

Stanley Bros Trust (Piggery)

Monitoring Programme

Annual Report

2019-2020

Technical Report 2020-08



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Taranaki Regional Council
Private Bag 713
Stratford

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Executive summary

The Stanley Bros Trust (the Company) operates a piggery located on the corner of 4833 South Road and 24 Arawhata Road, Opunake in the Arawhata catchment. The piggery is a breeder, grower, and finishing operation with the capacity of up to 5,381 pigs and piglets at any one time. The Company holds resource consents which allow the Company to discharge effluent to land via spray irrigation, and the discharging of effluent emissions to air from related practices.

This report for the period July 2019 to June 2020 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess the Company's environmental and consent compliance performance during the period under review. The report also details the results of the monitoring undertaken and assesses the 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. Resource consent 10671-1 allows for the discharge of piggery effluent onto land, and consent 5251-2 relates to the discharge of emissions to air from associated practices of effluent treatment and waste management activities at this site.

During the monitoring period, the Company demonstrated an overall improvement required level of environmental performance.

The Council's monitoring programme for the year under review included three inspections and duplicate effluent samples collected for physicochemical analysis.

The Company's monitoring was limited to a desktop estimate of the likely concentrations of effluent put to land in this monitoring period. It was noted that no effluent testing was undertaken by the Company this monitoring period, and so the estimate was extrapolated from the duplicate sample collected by the Council from the Company effluent pond. The estimate indicated the concentrations of nitrogen and potassium put to land within the consent holder's irrigation areas were compliant with consent defined limits.

The Company did not submit an Effluent Irrigation Management Plan (EIMP), as required by consent, which also requires assessment of effluent.

The Company have since engaged expert opinion in the form of agKnowledge to undertake the creation of the EIMP. This document, as well as effluent testing is proposed to be undertaken during the 2020-2021 monitoring.

As part of the consent to discharge to land the Company must install a minimum of three groundwater monitoring wells. These wells are proposed to monitor the quality of the groundwater within the irrigation areas. The Company requested that the installation date for these wells be deferred for a period of time to allow for greater stability within the pork industry. The Council has since deferred the installation of these wells till 31 August 2021. In the interim the Council will commence surface water monitoring of the Arawhata Stream.

The Company irrigated to 100 ha as required by consent, however, they only recovered 60 ha of cut and carry while the consent determined that 100 ha should be recovered.

There were four unauthorised incident/s recording non-compliance in respect of this consent holder during the period under review. These are presented above.

During the year, the Company demonstrated an improvement required level of environmental and administrative performance with the resource consents.

For reference, in the 2019-2020 year, consent holders were found to achieve a high level of environmental performance and compliance for 81% of the consents monitored through the Taranaki tailored monitoring

programmes, while for another 17% of the consents, a good level of environmental performance and compliance was achieved.

In terms of overall environmental and compliance performance by the consent holder in this monitoring year. This report, which is the first report by the Council for the Company, demonstrates that there is room for improvement by the Company.

This report includes recommendations for the 2020-2021 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 2019 to June 2020 by the Taranaki Regional Council (the Council) on the monitoring programme associated with resource consents held by Stanley Bros Trust Piggery (the Company). The Company operates a piggery situated on the corner of 24 Arawhata Road, and 4833 South Road (State Highway 45), Opunake, in the Arawhata 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 discharge of water within the Arawhata catchment, and the air discharge permit 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 1st 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:

- consent compliance monitoring under the and the Council's obligations;
- the Council's approach to monitoring sites through annual programmes;
- the resource consents held by the Company in the Arawhata 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 2020-2021 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); and
- 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 Company, this report also assigns them a rating for their environmental and administrative performance during the period under review.

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 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 during investigations of incidents reported to the Council by a third party 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 during investigations of incidents reported to the Council by a third party. 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 during investigations of incidents reported to the Council by a third party. 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 2019-2020 year, consent holders were found to achieve a high level of environmental performance and compliance for 81% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 17% of the consents, a good level of environmental performance and compliance was achieved.¹

¹ The Council has used these compliance grading criteria for 16 years. They align closely with the 4 compliance grades in the MfE Best Practice Guidelines for Compliance, Monitoring and Enforcement, 2018

2 Process description

The Company own and operate a piggery located on the corner of 24 Arawhata Road and 4833 South Road (State Highway 45), Opunake. The piggery and surrounding land owned by the Company covers 133 ha, of which 105 ha is available for effluent irrigation.

The piggery is a breeder, grower and finishing operation holding up to a maximum of 5,381 kg pig equivalents onsite at any one time (Table 1). The discharge is made up of effluent and wash water from the piggery operation.

Up to early October 2018 the site was ran as a piggery and a dairy farm with 270 dairy cows. In October 2018 the dairy herd was sold and only a small amount of grazing stock remain on the farm.

The existing piggery is made up of seven purpose built piggery sheds which are ventilated with roof fans and side vents. The sheds are in good condition, with impervious wall cladding. The floor is impervious with concrete, wooden slats, and plastic flooring panels. The layout of the sheds is generally across the prevailing winds and there are side ventilation exhausts with automatic control. The configuration and locality of the sheds (along with the exhaust stacks) generally enhance dispersion of odours and dust from the sheds.

Pens are flushed daily with water and the effluent is pumped to a series of storage ponds before land application. The pond is stirred as effluent is sprayed onto pastures via a travelling rain gun.

There are two storage ponds on the property, pond 1 has a storage capacity of 24,500 m³, and pond 2 has a storage capacity of 19,320 m³.

The existing piggery, ponds, and irrigation areas in relation to the property are shown in Figure 1, and Figure 2



Figure 1 Location of Stanley Bros Trust Piggeries current buildings and effluent ponds



Figure 2 Stanley piggeries in relation to the Arawhata Stream and Unnamed Tributaries

During the monitoring period, the Company proposed an expansion for the existing piggyery operation from 4,000 to 5,000 pigs (or 5,381, 50 kg pig equivalents). The number and approximate weights of the maximum pigs proposed is provided in Table 1.

Table 1 Proposed max piggyery composition

Type of pigs	No. of pigs	Average weight (kg)	Total weight (kg)	50 kg equivalent pigs
Sows	500	162	81,000	1,620
Growers	1,525	65	99,125	1,982
Store pigs	1,487	44	65,428	1,309
Weaners	1,470	18	23,520	470
Total	4,982			5,381

This expansion included an extension for an additional five pig housing sheds and effluent ponds. The extended piggyery operation and ponds will occupy approximately 3.5 ha of the site.

The new sheds will be a continuation of the buildings already on site. They will be constructed with freezer panel and concrete. The new sheds required are:

- 3 x 24 crate sow farrowing rooms;
- 1 x 100 sow shed²; and
- 1 x 400 pig grower shed.

² The Company have since communicated by annual report that their plan to increase the number of sows to 500 has been abandoned. The farrowing sheds (three) will be completed.

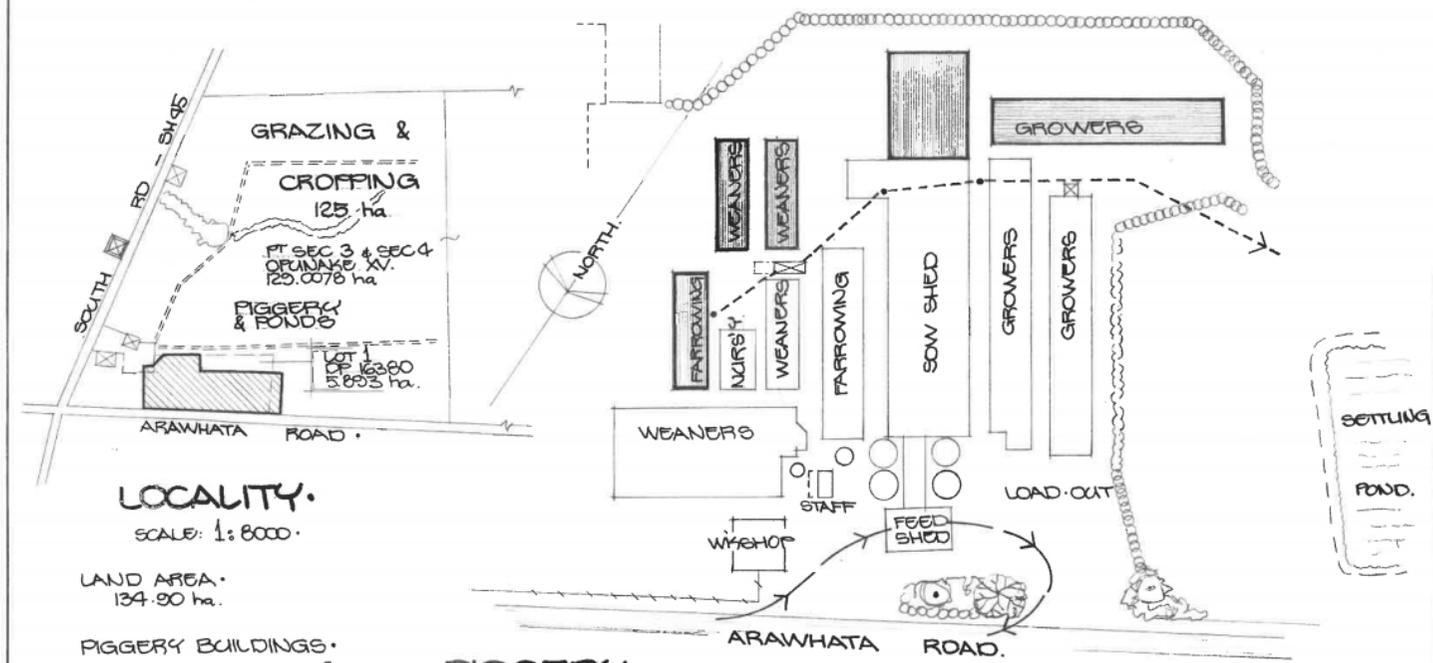
The addition of these sheds will allow for re-organisation of the farm's younger pigs generally to the north and older pigs to the south (further from the closest dwelling). The shed expansion and proposed area for effluent discharge are displayed in Figure 3 and Figure 4.



Figure 3 Existing and proposed piggery buildings and effluent storage ponds

STANLEY PIGGERY.
ARAWHATA ROAD - OAONU I.
ADDITIONS - 2019.
 PRELIMINARY STUDY 3 - APRIL 2019

IHD 506/8.P2-2.



LOCALITY.
 SCALE: 1:8000.

LAND AREA.
 134.90 ha.

PIGGERY BUILDINGS.
 EXISTING - 4,100 m²
 ADDITION - 1,500 m²

STOCKING.
 INCREASE SOW N^o BY 100.

PIGGERY.
 SCALE: 1:800.

IAIN HAWKEN DESIGN.
 86 GOVERNMENT AVE.
 NEW PLYMOUTH.
 PH: 06-753-5061 M: 021-2104365.
 designhawk@xtra.co.nz

Figure 4 Proposed piggyery buildings in relation to the existing sheds

This expansion was accepted by the Council, and a change of conditions to consent 5251; allowing for the maximum amount of pigs at one time to increase from 4,000 to 5,000 was allocated on the 6th August 2019, and a change in consent 10671 permitting effluent discharges from pigs only per the removal of the dairy stock.

In the annual monitoring report supplied from the Company to the Council, the Company discussed that they decided to no longer increase their sow numbers as per consent. Currently, the allowed stock density in sheds has been significantly reduced by revisions to animal welfare regulation changes. The new sheds will have a lower stock density than the previous existing sheds. If farrowing crates are outlawed in New Zealand the Company stated that they may have to close their operation as it will no longer be financially viable. However, the Company has decided to complete the build on the three farrowing sheds already consented which have higher welfare conditions.

The number of approximate weights and stock number for the 2019-2020 period (Table 2) were less than the proposed number and weights set out in Table 1 with the total number of pigs decreasing by 1,266 and the amount of 50 kg equivalent pigs decreasing by 1,235.

Table 2 Piggery stock inventory 2019-2020

Type of pigs	No. of pigs	Average weight (kg)	Total weight (kg)	50 kg equivalent pigs
Sows	411	162	66,582	1,331
Growers	1,153	65	74,945	1,499
Store pigs	1,120	44	49,280	986
Weaners	1,032	16	16,512	330
Total	3,716			4,146

Approximately 18 m³ of effluent and waste water is discharged onto land on a daily basis. The proposed increase of pigs would have brought this to 22 m³ per day. Pens are flushed daily and the effluent is pumped into the storage ponds where it is stirred before and during land application. Approximately 105 ha is used for spray irrigation on the property. Since the closure of the dairy shed, effluent volume has reduced by 60%, increasing available storage to up to three months.

The Company also planned to undertake 'cut and carry' operations during this monitoring period. Approximately 29 ha of pasture as bialage and 31 ha of maize silage will be grown and sold off-farm. The Company has also expressed interest in other 'cut and carry' operations for future years. Effluent will be applied after harvesting to maintain soil fertility for future crops.

Key determinants with effluent irrigation are potassium and nitrogen levels. The report produced by agKnowledge estimated typical values for freshly voided manure characteristics based on 3.25 kg of manure per standard pig equivalent, and predicted nutrient loading rates based on these estimates with the inclusion of irrigation to 105 ha of land, and 30% of nitrogen gaseous losses. The report concluded that the nutrient input from the piggery and the 'cut and carry' operation is not excessive as harvested crops counter the high nutrient inputs from the piggery.

2.1 Resource consents

The Company holds two resource consents, the details of which are summarised in the table below. Summaries of the conditions attached to each permit are set out in Section 4.3 of this report.

A summary of the various consent types issued by the Council are included in Appendix I, as are copies of all permits held by the Company during the period under review.

Table 3 Summary of resource consents held by Stanley Bros piggery

Consent number	Purpose	Granted	Review	Expires
<i>Air discharge permit</i>				
5251-2.2	To discharge emissions into the air from pig farming operations and associated effluent treatment and waste management activities	2019	2024	2030
<i>Discharges to land permit</i>				
10671-1	To discharge piggery effluent onto land by spray irrigation	2019	2021	2030

2.2 Monitoring programme

2.2.1 Introduction

Section 35 of the RMA sets obligations upon the Council to gather information, monitor and conduct research on the exercise of resource consents within the Taranaki region. The Council is also required to assess the effects arising from the exercising of these consents and report upon them.

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 site consisted of three primary components.

2.2.2 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;
- discussion over monitoring requirements;
- preparation for any consent reviews, renewals or new consent applications;
- advice on the Council's environmental management strategies and content of regional plans; and
- consultation on associated matters.

2.2.3 Site inspections

The Company's site was visited on three occasions during the monitoring period. With regard to consents for the discharge of piggery effluent to land, the main points of interest were plant processes with potential or actual discharges to receiving watercourses, including contaminated stormwater and process wastewaters.

During one of the inspections, a water analysis sample site at the oxidation pond was established for monitoring of the effluent chemistry.

Sources of data being collected by the Company 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 far as practical, inspections related to air emissions were integrated with inspections undertaken for other purposes for example inspection of the oxidation ponds. The air monitoring component focuses on processes with associated actual and potential emission sources and characteristics, including potential odour.

2.2.4 Chemical sampling

The Council undertook sampling of the piggery effluent discharge from the site oxidation pond (PGP001003). Duplicate samples were collected either side of the discharge pipe.

The discharges were analysed for the analytes provided in Table 4.

Table 4 Chemical sampling analytes

Location	Analytes
Discharges PGP001003	Chloride Conductivity @ 25°C Total Potassium* Total Sodium Nitrate-N + Nitrite-N pH Temperature Total Kjeldahl Nitrogen* Total Nitrogen* Total Phosphorus
* These were analysed to establish application rates to land	

Ground water monitoring of the irrigation areas is a requirement under consent 10671-1.1, proposed are a minimum of three piezometer monitoring bores. These were required to be installed before 31 January 2020³.

³ The Company requested that the installation date be deferred for a period of time owing to instability within the pork industry. The Council deferred the installation date until the 31 August 2021

3 Results

3.1 Water

3.1.1 Inspections

The piggery was inspected on three separate occasions during the 2019-2020 monitoring period. These inspections were carried out on 30th August 2019, 5th March 2020, and the 29th May 2020.

During the three inspections no objectionable or offensive odours were detected beyond the boundary. The only noticeable odours were detected emanating upwind immediately adjacent to the road on the 5th March 2020, however there were no potential affected parties nearby on all occasions. The oxidation ponds on all three occasions produced minimal odours.

Throughout the year the storage ponds appeared to be in good condition with the main pond observed to hold plenty of capacity across the three inspections. On the 5th March 2020 inspection, the spray irrigator had been running that morning with the pasture applied area coping with the applications. Only a small area contained solid effluent due to the irrigator being blocked earlier on. On the same occasion some pooling was noted by the irrigator due to a prior leakage.

Overall the piggery looked to be well maintained and well managed, and was compliant with the majority of consented conditions at the time of inspections. However, special conditions 13 and 14 of consent 10671-1.1, were not compliant.

Special condition 13 from consent 10671-1.1 required the discharge to land to be exercised in accordance with an Effluent Irrigation Management Plan (EIMP). At the time of report composition this document has not been provided. It is noted that the Company have engaged agKnowledge to aid the in the development and operation of said plan.

Special condition 14 from consent 10671-1 requires ground water monitoring bores to have been installed by the end of January 2020. However, in this specific case the applicant requested this date be deferred due to potential instability within the piggery industry. To this end the Council issued an abatement notice which deferred the construction of the monitoring wells until 31 August 2021.

3.1.2 Results of discharge monitoring

The Arawhata Stream and two unnamed tributaries of this stream run through the consent holder's property. During this monitoring period the Council collected a duplicate sample of the piggery operation's effluent at discharge point (PGP001003, Photo 1, Table 5 and 6).

Table 5 Location of piggery discharge

Site	Site Code	GPS reference	Location
Piggery effluent	PGP001003	E1670546 N5637153	Discharge outlet from effluent storage pond



Photo 1 Aerial image of the piggery effluent collection location

Results of the survey performed on 5 March 2020 are presented in Table 6. On this occasion effluent was pumped onto land the morning of inspection.

Table 6 Results of the piggery effluent compliance survey 5 March 2019

Parameter	Units	Piggery discharge	Piggery discharge	Average
Site code		PGP001003	PGP001003	
Time of collection	hrs	0850	0850	
Chloride	g/m ³	144	156	150
Conductivity @ 25°C	mS/cm	468	494	481
Total Potassium	g/m ³	280	280	280
Total Sodium	g/m ³	102	100	101
Nitrate-N + Nitrite-N	g/m ³	<0.10	<0.10	0.05
pH	pH	6.6	6.6	6.6
Temperature	°C	23.4	16.4	19.9
Total Kjeldahl Nitrogen	g/m ³	690	710	700
Total Nitrogen	g/m ³	690	710	700
Total Phosphorus	g/m ³	200	230	215

The effluent was assessed to gain an understanding of the likely concentrations of certain parameters put to land. Primarily two parameters; total nitrogen and potassium, are of interest with respect to consent 10671-1.1. There is a consent requirement which limits the concentration of these two analytes to land. These conditions require the following:

Condition 10 of 10671-1.1 requires that total nitrogen put to land through the piggery effluent application must not exceed:

300 kg per ha in any 12 month period for 'cut and carry areas'; or

100 kg per ha in any 12 month period for any other land (including grazed pasture).

Condition 11 requires the total potassium put to land shall not exceed:

300 kg per ha in any 12 month period for 'cut and carry areas'; or

100 kg per ha in any 12 month period for any other land (including grazed pasture).

3.1.3 Provision of consent holder data

3.1.3.1 Land application of effluent

Land application of piggery effluent was provided in terms of application rate and location (paddock number and size) by the consent holder this monitoring period. There was no supporting effluent testing provided by the consent holder this monitoring period⁴, as such the Council undertook a rough estimate of the effluent loading by paddock, utilising the duplicate samples collected from the pond during the March 2020 inspection.

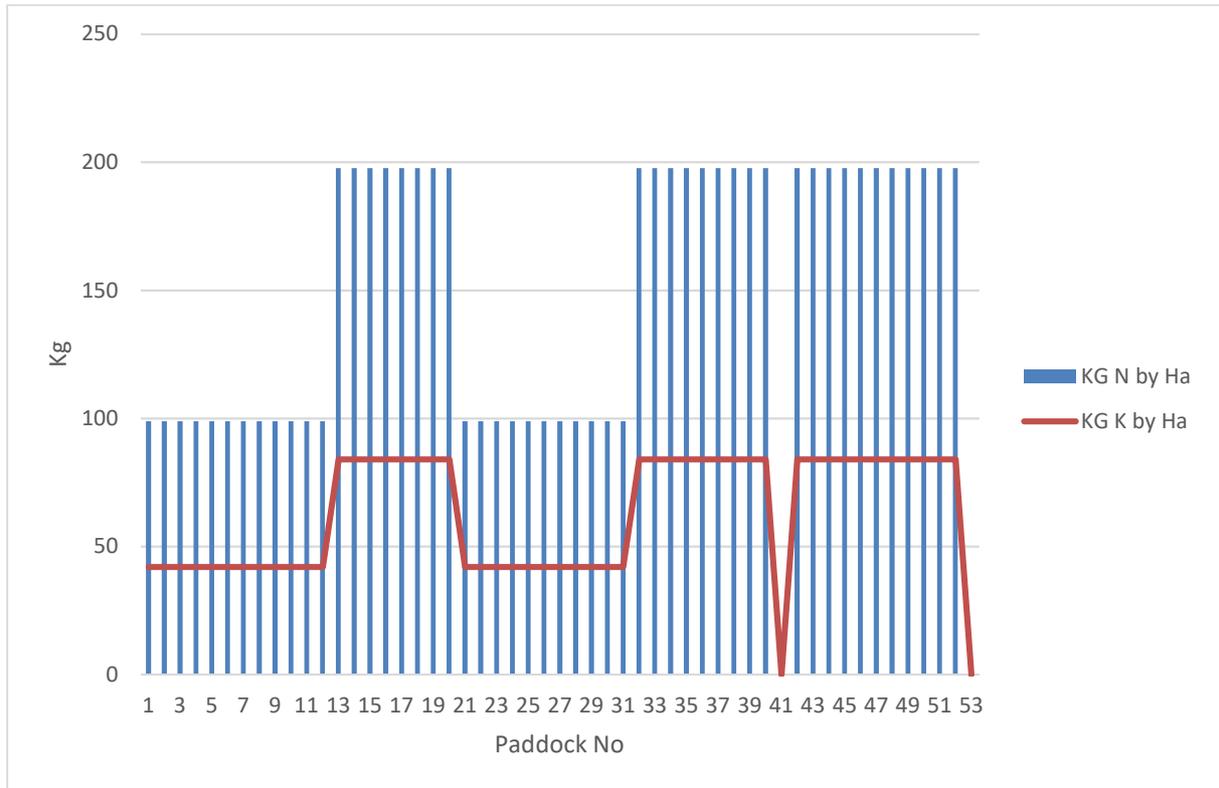
The extrapolated data is provided in the following Table 7.

The estimate indicated the consent holder was in compliance with conditions 10 and 11 of consent 10671-1.1.

Total nitrogen loading to land through the discharge of effluent did not exceed 200 Kg N ha in the cut and carry area, while total potassium discharged did not exceed 100 kg K ha, also in the cut and carry areas. The reported concentrations of both analytes were below the maximum allowable concentrations (consent 10671-1.1, conditions 10 and 11) to be discharged to land through the effluent within a monitoring period (1 July 2019– 30 June 2020).

⁴ The consent holder will begin regular effluent testing in the upcoming monitoring period to add greater confidence to the concentrations of specific analytes put to land in the 2020-2021 monitoring period.

Table 7 Estimated irrigation fluid loading in kg N and K per ha 2019-2020 by paddock



In addition to the application rate information provided above, the Company also added additional synthetic fertiliser by helicopter to 31 ha of maize, which is summarised in Table 8. The totals of the cut and carry operation undertaken by the Company are provided in the following Table 9.

Table 8 Total nitrogen and potassium applied in addition to effluent 2019-2020

Parameter	Application per hectare (kgs)	Area (ha)
Total nitrogen (maize)	300	31
Total potassium	0	0

3.1.3.2 Cut and carry operation

The farm is divided into 3 blocks based on land use:

- below cowshed- 37 ha of flat land on volcanic soils, long term history of receiving combined cow and piggery effluent;
- below house- 59 ha of flat land on volcanic soils, short term history of receiving combined cow and piggery effluent; and
- beach/cliff tops- 37 ha of flat/rolling land with high sand component. No history of receiving effluent but now has hydrants in place to allow applications of effluent.

The Company proposed to undertake a 'cut and carry' operation on the farm. Crops planned for sale off-farm for the 2019/20 season are detailed below:

- 66 ha pasture (as baleage); and
- 39 ha maize silage.

Condition 9 of consent 10671-1.1 states the following:

'The consent holder shall ensure that the effluent is discharged to at least 100 ha of land that is not grazed and that is planted in crops that are removed from the property i.e. a 'cut and carry' operation. It may also be applied on additional areas that are grazed.'

A review of the cut and carry data provided by the Company in this monitoring period (Table 9) indicated that cut and carry was only undertaken across 60 ha, opposed to the consent requirement for removal of cut and carry from 100 ha.

Table 9 Cut and carry operation 2019-2020

Maize silage	31 ha	655,529 kg D M
Annual grass silage	29 ha	125,005 kg D M
Round bale grass silage	Size 12	612
Round bale grass hay	Size 15	795

3.1.3.3 Pig stock inventory

Required by condition 1 of consent 10671-1.1 is that the discharge of effluent to land within the consent holders application area shall not exceed effluent produced by more than 5,381 (50 kg) pig equivalents. The equivalent number of pigs was provided by the consent holder and is detailed in Table 10. The data provided by the consent holder indicated the Company were in compliance with condition 1 of consent 10671-1.1.

Table 10 Inventory of stock

Type of pigs	No. of pigs	Average weights	Total weights	50 kg equivalents
Sows	411	162	66,582	1,331
Light pork	1153	65	74,945	1,499
Store pigs	1120	44	49,280	986
Weaners	1032	16	16,512	330
Compliance with condition 1 of consent 10671-1.1 (<5,381 50 Kg equivalents)				4,145

3.1.4 Groundwater monitoring

There is a requirement for groundwater monitoring wells to be installed as per condition 14 of consent 10671-1.1.

The consent holder requested that these be deferred for a period of time to enable some further stability within the piggery industry. In order to enable this to occur the Council placed the consent holder under an abatement notice to legitimise the on-going non-compliance with the non-installation of the groundwater monitoring wells. The abatement notice requires the consent holder to install the groundwater monitoring wells by 31 August 2021.

The Council proposes in the interim to collect surface water monitoring samples of the Arawhata Stream. These will be collected in the upcoming monitoring period.

3.2 Air

3.2.1 Inspections

As far as practicable, inspections relating to air emissions were integrated with inspections undertaken for other purposes.

3.2.2 Results of discharge monitoring

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

Odours emitted from normal piggery operations are generally influenced by weather conditions (i.e. wind direction), effluent treatment, pond management, irrigating sludge to land and general piggery hygiene practices.

The offensiveness of odour at any time is reliant on individual perception, Council methods of measurement, and practices of the pork producer.

All inspections that were carried out during the monitoring period found 'normal to slightly noticeable' piggery type odour emanating from the piggery specifically, or directly adjacent to the state highway road, however these were not offensive. In general, wind conditions were light to medium in strength and coming from all quarters. No odour emissions were 'noted' beyond the perimeter of the property boundary. Therefore, odours were restricted to the property and not considered likely to impact neighbouring properties.

3.3 Incidents, investigations, and interventions

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.

For all significant compliance issues, as well as complaints from the public, the Council maintains a database record. The record includes events where the individual/organisation concerned has itself notified the Council. Details of any investigation and corrective action taken are recorded for non-compliant events.

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 individual/organisation is indeed the source of the incident (or that the allegation cannot be proven).

Table 11 below sets out details of any incidents recorded, additional investigations, or interventions required by the Council in relation to the Company's activities during the 2019-2020 period. This table presents details of all events that required further investigation or intervention regardless of whether these were found to be compliant or not.

Table 11 Incidents, investigations, and interventions summary table

Date	Details	Compliant (Y/N)	Enforcement Action Taken?	Outcome
05/03/2020	Failed to construct three piezometers per consent 10671-1.1 special condition 14	N	Abatement notice issued	Construction deferred till 31 August 2021
09/05/2020	A complaint was received with respect to concerns raised from a member of the public, regarding the operation of the piggery effluent disposal system.	Y	Compliant at time of inspection	Nil
30/06/2020	No EIMP provided as required by November 2019 Condition 13 of consent 10671-1.1	N	No, marked down in report	Communicated that effluent testing and the EIMP document is being developed by agKnowledge.
30/06/2020	Cut and carry not recovered from 100 ha as required by consent 10671-1.1, condition 9. Only 60 ha cut and carried.	N	No, marked down in report	Pending

4 Discussion

4.1 Discussion of site performance

This is the first monitoring report by the Council on the piggery owned and operated by the Company. During the monitoring period covered by this report the inspections carried out by Council officers found the piggery to be a well-managed operation.

All effluent oxidation and storage facilities and disposal processes were adequately maintained. No complaints were received by the Council during the 2019-2020 monitoring period.

A building consent had also been granted to enable the start of new piggery buildings.

However, from an administrative perspective, the piggery effluent analysis was not supplied by the Company and the associated Effluent Irrigation Management Plan (EIMP) has yet to be supplied to the Council, though both are required by the consent.

It is noted that the consent holder has since engaged expert opinion on these matters and intends to satisfy the consent condition in the upcoming monitoring period. This is later than required by the consent which stipulated preparation of the EIMP by 1 November 2019.

The consent holder provided data on paddock size and associated application rates across the consented irrigation area. The consent holder applied effluent to over 100 ha which is in compliance with consent. Consent 10671-1.1 requires effluent to be applied to an area of at least 100 ha.

However, the consent also requires that of the 100 ha irrigated with effluent, cut and carry must be recovered from the 100 ha. In this monitoring period the Company only recovered 60 ha of cut and carry.

Estimated effluent paddock loading indicated that the consent holder did not exceed the total nitrogen or potassium effluent loading rates within the application areas. Further analysis of the effluent is proposed in the upcoming monitoring period. This will assess the variation within the effluent throughout the year, and will allow a more accurate representation of the concentrations of piggery effluent put to land.

The groundwater monitoring well installation deadline has been extended to the 31 August 2021 at the request of the Company. The Council will undertake spot surface water sampling of the Arawhata Stream in the upcoming monitoring period prior to the installation of the groundwater monitoring wells.

Overall, there remains a number of items which require resolution in the 2020-2021 monitoring period and the consent holder has communicated they intend to resolve these.

4.2 Environmental effects of exercise of consents

During the monitoring period, the Council recorded no significant effects on the receiving environment that had related to the Company's consented discharges.

Though noted was the limited means of assessing environmental effects in this period, which was strictly inspection based. Proposed are groundwater monitoring wells to assess the effect, if any on the groundwater. However the Company requested that the installation be deferred until August 2021.

In the 2020-2021 monitoring period surface water monitoring of the Arawhata Stream will commence prior to the installation of the deferred monitoring wells.

4.3 Evaluation of performance

A tabular summary of the consent holder's compliance record for the year under review is set out in Tables 12 and 13.

Table 12 Summary of performance for consent 5251-2.2

Purpose: To discharge emissions into the air from pig farming operation and associated practices including effluent treatment and other waste management activities		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Maximum allowable number of pig equivalents	Liaison with Company	Yes
2. Adoption of best practical option to avoid or minimise adverse effects	Liaison with Company and inspection	Yes
3. Consultation and approval prior to alterations to plant and process	Liaison with Company	N/A
4. Minimisation of impact and emissions through use of equipment and suitable methods	Monitoring Inspections	Yes
5. Operation of piggery in accordance with original application	Monitoring Inspections	Yes
6. Objectionable odour at site boundary not permitted	Monitoring inspections	Yes
7. Optional review provision	Consent expires June 2030- next review June 2024	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

N/A = not applicable

Table 13 Summary of performance for consent 10671-1.1

Purpose: To discharge piggery effluent onto land by spray irrigation		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Effluent discharge no more than allowable number of pig equivalents	Liaison with Company and review of records	Yes
2. Minimisation of nutrient leaching to groundwater	Liaison with Company and review of records	N/A
3. No overflow of effluent from disposal system	Liaison with Company and inspection	Yes, though on one occasion a leak had been fixed which had resulted in some ponding by the irrigator.
4. Sufficient storage available in effluent storage ponds	Liaison with Company and Inspection	Yes
5. No effluent surface ponding exceeding 30 minutes	Monitoring Inspection	Yes, though some ponding by irrigator on one occasion
6. Sodium adsorption ratio of wastewater shall not exceed 15	Not assessed in this monitoring period	N/A
7. Effluent applied in consented areas and away from dwellings/rivers	Monitoring Inspection	Yes
8. No spray drift beyond property boundary	Monitoring Inspection	Yes
9. Effluent discharged onto land not grazed are planted as crops and removed (cut and carry) or grazed	Liaison with Company and Inspection	No, only 60 ha cut and carried opposed to the consented 100 ha
10. Total nitrogen applied on land will not exceed 400 kg in 12 month cut and carry areas, or 200 kg in 12 month pasture areas	Liaison with Company and review of records with estimate of loading from duplicate sample from effluent pond	Yes

Purpose: To discharge piggery effluent onto land by spray irrigation		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
11. Total potassium applied on land will not exceed 300 kg in 12 month cut and carry areas, or 100 kg in 12 month pasture areas	Liaison with Company and review of records with estimate of loading from duplicate sample of effluent pond	Yes
12. Accurate records of applied effluent volume, rate, area, method, and type of crop grown	Liaison with Company	Yes
13. Consent exercised in accordance with Effluent Irrigation Management Plan	Liaison with Company and Inspection	No, plan not yet developed
14. Installation of three piezometers by 31 January 2020 for groundwater quality monitoring	Liaison with Company and Inspection	No
Overall assessment of consent compliance and environmental performance in respect of this consent		Improvement required
Overall assessment of administrative performance in respect of this consent		Improvement required

Table 14 Evaluation of environmental performance over time

Year	Consent no	High	Good	Improvement req	Poor
2019-2020	5251	1	-	-	-
	10671		-	1	-
Totals		1	-	1	-

During the year, the Company demonstrated an improvement required level of both environmental and administrative performance with the resource consents as defined in Section 1.1.4.

4.4 Alterations to monitoring programmes for 2020-2021

In designing and implementing the monitoring programmes for air/water discharges in the region, the Council has taken into account:

- the extent of information already made available through monitoring or other means to date;
- its relevance under the RMA;

- the Council's obligations to monitor consented activities and their effects under the RMA;
- the record of administrative and environmental performances of the consent holder; and
- reporting 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 exercising resource consents.

It is proposed that for the 2020-2021 monitoring period in relation to the compliance monitoring programme for the consent holder the addition of surface water samples be collected from the Arawhata Stream. This will likely take effect in the second half of the 2020-2021 monitoring period.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the site in question. The Council reserves the right to subsequently adjust the programme from that initially prepared, should the need arise if potential or actual non-compliance is determined at any time during 2020-2021.

4.5 Exercise of optional review of consent

Resource consent 10671-1.1 provides for an optional review of the consent in June 2021, and at 3-yearly intervals thereafter. Condition 15 allows the Council to review the consent, if there are grounds that require the Council to deal with any adverse effects on the environment from the resource consent, and to address any significant increase in nutrient concentration in groundwater. Based on the results of monitoring in the year under review, it is considered that the current consent is fit for purpose.

5 Recommendations

1. THAT in the first instance, monitoring of consented activities at the Stanley Brothers Trust Piggery in the 2020-2021 year be amended from that undertaken in 2019-2020, by the inclusion of surface water monitoring of the Arawhata Stream.
2. THAT the Company should provide an EIMP and associated testing, as required by consent 10671-1.1.
3. THAT the installation of the groundwater monitoring wells, as required by consent 10671-1.1 be installed by 31 August 2021.
4. THAT should there be issues with environmental or administrative performance in 2020-2021, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.
5. THAT the option for a review of resource consent 10671-1.1 in June 2021, as set out in condition 15 of the consent, not be exercised, on the grounds that the conditions are fit for purpose

Glossary of common terms and abbreviations

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

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.
Conductivity	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 25°C and expressed in $\mu\text{S}/\text{cm}$.
DO	Dissolved oxygen.
DRP	Dissolved reactive phosphorus.
Fresh	Elevated flow in a stream, such as after heavy rainfall.
$\text{g}/\text{m}^2/\text{day}$	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.
Incident register	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.
$\mu\text{S}/\text{cm}$	Microsiemens per centimetre.
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 mineral matter (hydrocarbons).
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.
Temp	Temperature, measured in °C (degrees Celsius).
Turb	Turbidity, expressed in NTU.

For further information on analytical methods, contact a Science Services Manager.

Bibliography and references

Ministry for the Environment. 2018. Best Practice Guidelines for Compliance, Monitoring and Enforcement under the Resource Management Act 1991. Wellington: Ministry for the Environment.

Stanley Bros Trust Annual Monitoring Report Year 2019-2020.

Appendix I

Resource consents held by The Company

(For a copy of the signed resource consent
please contact the TRC Consents department)

Water abstraction permits

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. Permits authorising the abstraction of water are issued by the Council under Section 87(d) of the RMA.

Water discharge permits

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. Permits authorising discharges to water are issued by the Council under Section 87(e) of the RMA.

Air discharge permits

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. Permits authorising discharges to air are issued by the Council under Section 87(e) of the RMA.

Discharges of wastes to land

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. Permits authorising the discharge of wastes to land are issued by the Council under Section 87(e) of the RMA.

Land use permits

Section 13(1)(a) of the RMA stipulates that no person may in relation to the bed of any lake or river use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of any structure in, on, under, or over the bed, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations. Land use permits are issued by the Council under Section 87(a) of the RMA.

Coastal permits

Section 12(1)(b) of the RMA stipulates that no person may erect, reconstruct, place, alter, extend, remove, or demolish any structure that is fixed in, on, under, or over any foreshore or seabed, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations. Coastal permits are issued by the Council under Section 87(c) of the RMA.

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

Name of Consent Holder:	Stanley Bros Trust (Trustees: Ronald Thomas Stanley & Noel Henry Stanley) 4789A South Road RD 31 Opunake 4681
Decision Date (Change):	6 August 2019
Commencement Date (Change):	6 August 2019 (Granted Date: 12 September 2012)

Conditions of Consent

Consent Granted:	To discharge emissions into the air from a pig farming operation and associated practices including effluent treatment and other waste management activities
Expiry Date:	1 June 2030
Review Date(s):	June 2024
Site Location:	24 Arawhata Road, Opunake
Grid Reference (NZTM)	1670475E-5637131N

*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. The maximum number of pigs on the property, at any one time, shall not exceed 5,000 pigs (or 5,381, 50 kg pig equivalents).
2. 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 into the air from the site.
3. Prior to undertaking any alterations to the pig farming and effluent disposal processes, operations, equipment or layout, as specified in the original application and any subsequent application to change the conditions of this consent, 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 air 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 consent holder shall, at all times, operate the piggery and associated activities in accordance with the information provided in support of the original application and any subsequent application to change the conditions to this consent, except as otherwise required or directed by the conditions set out in this resource consent.
6. The discharges authorised by this consent shall not give rise to an odour at or beyond the boundary of the site that is offensive or objectionable.

Consent 5251-2.2

7. 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 2018 and/or June 2024 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 6 August 2019

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: Stanley Bros Trust
(Trustees: Ronald Thomas Stanley & Noel Henry Stanley)
4789A South Road
RD 31
Opunake 4681

Decision Date 6 August 2019

Commencement Date 6 August 2019

Conditions of Consent

Consent Granted: To discharge piggery effluent onto land by spray irrigation

Expiry Date: 1 June 2030

Review Date(s): June 2021, June 2024, June 2027

Site Location: 24 Arawhata Road, Opunake

Grid Reference (NZTM) 1670475E-5637131N

Catchment: Arawhata

*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. The effluent discharged shall be from a piggery of no more than 5,381, 50 kg pig equivalents.
2. Notwithstanding the conditions of this consent, it shall be exercised in a manner that minimises the leaching of nutrients to groundwater.
3. There shall be no overflow of effluent from any part of the effluent disposal system.
4. 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 storage ponds for any reasonably likely inflow, so that there is no unauthorised discharge to land or water.
5. Discharges to land shall not result in effluent ponding on the surface that remains for more than 30 minutes.
6. The sodium adsorption ratio of the wastewater shall not exceed 15.
7. No effluent shall be applied to land less than:
 - a. 25 metres from the water's edge in any watercourse
 - b. 50 metres from any bore, well or spring actively used for water supply purposes; or
 - c. 150 metres from any dwelling house unless the written approval of the occupier has been obtained to allow discharge at a closer distance.
8. There shall be no spray drift, as a result of the irrigation of treated wastewater, at or beyond the property boundary.
9. The consent holder shall ensure that the effluent is discharged to at least 100 hectares of land that is not grazed and that is planted in crops that are removed from the property i.e. a 'cut and carry' operation. It may also be applied and additional areas that are grazed.
10. The Total Nitrogen applied to any hectare of land shall not exceed:
 - (a) 400 kilograms in any 12-month period for 'cut and carry areas'; or
 - (b) 200 kilograms in any 12-month period for any other land (including grazed pasture).

Consent 10671-1.1

11. The total Potassium applied to any hectare of land shall not exceed:
 - (a) 300 kilograms in any 12-month period for 'cut and carry areas'; or
 - (b) 100 kilograms in any 12-month period for any other land (including grazed pasture).

12. The consent holder shall keep accurate records of effluent application to land, including as a minimum, the:
 - a. volume of effluent applied;
 - b. rate and time of application;
 - c. area (ha) that the effluent was applied to;
 - d. method of irrigation; and
 - e. type of crop that is grown on that land.

This information shall be provided to the Taranaki Regional Council annually during the month of July and at other times when requested.

13. From 1 November 2019, 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 effluent irrigation is managed to minimise nutrient leaching to groundwater. The EIMP shall include as a minimum, details of:
 - (a) management of the cut and carry operation
 - (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 effluent is to be applied as uniformly as practicable over the irrigated area, and the uniformity of application demonstrated;
 - (e) the designated application areas and buffer zones for streams and the property boundary; and
 - (f) the determination of total Nitrogen and Potassium in effluent.

14. Before 31 January 2020 the consent holder shall after consultation with the Chief Executive, Taranaki Regional Council, install a minimum of three piezometers. The piezometers shall be at locations, and to depths, that enable monitoring to determine any change in groundwater quality resulting from the exercise of this consent. The piezometers shall be installed in accordance with NZS 4411:2001 and all associated costs shall be met by the consent holder.

Consent 10671-1.1

15. 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 2021 and at 3-yearly intervals thereafter, for the purpose of:
- (a) 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; and
 - (b) addressing any significant increases in the concentration of nutrients in the groundwater.

Signed at Stratford on 6 August 2019

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management

Appendix II

Stanley Bros Trust Annual Report

STANLEY BROS TRUST ANNUAL MONITORING REPORT

Year 2019 – 2020

Piggery Stock Inventory

Type of Pigs	No of Pigs	Average Weight	Total Weight	50Kg Equivalent
Sows	411	162	66,582	1,331
Light Pork	1153	65	74,945	1,499
Store Pigs	1120	44	49,280	9,856
Weaners	1032	16	16,512	330

Effluent Application

Attached

Total Nitrogen Applied.

31 Hectares of Maize received 300kg per hectare by Beck Helicopters.

Total Potassium Applied

None

Maize, Silage, Hay Sold Off Farm

Maize Silage – 31 Hectares – 655,529kg D M

Annual Grass Silage – 29 Hectares -125,005kg DM

Round Bale Grass Silage Size 12 – 612

Round Bale Grass Hay Size 15 -795

Piezometers

As you see above our sow numbers have not increased too the Stock Numbers as per Consent.

With our Industry under legal threat from SAFE regarding farrowing crates we have abounded our plan to increase our size to 500 Sows.

If farrowing crates are out lawed in NZ we will have to close our operation as it will no longer be financially viable.

We are completing the 3 Farrowing sheds already consented which have higher welfare conditions.

As we are not now fully utilising the consent conditions granted and our effluent and nitrogen irrigated has not increased to consent levels we would like to defer the construction and ongoing costs associated with the Piezometers.

Our land utilisation now with all the fertility being transferred off is in a far less nitrogen loading position to when we had a dairy farm with the present number of pigs on hand.

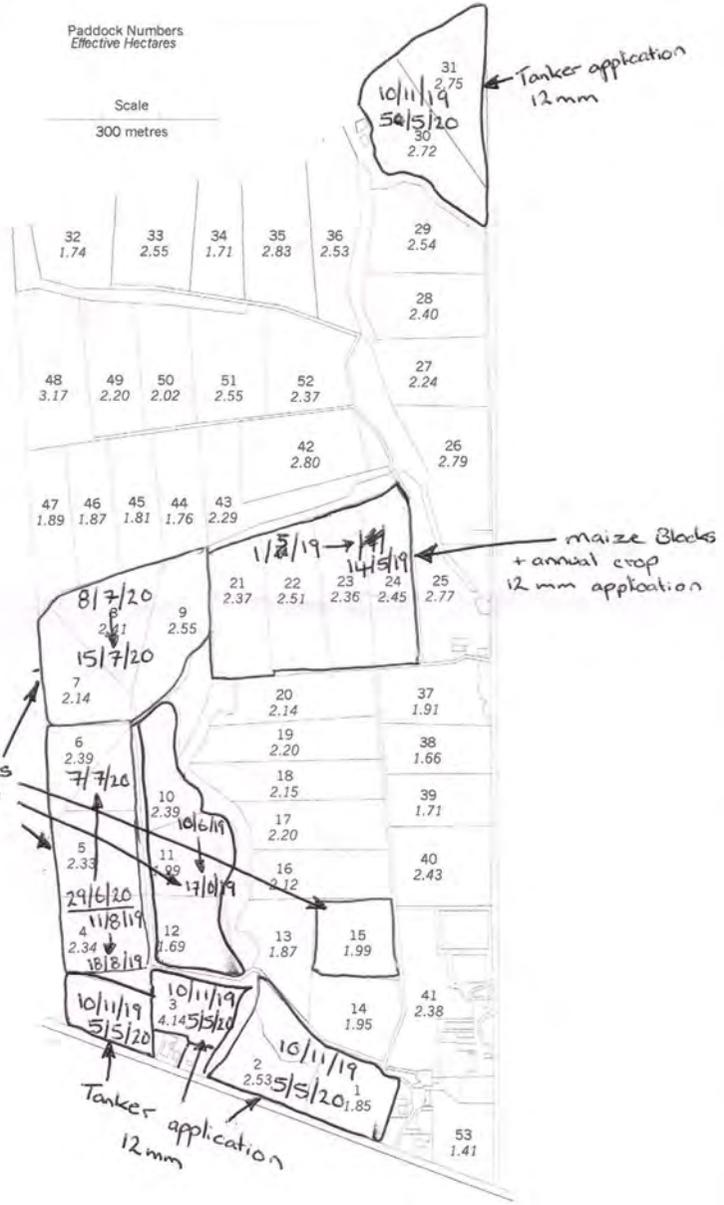
When our industry has some certainty and we are able to build our stock numbers to the consent levels applicable to consent 10671-1 we will complete those conditions.

Soil Tests

Attached

Paddock Numbers
Effective Hectares

Scale
300 metres



12 mm application rate tested and adjusted every 3 months

Paddock Numbers Effective Hectares

Scale 300 metres

