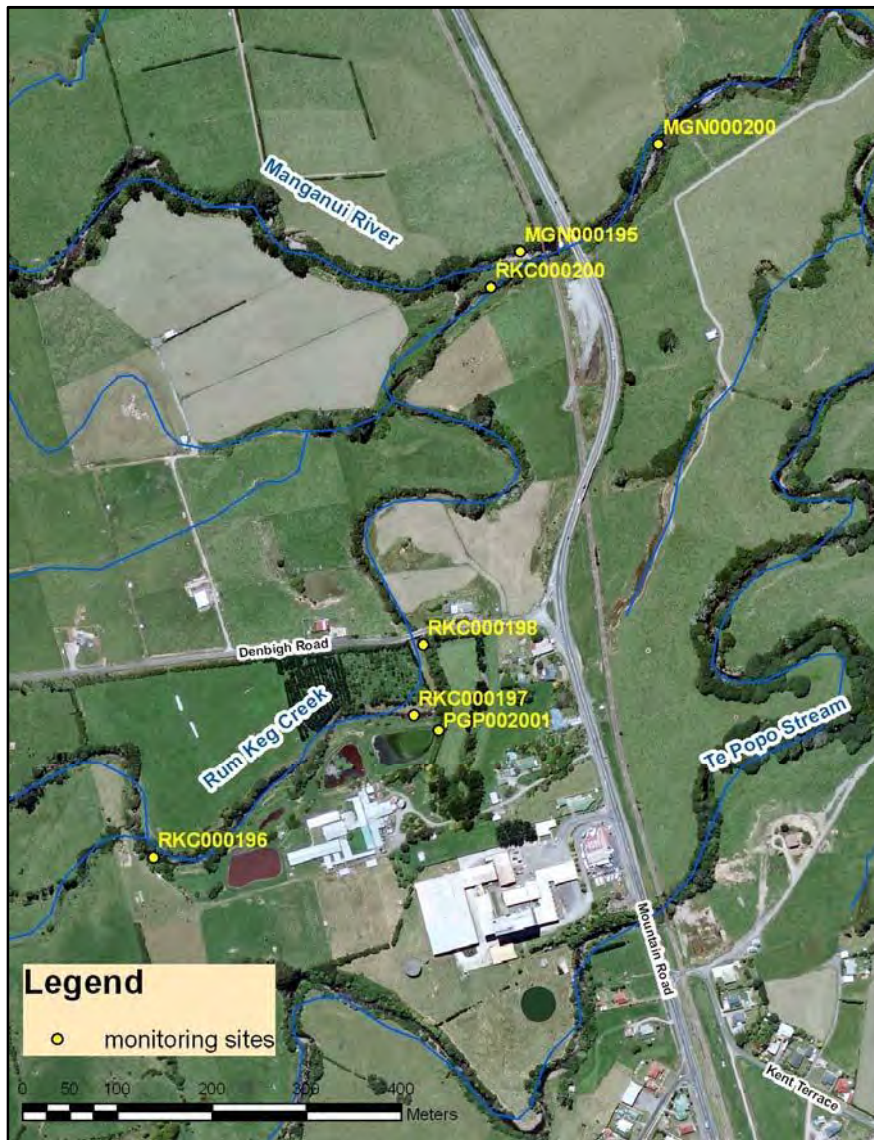


Figure 2 Aerial photograph of monitoring sites

Figure 2 shows the piggery site in relation to the receiving waters of Rumkeg Creek and Manganui River. Te Popo Stream also borders the piggery boundary on the southern side. Environmental monitoring sites are also illustrated in relation to the piggery operation.

Table 2 Location of sampling sites in Rumkeg Creek, a tributary of the Manganui River

Site	Site code	GPS reference	Location
Rumkeg Creek	RKC000197	E1708759 N5650789	20 metres upstream of piggery discharge
Piggery effluent	PGP002001	E1708785 N5650773	Discharge outlet from aerobic lagoon
Rumkeg Creek	RCK000198	E1708769 N5650764	Denbigh Road Bridge (75m d/s of discharge)

April 2015 survey

Results of the survey performed on 09 April 2015 are presented in Table 2. On this occasion the stream was elevated and the ponds' treated wastewater discharge was estimated at about 7.0 L/s.

Table 3 Results from NZ Pure Bred Genetics Ltd and Rumkeg Creek, sampled on 9 April 2015

Site location Site code		Rumkeg Creek u/s RKC000197	Piggery final effluent PGP002001	Rumkeg Creek d/s RKC000198
Parameter	Unit			
Time		1000	1010	1025
Temperature	°C	16.2	17.2	16.4
Conductivity @ 20°C	mS/m	9.0	107	9.1
Chloride	g/m ³	11.2	65.7	11.2
pH		6.7	7.8	7.4
Total carbonaceous BOD ₅	g/m ³	-	150	-
Filtered carbonaceous BOD ₅	g/m ³	1.4	-	2.3
Ammoniacal nitrogen	g/m ³ N	0.164	83.3	0.361
Unionised ammonia	g/m ³ NH ₃	0.0003	2.0	0.0033
Dissolved reactive phosphorus	g/m ³ P	0.044	21.7	0.095
Turbidity	NTU	37	130	32
Suspended solids	g/m ³	45	310	43
Appearance		Turbid green brown	Turbid green	Turbid green brown

These results indicate that the treated wastewater discharge dilution ratio in the stream at the time of sampling was approximately 1:420, well above the minimum ratio of 1:250 required by Special Condition 6 of the consent.

Compliance with Special Condition 2 was well achieved for un-ionised ammonia, the concentration at the mixing zone boundary being 13% of the limit. However, the limit for filtered carbonaceous BOD₅, of 2.0 g/m³ in the stream, was exceeded by a factor of 0.3 g/m³, or 15%. This is not considered to be a breach of consent, when inherent error in the BOD₅ test, and potential for variation in upstream BOD₅ under high flow conditions, are taken into account. Likely variation in upstream water quality is indicated by the unexpected reduction in turbidity across the mixing zone, from 37 to 32 NTU. Furthermore, for a wastewater fcBOD₅ of 150 g/m³, assuming all carbonaceous BOD₅ was filterable, and a dilution of 1:420, a receiving water fcBOD₅

increase of only 0.35 g/m³ was expected, against the measured increase of 0.9 g/m³. The Company complied with the limit on turbidity increase imposed by Special Condition 3 of the consent, as the measured turbidity decreased.

Rumkeg Creek staff gauge reading was recorded as 0.70 m at the time of sampling, equating to a river flow of 11,000 L/s.

The consent holder's discharge records received by Council for 9 April 2015 (as required by Special Condition 7 of the consent) show that the treated wastewater discharge was started at 0800 hours when the Rumkeg Creek staff gauge reading was 0.62 m, equating to a River flow of 6,600 L/s and finishing some two hours later, once the water quality samples had been collected.

Table 4 Summary of treated wastewater analyses from the NZ Pure Bred Genetics Ltd piggery for the period July 2010 to June 2014, compared with results for 9 April 2015

Parameter	unit	N	Range 2010-2014	Median 2010-2014	9 April 2015
Conductivity @ 20°C	mS/m	6	61.6 - 175	158	107
Chloride	g/m ³	6	24.2 - 63.4	48	65.7
pH	pH	6	7.6 - 8.1	7.8	7.8
Total carbonaceous BOD ₅	g/m ³	4	80 - 120	94	150
Ammoniacal nitrogen	g/m ³ N	6	51 - 176	168	83.3
Dissolved reactive phosphorus	g/m ³ P	6	15.2 - 37	34	22
Turbidity	NTU	6	48 - 140	107	130
Suspended solids	g/m ³	6	81 - 210	150	310

Monitoring of wastewater on one occasion during the 2014-2015 year indicated a stronger wastewater than was found in the previous four years, with (relatively) high total carbonaceous BOD₅, suspended solids and chloride concentrations, though higher levels for those parameters were recorded before 2008. Nutrient levels were within the recently recorded ranges (Table 3).

2.1.3 Gauging water flow

To determine flow rates in the Rumkeg Creek a rating curve is maintained by Council. This enables the consent holder to assess treated wastewater discharge compliance with the minimum dilution ratio of 1:250 (one part effluent to two hundred and fifty parts receiving water flow).

The staff gauge installed on the Denbigh Road Bridge provides the consent holder with the stream level (or height) and a rating chart produced by Council shows stream flow rates at any given time. It was not considered necessary to review the rating curve during the 2014-2015 year but it may be reviewed again in the 2015-2016 monitoring period if required.

2.1.4 Treated effluent discharge records

Discharge to water

Special condition 6 of consent **0351-3** requires a minimum dilution rate of 1 part effluent to 250 parts receiving water at the point of discharge and is to be maintained at all times during discharge events.

Special condition 7 of consent **0351-3** requires the consent holder shall monitor and maintain discharge records, including date, time, rate, staff gauge reading and duration of discharge. These records are to be supplied to the Council quarterly or as requested.

During the 2014-2015 monitoring period the Council received from the Company records showing 14 daily discharges (112 hours total discharge time) to the Rumkeg Creek.

These records indicate that the consent holder maintained a minimum dilution rate of 1 part effluent to 250 parts receiving water at the point of discharge on all occasions.

In comparison 7 daily discharges (30 hours total discharge time) were recorded for the 2013-2014 monitoring period and 5 daily discharges were recorded for the 2012-2013 monitoring period. 51 daily discharges were recorded by Meadowvale piggery during the previous 2011-2012 monitoring period.

Discharge to land

Special condition 14 of Consent **0351-3** requires that the consent holder shall monitor and maintain records of discharge, including date, application area, rate and duration of discharge. These records are to be supplied to the Council quarterly or as requested.

Special condition 15 of consent **0351-3** requires the consent holder to maximise discharge to land in preference to discharge to water.

Effluent application rates to land are required to ensure that the effluent application rate does not exceed the recommended 200 kg nitrogen/ha/year.

No discharge to land was carried out during the 2014-2015 monitoring period. Ongoing issues regarding a lease agreement between the consent holder and landowner have prevented the consent holder discharging effluent to land.

The Council strongly encourages pork producers to use systems that discharge pig manure to land in preference to discharging to water. The nitrogen and potassium content of piggery manure is usually the major determinant of land area required.

2.1.5 Liaison with consent holder

During the 2014-2015 monitoring period, the Council liaised with the consent holder (J Cooley) regarding several operational issues, additional to those required in the monitoring programme. These included matters such as consent renewal, odour management, annual draft report, pond maintenance, piggery operations, discharge

effluent record keeping and discharging piggery wastewater to land in preference to water as per the proposed Regional Freshwater Plan.

2.2 Air

2.2.1 Inspections

Air inspections were carried out in conjunction with all the general compliance monitoring inspections at the company's site. Inspections found that only minimal piggery odours were present during one site inspection and no objectionable or offensive odours were recorded beyond the boundary. No dust, smoke or other issues were noted during the inspections of the site.

2.2.2 Results of air monitoring

Special condition 5 of consent **5249-2** requires that discharges shall not give rise to an odour at or beyond the property boundary that is offensive or objectionable.

Odours emitted from normal piggery operations are influenced mainly by weather conditions (i.e. wind direction), effluent treatment areas, solids storage and disposal, irrigating to land and general piggery hygiene operations.

The offensiveness of odour on any particular occasion is reliant on individual perception, Council methods of measurement, and management practices of the pork producer. The Environmental Management System (EMS) deals with piggery operational practices ensuring the effect of odour is taken into account when the pork producer is undertaking activities relating to areas of the piggery.

The routine compliance monitoring inspections found that minimal piggery odour were emanating from around the piggery, solids separator, and oxidation treatment ponds system.

2.3 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 causes 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 monitoring period, the Council had received 12 alleged complaints concerning NZ Pure Bred Pig Genetics Limited regarding odour, sump overflows and discharges of pig effluent to water.

A total of 12 (7 odour and 5 effluent discharge) incidents associated with NZ Pure Bred Genetics Ltd Farm were investigated by Council Officers. No 'objectionable' and or 'offensive' odour was found to be emanating beyond the piggery boundary nor were there any unauthorised discharges from the effluent treatment system discharging into the receiving waters.

However, the offensiveness of unpleasant odour is reliant on individual perception. There will always be varying degrees of odour strength associated with intensive pig, cattle or poultry farming which can not be entirely eliminated.

The Council's policy is to investigate all complaints received within a four hour period.

All Council Inspecting Officers undergo an olfactory calibration which determines their odour perception.

3. Discussion

3.1 Discussion of site performance

During the year the Company demonstrated that a good level of environmental performance and compliance relating to the consents was maintained.

Removing the piggery solids from the raw effluent stream was an improvement on the previous solids removal and storage system and in general had a lot to do with eliminating some of the odour issues that stemmed from around the solids separation area. Solids are now directly transferred and stored into bins which are sold off site as a soil conditioner.

A consent requirement to maximise discharge to land as a preference to water wasn't adhered to. The Council is aware that no treated effluent has been discharged to land because of an ongoing civil dispute between the consent holder and the landowner. There is insufficient land available for this purpose on the landowners property and an agreement will be essential with neighbouring property owners to spray irrigate wastewater to their land in the future. It wasn't considered to be reasonable to enforce this condition in light of the civil case and there being no adverse impact on the environment.

It is a consent requirement that a minimum dilution rate of 1 part effluent (which is the discharge from the final pond) to 250 parts receiving water shall be maintained at all times in the receiving water at the point of discharge during discharge events. This condition remains in force until any change to consent 0351-3 is made.

Although the treated effluent may appear at times to be highly diluted with stormwater, results of the survey performed on 09 April 2015 have shown that the wastewater was found stronger than the previous four years, with (relatively) high total carbonaceous BOD₅, suspended solids and chloride concentrations, though higher levels for those parameters were recorded before 2008.

All officers will comply with the biosecurity measures that have been put in place at the piggery to ensure officers can carry out their duties in full. An example of a biosecurity measure is footbaths, overalls, boot covers, hand washing facilities, and exclusion zones. NZ Pork recommends a stand down period of 24 hours between farm visits although a 48 hour period is recommended where practical. Guidelines recommended by NZ Pork are to prevent the spread of disease. All warranted Council officers have a right enter a site under Section 332 of the RMA for the purpose of inspection to determine whether the RMA, any regulations, a rule of a plan, a resource consent is being complied with.

Consent **0351-3** expired on 1 June 2015 and an application to renew the consent has been applied for. Section 124 of the RMA allows the consent holder to operate on the existing consent until such times a new consent has been granted.

The future Regional Fresh Water Plan (RFP) will have a major effect in the way effluent is discharged. The plan is likely to that discharge to water will cease and that all effluent will be applied to land.

The Consent holder is advised with some urgency to engage a qualified consultant to make recommendations when processing the application for consent in view of the proposed RFWP. The discharge of effluent to land will require the land owner's approval. This should be proceeding with some urgency.

In the 2014-2015 monitoring period, the Council had received 12 alleged complaints concerning the Company regarding odour, sump overflows and discharges of pig effluent to water. All these complaints were investigated and found that no 'objectionable' and or 'offensive' odour was found to be emanating beyond the piggery boundary nor were there any unauthorised discharges from the effluent treatment system discharging into the receiving waters.

3.2 Exercise of air consent

Operations at the piggery had previously (Meadowvale Piggery) resulted in some odour emanating off site from time to time. Odour has been the result of general operations and adverse weather conditions. As the piggery is located on a small site within a residential area in Midhurst 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 RMA or consent conditions.
- A subjective assessment which can vary between individuals, but which must also be based on a 'typical' response.

Location:

- Where the odour is detected from.

- Note type of area (for example, agricultural, residential, or industrial).

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

The pork industries 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.

Seven complaints concerning piggery odour emissions were received by the Council during the 2014-2015 monitoring period. All of these complaints were subsequently investigated by Council officers and found no 'objectionable' and or 'offensive' odour emanating beyond the boundary.

3.3 Evaluation of performance

A tabular summary of the consent holder's compliance record for the year under review is set out in Tables 5 and 6.

Table 5 Summary of performance for consent 0351-3

Purpose: <i>To discharge treated piggery effluent to Rumkeg Creek and land</i>		
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. Concentration limits upon potential contaminants in discharge	Physicochemical sampling	Yes
3. Maximum increase in turbidity after mixing	Physicochemical sampling	Yes
4. Constituents not permitted in receiving water after mixing	Monitoring inspections of receiving water	Yes
5. Operation and maintenance of treatment and discharge system	Monitoring inspections	Yes
6. Minimum dilution rate in receiving waters	Discharge records received by Council	Yes
7. Records of discharge	Discharge records received by Council	Yes
8. Riparian fencing and planting	Monitoring inspections and liaison with the consent holder	N/A
9. Maximum total nitrogen application to land	Not yet accessed by Council	N/A
10. Maximum total potassium application to land	Not yet accessed by Council	N/A
11. Proximity of discharge to dwelling or water body	Monitoring inspections	Yes
12. Contamination of surface water not permitted from land irrigation	Monitoring inspections	Yes

Purpose: <i>To discharge treated piggery effluent to Rumkeg Creek and land</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
13. Extended surface ponding not permitted	Monitoring inspections (sump overflow)	No
14. Discharge to land	Liaison with consent holder	No
15. Maximum discharge to land over water	Records and monitoring inspections	No
16. Optional review process	Consent expired June 2015	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 6 Summary of performance for consent 5249-2

Purpose: <i>To discharge emissions into the air and waste management activities</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Total number of pigs allowed	Liaison with consent holder	Yes
2. Operation and air discharge in accordance with application	Monitoring inspections	Yes
3. Consultation and approval prior to alterations to plant or process	Liaison with consent holder	Yes
4. Minimise emissions and impacts of contaminants discharged to air	Monitoring inspections	Yes
5. Objectionable odour at or beyond the boundary	Monitoring inspection and incident investigations	Yes
6. Optional review provision	Next review June 2021	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 an overall good level of environmental and high level of administrative performance with the resource consents as defined in Section 1.1.4.

3.4 Recommendations from the 2013-2014 Annual Report

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

1. THAT monitoring of air emissions from the NZ Pure Bred Genetics Ltd piggery in the 2014-2015 year continue at the same level as in the 2013-2014 period and that the consent holder minimises the impact of discharges to air by adopting the appropriate odour management and odour control practices.

2. THAT monitoring of wastewater discharges from the NZ Pure Bred Genetics Ltd piggery in the 2014-2015 year continues as in the 2013-2014 period with provision for an extra sampling run to be undertaken if the downstream receiving waters are showing signs of adverse environmental effects.
3. THAT the piggery inspections in the 2014-2015 period remain at four inspections as in the 2013-2014 period and these inspections to be carried out tri-monthly.
4. THAT the consent holder be advised that maximisation of land discharge should be complied with, and that close attention be given to maintenance of sufficient dilution of any discharge of treated wastes in the receiving waters to prevent the development of any 'undesirable biological growths' on the bed of Rumkeg Creek.
5. THAT the consent holder provides the Council with details of the location of areas to be irrigated with piggery wastes and provides records as required by special condition 14 of Consent **0351-3**.
6. THAT the biomonitoring survey for the 2014-2015 period in the Rumkeg Creek discontinues but with provision for biomonitoring to be undertaken if the downstream receiving waters are showing signs of adverse environmental effects.
7. THAT the consent holder provides the Council with details on any future piggery production increase.

Recommendation 1- Was achieved during the routine compliance monitoring inspections. Seven complaints investigated by Council officers found no 'objectionable' and or 'offensive' odour emanating beyond the boundary.

Recommendation 2 - Monitoring the wastewater and receiving waters was carried out on one occasion. The monitoring program allows for two sampling runs but due to the limited discharge opportunities this was not achieved. There was no requirement to undertake an additional sampling run.

Recommendation 3 - Four compliance monitoring inspections were carried out (including one visit to undertake monitoring of the wastewater and receiving water).

Recommendation 4 & 5 - Desludging of the anaerobic or aerobic pond was not required. Spray irrigating effluent to land was not achieved due to an ongoing dispute between the landowner and consent holder.

Recommendation 6 - The Council recommended a biomonitoring survey of the receiving waters was not required as discharge occasions were minimal and stock numbers were significantly decreased.

Recommendation 7 - Achieved - low stock numbers.

3.5 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 consideration of the Company's environmental performance in regard to treated wastewater discharge and its effects, it is proposed that for 2015-2016 that the Council continues at four monitoring inspections of the piggery per year.

It is also recommended that provision be made for physicochemical impact monitoring to continue twice per year, under normal stream flow and wastewater discharge conditions with an extra sampling run to be undertaken if the downstream receiving waters are showing signs of adverse effects, (i.e. presence of sewage fungus in Rumkeg Creek or high waste loadings from the treatment pond system).

It is also recommended that a biomonitoring survey of the Rumkeg Creek is discontinued for the 2015-2016 monitoring period but may again be reinstated depending on the future expansion of the piggery and also the frequency of wastewater discharges to the receiving water.

It is also recommended that the consent holder engages a qualified consultant regarding effluent discharge to land and water in line with the likely changes to the Regional Freshwater Plan and to assist consent renewal processing

3.6 Exercise of optional review of consent

Resource consent 0351-3 (discharge to water and land) was last reviewed in July 2009 and does not provide for any further optional review of the consent. Consent 0351-3 expired in June 2015.

Resource consent 5249-2 (discharge to air) was not reviewed in June 2015. The next review date is June 2021. Consent 5249-2 expires in June 2027.

4. Recommendations

1. THAT monitoring of air emissions from the NZ Pure Bred Genetics Ltd piggery in the 2015-2016 year continue at the same level as in the 2014 - 2015 period and that the consent holder minimises the impact of discharges to air by adopting the appropriate odour management and odour control practices.
2. THAT monitoring of wastewater discharges from the NZ Pure Bred Genetics Ltd piggery in the 2015-2016 year continues as in the 2014-2015 period with provision for an extra sampling run to be undertaken if the downstream receiving waters are showing signs of adverse environmental effects.
3. THAT the piggery inspections in the 2015-2016 period remain at four inspections as in the 2014-2015 period and these inspections to be carried out tri-monthly.
4. THAT the consent holder be advised that maximisation of land discharge should be complied with, and that close attention be given to maintenance of sufficient dilution of any discharge of treated wastes in the receiving waters to prevent the development of any 'undesirable biological growths' on the bed of Rumkeg Creek.
5. THAT the consent holder provides the Council with details of the location of areas to be irrigated with piggery wastes and provides records as required by special condition 14 of Consent **0351-3**.
6. THAT the biomonitoring survey for the 2015-2016 period in the Rumkeg Creek discontinues but with provision for biomonitoring to be undertaken if the downstream receiving waters are showing signs of adverse environmental effects.
7. THAT the consent holder provides the Council with details on any future piggery production increase
8. THAT the consent holder engages a qualified consultant regarding effluent discharge to land and water in line with the potential future RFWP requirements and to assist the Consent renewal processing

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 ³ s ⁻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.
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	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.
MCI	Macroinvertebrate community index; a numerical indication of the state of biological life in a stream that takes into account the sensitivity of the taxa present to organic pollution in stony habitats.
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.
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.
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	<i>Resource Management Act 1991</i> 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.

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

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- Taranaki Regional Council 2012: NZ Pure Bred Genetics Ltd (Piggery) Monitoring Programme Annual Report 2012-2013. Technical Report 2013-04.

Guidelines for the development of On - Farm Biosecurity Standard
NZ Pork August 2013

Taranaki Regional Council 2013: NZ Pure Bred Genetics Ltd (Piggery) Monitoring Programme
Annual Report 2013-2014. Technical Report 2014-24.

Appendix I

**Resource consents held by
NZ Pure Bred Genetics Ltd Piggery**
(For a copy of the resource consent
please contact the TRC consent department)

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

Name of Consent Holder: NZ Pure Bred Pig Genetics Limited
131 York Road
R D 24
STRATFORD 4394

Decision Date (Change): 27 July 2009

Commencement Date (Change): 27 July 2009 (Granted: 5 September 2003)

Conditions of Consent

Consent Granted: To discharge treated piggery effluent from an oxidation pond treatment system into Rum Keg Creek a tributary of the Manganui River in the Waitara catchment (during high flow conditions) at or about (NZTM) 1708745E-5650801N and to discharge treated piggery effluent onto and into land at or about (NZTM) 1708434E-5650801N

Expiry Date: 1 June 2015

Review Date(s): June 2010

Site Location: Mountain Road, Stratford

Legal Description: Lot 2 DP 405477, Lot 2 DP 20963 Pt Sec 125, Sec 22
Manganui Dist Blk XIII Huiroa SD

Catchment: Waitara

Tributary: Manganui
Rum Keg Creek

*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

Condition 1 (changed)

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 applications 1959 and 6284, except as otherwise required or directed by the conditions set out in this resource consent.

Discharge to Water - conditions 2 - 8 (unchanged)

2. 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 Rum Keg Creek to exceed the following concentrations:

Constituent	Concentration
Unionised ammonia	0.025 gm ³
Filtered carbonaceous BOD ₅	2.0 gm ³

3. After allowing for reasonable mixing within a mixing zone extending 50 metres downstream of the discharge point, the discharge shall not give rise to an increase in turbidity of more than 50% in the Rum Keg Creek.
4. That after allowing for reasonable mixing, within a mixing zone extending 50 metres below the discharge point, the discharge shall not give rise to any of the following constituents in the receiving water:
 - i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended solids;
 - ii) any conspicuous change in colour or visual clarity;
 - iii) any emission of objectionable odour;
 - iv) the rendering of fresh water unsuitable for consumption by farm animals;
 - v) any significant adverse effects on aquatic life, habitats or ecology.

Consent 0351-3

5. The consent holder shall operate and maintain the treatment and discharge system to ensure that the conditions of this consent are met.
6. 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.
7. The consent holder shall monitor and maintain records of the discharge, including date, rate, and duration of discharge to the Rum Keg Creek, and the staff gauge reading at the site. These records shall be made available to the Taranaki Regional Council, quarterly (September 30, December 31, March 31, and June 30).
8. The 600 metres section of Rum Keg Creek on the property shall be riparian fenced and planted within 3 years, with at least one third of the planting and fencing to be undertaken each year.

Discharge to Land - conditions 9 - 10 (changed)

9. Over any 12 month period the amount of Total Nitrogen applied to land as a result of the discharge shall be no more than 200 kg per hectare of land used for effluent application over that period.
10. Over any 12 month period the amount of Potassium applied to land as a result of the discharge shall be no more than 100 kg per hectare of land used for effluent application over that period.

Conditions 11 - 15 (unchanged)

11. No contaminants shall be discharged within 150 metres of any dwelling, nor within 50 metres from any bore, well or spring used for water supply purposes, nor within 25 metres of any surface water body.
12. The discharge shall not result in any discharge of contaminants to surface water.
13. The discharge shall not result in any ponding on the surface which remains for more than 3 hours after the discharge has ceased.
14. The consent holder shall monitor and maintain records of the discharge, including date, application area, rate, and duration of discharge. These records shall be made available to the Taranaki Regional Council, quarterly (September 30, December 31, March 31, and June 30).
15. The discharge to land shall be maximised and be used in preference to discharge to water.

Review - condition 16 (unchanged)

16. 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 2010, 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.

Transferred at Stratford on 1 December 2012

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: NZ Pure Bred Pig Genetics Limited
131 York Road
R D 24
STRATFORD 4394

Decision Date: 27 July 2009

Commencement
Date: 27 July 2009

Conditions of Consent

Consent Granted: To discharge emissions into the air from a pig farming activity and associated activities, including solids composting, effluent treatment and irrigation and other waste management activities at or about (NZTM) 1708696E-5650669N

Expiry Date: 1 June 2027

Review Date(s): June 2015, June 2021

Site Location: 3084 Mountain Road, Midhirst, Stratford

Legal Description: Lot 2 DP 405477, Lot 2 DP 20963 Pt Sec 125, Sec 22
Manganui Dist Blk XIII Huiroa SD

*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 2500 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.

Consent 5249-2

6. 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 2015 and/or June 2021, 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.

Transferred at Stratford on 1 December 2012

For and on behalf of
Taranaki Regional Council



Director-Resource Management

Appendix II

Flow rating for Rumkeg Creek

Rumkeg Creek above Confluence

River Height vs Flow Values

Prepared for NZ Pure Bred Genetics Ltd piggery

A staff gauge has been installed on the Rumkeg Creek Denbigh Road Bridge for monitoring of the river level (or height).

Table 1 shows river levels at this bridge and the corresponding flow for each level. All flows are expressed in litres per second.

River Level	Flow (litres/second)	River Level	Flow (litres/second)
0.1	20	0.5	2,726
0.11	24	0.51	2,959
0.12	29	0.52	3,205
0.13	34	0.53	3,465
0.14	39	0.54	3,739
0.15	46	0.55	4,036
0.16	54	0.56	4,350
0.17	62	0.57	4,681
0.18	72	0.58	5,028
0.19	82	0.59	5,393
0.2	95	0.6	5,789
0.21	110	0.61	6,207
0.22	126	0.62	6,647
0.23	144	0.63	7,109
0.24	164	0.64	7,592
0.25	189	0.65	8,098
0.26	216	0.66	8,625
0.27	246	0.67	9,174
0.28	279	0.68	9,744
0.29	315	0.69	10,337
0.3	359	0.7	10,991
0.31	406	0.71	11,674
0.32	459	0.72	12,386
0.33	516	0.73	13,127
0.34	577	0.74	13,897
0.35	648	0.75	14,695
0.36	725	0.76	15,523
0.37	808	0.77	16,380
0.38	897	0.78	17,266
0.39	993	0.79	18,181
0.4	1,100	0.8	19,180
0.41	1,217	0.81	20,219
0.42	1,341	0.82	21,296
0.43	1,474	0.83	22,413
0.44	1,615	0.84	23,568
0.45	1,772	0.85	24,763
0.46	1,939	0.86	25,996
0.47	2,118	0.87	27,269
0.48	2,307	0.88	28,581
0.49	2,507	0.89	29,932



At 0.40m (river level) the flow is

River Level	Flow (litres/second)
0.9	31,365
0.91	32,845
0.92	34,372
0.93	35,946
0.94	37,567
0.95	39,235
0.96	40,950
0.97	42,712
0.98	44,520
0.99	46,376
1.00	48,591