

Osflo Fertiliser Ltd
Monitoring Programme
Annual Report
2016-2017

Technical Report 2017-65

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Taranaki Regional Council

Private Bag 713

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Executive summary

The Osflo Fertiliser Ltd (Osflo) operate a facility for storage, blending and distribution of poultry waste fertiliser. The site is located on Hursthouse Road, Lepperton, in the Wainogana catchment. This report for the period July 2016 to June 2017 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess Osflo'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 their activities.

Osflo hold two resource consents, these include a total of 18 conditions setting out the requirements that Osflo must satisfy. Osflo holds one consent to allow it to discharge stormwater and treated waste water from the poultry litter storage area into land in the vicinity of the Awai Stream, and one consent to discharge emissions into the air from the use and storage of the used chicken litter. This report represents the twenty third report on the environmental performance of Osflo.

During the monitoring period, Osflo demonstrated an overall Good level of environmental performance.

The Council's monitoring programme for the year under review included four site inspections, which include odour surveys, and eight water samples collected for physicochemical analysis. In addition, the Council was also required to undertake eight additional inspections with respect to complaints from the public, specifically related to odour. On one of these occasions the investigating officer identified a constant objectionable odour from the premises which resulted in the issuance of an abatement notice.

In comparison to last year's monitoring report, where only one odour complaint was received with regard to the company's processes. This year drew significantly more complaints in comparison.

Following on from the issuance of the abatement notice, the site management reacted in a proactive manner and purchased additional engineering controls to mitigate the issue. At the same time, the management undertook excavation of older concrete material from the base of the mixing pad, whereby they uncovered an aged water pipe which was proposed to have been leaking for some time. This water leak was inferred to be a contributor to the source of odour, as washings from the yard had likely infiltrated and interacted with the leaking pipe beneath the pad and plausibly turned anoxic which could have resulted in excessive odour production.

Stream water sampling of the Awai Stream was undertaken this year. This marked the second consecutive year with respect to this analysis, and in comparison to the previous monitoring year, actual effects were less than minor.

Short term odour impacts are the main environmental effect associated with the exercise of this consent and the Council will continue to assess this facility moving forward.

Site development plans have slipped when compared to the original staged and dated approach, however a firm commitment has been given by the site management to maintain the final time line date of 1 June 2019.

During the year, Osflo demonstrated a high level of environmental and administrative performance with respect to discharge consent **4333-3** (Discharge of treated waste and stormwater to ground through soakage) the resource consents.

During the year, Osflo demonstrated a needs improvement level for environmental performance and a good level for administrative performance with respect to air discharge consent **5918-2**.

For reference, in the 2016-2017 year, consent holders were found to achieve a high level of environmental performance and compliance for 74% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 21% 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 over the last several years, this report shows that the consent holder's performance has been lower than in previous years.

Table of contents

| | | Page |
|-------|--|------|
| 1 | Introduction | 1 |
| 1.1 | Compliance monitoring programme reports and the Resource Management Act 1991 | 1 |
| 1.1.1 | Introduction | 1 |
| 1.1.2 | Structure of this report | 1 |
| 1.1.3 | The Resource Management Act 1991 and monitoring | 1 |
| 1.1.4 | Evaluation of environmental and administrative performance | 2 |
| 1.2 | Process description | 4 |
| 1.2.1 | Odour mitigation | 5 |
| 1.2.2 | Site Improvements | 6 |
| 1.3 | Resource consents | 7 |
| 1.3.1 | Water discharge permit | 7 |
| 1.3.2 | Air discharge permit | 7 |
| 1.3.3 | Discharges of wastes to land | 8 |
| 1.4 | Monitoring programme | 8 |
| 1.4.1 | Introduction | 8 |
| 1.4.2 | Programme liaison and management | 8 |
| 1.4.3 | Site inspections | 8 |
| 1.4.4 | Chemical sampling | 9 |
| 2 | Results | 10 |
| 2.1 | Inspections | 10 |
| 2.2 | Results of receiving environment monitoring | 12 |
| 2.2.1 | Awai Stream sampling | 12 |
| 2.2.2 | Results | 14 |
| 2.3 | Other ambient monitoring | 15 |
| 2.4 | Investigations, interventions, and incidents | 15 |
| 3 | Discussion of site performance | 20 |
| 3.1 | Environmental effects of exercise of consents | 20 |
| 3.2 | Evaluation of performance | 21 |
| 3.3 | Recommendations from the 2015-2016 Annual Report | 23 |
| 3.4 | Alterations to monitoring programmes for 2017-2018 | 23 |
| 4 | Recommendations | 24 |
| | Glossary of common terms and abbreviations | 25 |

Bibliography and references 27

Appendix I Resource consents held by Osflo Fertiliser Ltd

List of tables

| | | |
|---------|--|----|
| Table 1 | Surface water sampling Awai Stream Osflo 2016-2017 monitoring period | 14 |
| Table 2 | Parameter index | 15 |
| Table 3 | Summary of performance for consent 4333-3 (2016-2017) | 21 |
| Table 4 | Summary of performance for consent 5918-2 (2016-2017) | 22 |
| Table 5 | Evaluation of environmental performance over time | 22 |

List of figures

| | | |
|----------|--|----|
| Figure 1 | Osflo site on the Hursthouse Road | 4 |
| Figure 2 | Staging of site development | 6 |
| Figure 3 | Aerial view of Osflo site with associated sample collection points | 13 |
| Figure 4 | Osflo soakage pond setup | 13 |

List of photos

| | | |
|---------|--|----|
| Photo 1 | Osflo yard cleaning machinery | 18 |
| Photo 2 | Osflo blending pad staff member moving excess material to the storage shed with blower | 19 |
| Photo 3 | Osflo odourisers | 19 |

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 2016 to June 2017 by the Taranaki Regional Council (the Council) on the monitoring programme associated with resource consents held by Osflo Fertiliser Ltd (Osflo). Osflo operate a used chicken litter storage and distribution facility located on Hursthouse Road, Lepperton, in the Waiongana Catchment.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the consents held by Osflo that relate to discharge of stormwater within the Waiongana Catchment, and the air discharge permit held by Osflo 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 twenty third annual report by the Council for Osflo.

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 RMA and the Council's obligations;
- the Council's approach to monitoring sites through annual programmes;
- the resource consents held by the Company in the Waiongana catchment;
- the nature of the monitoring programme in place for the period under review; and
- a description of the activities and operations conducted in Osflo'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 2017-2018 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 Osflo, 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 Osflo'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 2016-2017 year, consent holders were found to achieve a high level of environmental performance and compliance for 74% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 21% of the consents, a good level of environmental performance and compliance was achieved.

1.2 Process description

Osflo operates a storage, blending and distribution facility for agricultural fertiliser based on poultry litter at the site of the old Tarurutangi dairy factory on Hursthouse Road, near Lepperton (Figure 1). The poultry waste is collected from farms around the Taranaki region, and sold as a registered fertiliser to be spread on pasture. The depot is the administration centre for collection and distribution of the used litter, with the majority of the product being taken directly from the poultry farm to the general farming customer. Some blending in of additional ingredients occurs at the depot. A total of 17 persons are employed in the operation, utilising seven trucks.

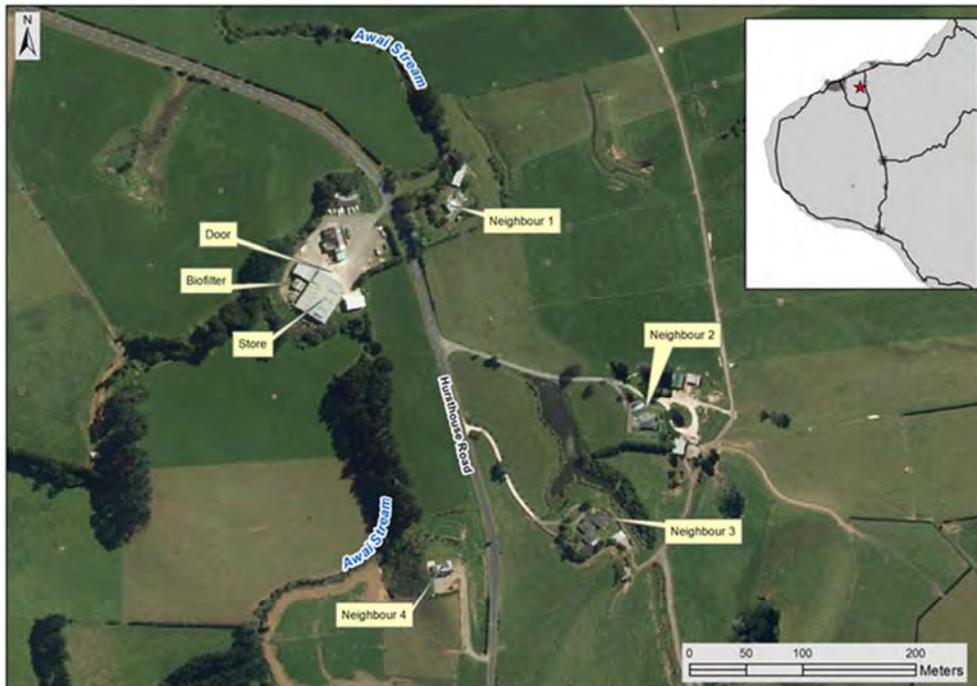


Figure 1 Osflo site on the Hursthouse Road

Litter is stored at the depot when conditions are unsuitable for spreading on land, and to accumulate a reserve for periods of peak demand. Additives, such as lime, sulphur, chelated cobalt, and or selenium may be blended into the litter according to customer requirements, and are stored in a separate building.

Up to about 35,000 tonnes per annum of litter is generated on farms within the Inglewood/Okato/Waitara area, mostly near Lepperton and Bell Block. This amount is forecast to increase owing to expansion of the poultry industry. The amount stored at the depot ranges from about 100 to 3,000 tonnes. Peak seasonal activity is in spring, for cropping, and in autumn, for dairy farming.

The Hursthouse Road depot is on an area of about one hectare in the bottom of a valley, bounded on the north and west by the Awa Stream, on the east by Hursthouse Road, and on the south by a fence and tree shelter belt. The site is surrounded by farm grazing land, with four dwellings nearby beyond the site boundary, one 100 metres to the east, two within 300 metres to the southeast, and a new dwelling 250 metres to the south on a hill. The predominant winds in the area are westerly and south-easterly.

The litter comprises poultry manure and wood shavings. Upon storage the litter undergoes decomposition by microbial organisms, a natural process which generates gases and heat. The majority of the gas is carbon dioxide and methane, which are odourless. Some odorous gases, both organic (aldehydes, ketones, organic acids, amines and organic sulphur compounds) and inorganic (ammonia, nitrogen oxides and hydrogen sulphide), are produced. The rate of heat generation depends on the amount of moisture and oxygen

available, and may lead to spontaneous combustion of the wood shavings and generation of smoke if not controlled.

The storage shed is designed so that the fugitive emissions of gas from the storage of poultry wastes will not escape the building. Emissions are extracted by a fan and forced through a biofilter. Biofilters decompose odorous compounds, using micro-organisms such as bacteria. The use of an extraction fan within the closed facility has the added benefit of maintaining slight negative pressure inside the building, which reduces the egress of untreated gaseous emissions. The ventilation rate is increased during loading out, when the door is left open to allow clearer viewing by operators in the dusty conditions. An odour-neutralising agent is pumped into the air from a manifold around the door while it is open.

The store remains closed and inoperative for about 30% of days in the year. Filling takes place for about 50% of days in a year, and emptying for 20%.

Additional components are mixed into the chicken litter, at present on the ground outside the store with a front-end loader (solids).

Wastewater from washing down the trucks (with quaternary ammonia sanitiser) and yard, and stormwater from this area, is directed to a concrete settling pond which then overflows to two soakage pits in series that are situated beside the Awai Stream. A screen is placed between the holding pond and the first soakage pit to prevent solids from entering the pit. A third soakage pit was excavated in November 2014.

Stormwater with less potential to be contaminated, from other areas of the premises, soaks to ground or is directed to the second soakage pit.

Council compliance samples have focussed on assessing the quality of the Awai Stream as it passes the outside of the soakage area, via an upstream and downstream sample of the surface waters.

1.2.1 Odour mitigation

Due to the nature of the facility, the potential for odour generation while undertaking blending and mixing operations on site is high. Thus, in order to limit the potential for odour generation the site follows a specific odour management plan. As well as the adherence to the odour risk management plan, the site has also undertaken various engineering controls to further mitigate the odour potential. These are as follows:

Odour neutralising spray

Odour neutralising spray is used along the site boundary, just east of the storage shed. Its aim is to neutralise any potential odorous discharges emanating offsite.

The odour neutralising spray system is in operation when trucks are loading and blending product. The frequency and volume of the spray can be adjusted to mitigate potential odour impact.

Road boundary hedge

The south-eastern road boundary has been planted to help trap any potential odorous materials emanating offsite as well as screen site activities from neighbouring dwellings.

Bio-filter

The bio-filter fan is set at minimum power setting during normal operation and set at maximum power when odour mitigation is required.

Store room doors

Osflo are vigilant to make sure that the store doors will remain shut unless loading and unloading activities are occurring.

1.2.2 Site Improvements

It is Osflo's intention to move all blending/mixing and loading/unloading activities indoors by 2019; this was originally proposed in four stages, however, Stage 3 and Stage 4 are now to be combined. These stages are now as follows:

Stage 1 activities include:

- land acquisition to the west of the site adjoining the Hursthouse Road reserve;
- landscaping the portion adjoining the road reserve for visual amenity and odour buffer purposes; and
- the use of neutralising odour spray at the boundaries, as an interim solution for the minimisation of odour effects beyond the boundaries.

Stage 2 activities include:

- the construction of a new workshop; and
- the upgrade of the existing wastewater treatment system.

Stage 3, now combined with Stage 4, and involves the demolition of the existing storage/workshop shed and the renovation/extension of the existing storage facility to accommodate mixing, loading and unloading activities.

At the time that this report was composed 24 months had past since the consent 5918-2 was granted. Osflo has undertaken Task 1, though no demolition work had been actioned for Stage 2.

Additional plans have been discussed with the Council and Osflo intend to continue with the consented progress, and accept that they have not met their commitment time line for development in terms of Stage 2. But they remain firm in their commitment to the final date of June 2019.

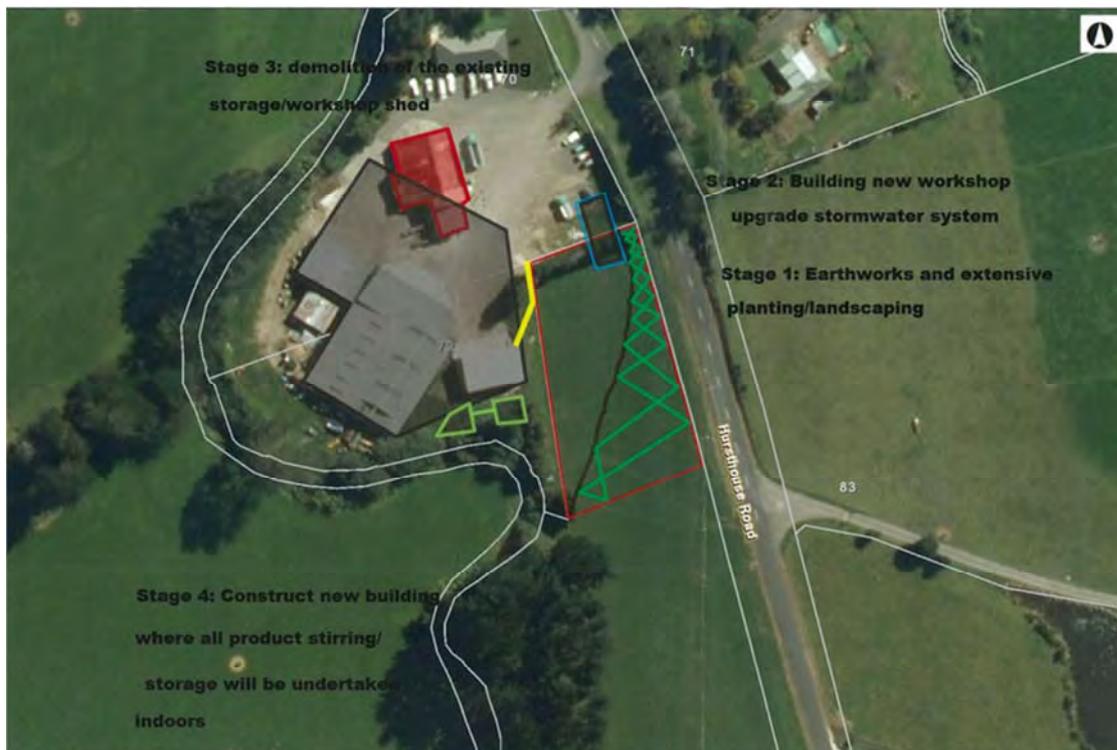


Figure 2 Staging of site development

1.3 Resource consents

1.3.1 Water discharge permit

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

Osflo held one permit to discharge to water during the 2015-2016 review period, discharge permit 4333-3.

Discharge permit **4333-3**, to discharge treated wastewater and stormwater from poultry litter storage yard washings into land via soakage, in circumstances where it may enter ground and surface water, was issued by the Council on 30 June 2015 under Section 87(e) of the RMA. It is due to expire on 1 June 2026.

There are 16 conditions attached to this permit.

- Condition 1 requires adoption of the best practicable option to prevent or minimise effects.
- Conditions 2 and 3 apply to discharge to water, before 1 June 2019, placing limits on significant potential contaminants beyond a mixing zone, and standards on the effluent itself.
- Conditions 4 to 10 apply to discharge to land, after 1 June 2019.
 - Condition 4 prohibits direct discharge of wastewater to Awai Stream.
 - Conditions 5 to 7 relate to operation of the disposal system.
 - Conditions 8 to 10 relate to the design and construction of the disposal system.
- Condition 11 limits the size of the washwater catchment.
- Condition 12 requires all stormwater to be treated.
- Conditions 13 and 14 require the production of spill contingency plan and a management plan.
- Condition 15 deals with changes in processes or operations, and
- Condition 16 provides for review of consent.

A copy of permit 4333-3 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 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.

Osflo holds air discharge permit **5918-2** to discharge emissions into the air from the storage and distribution of used poultry litter fertiliser. This consent was issued by the Council on 30 June 2015 under Section 87(e) of the RMA. It is due to expire on 1 June 2026.

There are eight conditions attached to this permit.

- Condition 1 requires adoption of the best practicable option to prevent or minimise effects.
- Condition 2 requires the containment of all potentially odorous material for treatment of emissions by 1 June 2019.
- Condition 3 prohibits offensive or objectionable odour beyond the site boundary.
- Condition 4 deals with change in process.
- Condition 5 require the door of the store to be kept shut except during entry and exit.
- Condition 6 addresses dust.
- Condition 7 requires the site to be operated in accordance with an approved odour management plan.
- Condition 8 is a review provision.

A copy of the permit 5918-2 is attached to this report in Appendix I.

1.3.3 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.

Until 2009, Osflo held discharge permit **3923-1** to cover the placement of up to 12 tonnes per hectare of the Ministry of Agriculture and Fisheries-registered organic fertiliser onto land in the Taranaki region. This consent expired on 1 June 2009 and was not replaced, as, under Rule 31 of the Regional Freshwater Plan for Taranaki (RFP), which had become operative in October 2001, the activity was now a permitted activity.

Certificate of compliance **7463-0** was issued to Osflo, pursuant to Section 139 of the RMA, in respect of the discharge of fertiliser onto and into land at various locations throughout the Taranaki region, on 26 March 2009. The activity is permitted provided there is compliance with four conditions that are intended to avoid adverse effect on soil and water.

A copy of the certificate with conditions is attached in Appendix I.

There is no scheduled compliance monitoring associated with a permitted activity, though breach of any of the conditions may be the subject of enforcement action.

These summaries of consent conditions may not reflect the full requirements of each condition. The consent condition in full can be found in the resource consent, which is appended to this report.

1.4 Monitoring programme

1.4.1 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 Osflo site consisted of three primary components.

1.4.2 Programme liaison and management

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

- ongoing liaison with resource consent holders over consent conditions and their interpretation and application;
- in discussion over monitoring requirements;
- preparation for any 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.

1.4.3 Site inspections

The Osflo site was visited on four occasions during the monitoring period. With regard to consent for the discharge, the main points of interest were plant processes with potential 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, odour surveys, dust, noxious or offensive emissions.

Sources of data being collected by the consent holder were identified and accessed if required, so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council. The neighbourhood was surveyed for environmental effects.

Further site inspections were also undertaken in response to complaints from the public.

1.4.4 Chemical sampling

The Council undertook sampling of the water quality upstream and downstream of the soakage point and potential mixing zone on the Awai Stream on four separate occasions.

The water samples were analysed for the following:

- Bio-chemical Oxygen demand 5 day
- Conductivity
- Dissolved reactive phosphorus
- Faecal coliforms
- Ammoniacal Nitrogen
- pH
- Temperature
- Turbidity

Originally discharge samples were proposed; however the site is non discharge location as the discharges now soak into a soakage pond. The aim of the upstream and downstream sampling is to ascertain whether the soakage pond and/or the facility may or may not be adversely affecting the Awai Stream in this locality.

2 Results

2.1 Inspections

The following inspections relate to regular compliance monitoring inspection undertaken of Osflo's facility on the Hursthouse Road. Additional inspections were also undertaken in response to complaints from the public. A list of additional inspections is provided in Section 2.3.

1 November 2016

At the time of inspection the wind was light and variable from the North at 3-4 m/s. An upwind odour assessment was undertaken at the entrance to the residence whereby no odour was noticeable. A downwind trajectory was assumed to be across the paddocks which do not contain dwellings.

Quality of product received from the supplier has been cited as a potential for increased odorousness and Osflo are working with the supplier to correct this issue. This is dealt with on a batch basis.

A site walkover was undertaken; the site appeared well kept, with good house keeping practices evident. A noticeable odour was detected when in close proximity to the soakage ponds, which were noted to have significant sediment accumulation. The cleaning of the ponds is scheduled in the routine site management. In the past this has been gifted as free fertiliser to neighbors if required. It constitutes the washings from the yard, post loading and blending.

At the time of inspection the storage room doors were fully closed and the shed was assumed to be around twenty percent full. Site management remarked that they are in the midst of a busy period.. Mineral deposit load out areas appeared well managed. The odorisers were functional upon inspection. The bio-filter was observed and found to be functioning, with a bark type odour lightly permeating from the bio-filter as is normal for this device. The laydown area was observed, as was the line of cedars which have entered their second year.

Recent complaints were discussed, in relation to odour and communication with the interested parties (as stated in there site specific odour risk management plan). Notifications will continue to be sent out in times of high odour generation potential.

Water quality sampling was undertaken at the upstream and downstream sample locations, the Awai Stream was in low flow and appeared clear with low turbidity. A truck was loaded while the sampling was undertaken and no additional odour was noticed.

15 February 2017

At the time of the inspection the weather was fine, a light wind was blowing from the North, estimated to be 1-2 m/s, cloud cover 5/8. An upwind odour survey was undertaken, at the nearest receptor, and no odour was detected. No downwind survey was undertaken as there are minimal receptors in that specific wind direction. The Osflo site manager was present for the duration of the site inspection. The site was described as clean, well managed with little odour. The plant manager recently commissioned a piece of machinery tasked with keeping the yard clean. This was in operation at the time of inspection and seemed effective in removing surface litter from the mixing yard. The doors were open at the time of inspection as the staff were in the process of cleaning the yard and sweeping spilled material (of which there was little) into the mostly empty storage shed. The storage room doors were quickly closed once the yard cleaning had been undertaken.

The soakage ponds were observed. The site manager remarked they are programmed to be cleaned out within the next month. The biofilter was observed and discussions were held about maintaining a log with respect to biofilter condition checks.

The mineral storage areas were observed and were found to be well managed. The odourisers were functioning at the time of the inspection. Discussions are being held with Egmont Air to further improve the efficiency of these devices. New posts have been installed at the front of the establishment, proposed diffusion breaks are in the process of being installed.

Communication has been ongoing, with Osflo holding a running log of every time they have notified their neighbors with respect to conditions which have created the potential for odour generation. This is inline with their odour management plan.

In terms of site developments, within the next month Osflo hopes to be able to produce a timeline of the newly proposed development, which will be in keeping with their consent.

Water samples were collected at the downstream and upstream locations. The Awai Stream appeared to be in a low flow, and was described as clear with minimal turbidity observed.

19 April 2017

At the time of the inspection the weather was fine, partially cloudy (5/8th), warm with a very light, variable West to North West wind, of 1-2 m/s. An odour survey was undertaken at the residential entrances in close proximity to the site entrance. A very slight, non-continuous typical used chicken litter odour was occasionally detected, though very faint. The downwind odour assessment detected very light, continuous odours.

The site manager accompanied the Council Officer for the inspection. There was minimal odour detected in the direct vicinity of the site office. The diesel and fuel storage areas were viewed and appeared to be in good order. The mixing area was observed and appeared well managed, with minimal odour. The site manager remarked that they are keeping the mixing area as clean as practicable. This included ensuring that all material is contained within the closed storage room door while not being loaded and that no material will be left outside, unless it is to be directly loaded. At the time of the inspection the huff was loading back into the store, the excess material which was not loaded on the previous truck. The door was then closed, with all internal odours sent to the bio-filter.

The soakage ponds were observed and appeared to be functioning well, though a clean out will be required in due course. The bio-filter was observed and appeared in good order with minimal odour apparent.

Site developments: the facility had undertaken some major excavations works in the past few months which removed a degree of older, weathered concrete material. This was replaced with new concrete, which was laid in close proximity to the storage shed and associated mineral storage areas. Additional tall posts had been erected at the entrance of the facility; these were to be fitted with shading cloth and associated odourisers in the coming months.

The communication plan was discussed, whereby the site management stated that they have and maintain a good dialogue with their neighbors, whom they inform should the potential arise for odour generation and more recently noise generation in terms of the earth works which have been undertaken.

Overall, the site appeared well managed and housekeeping was prevalent throughout. The odour, though noticeable at times, was at a low intensity for the duration of the inspection. Samples were collected of the Awai Stream, upstream and downstream.

8 June 2017

At the time of the inspection the following was observed. The weather was clear, bright with a light south east wind of 5 m/s. A downwind odour survey was undertaken whereby only light noticeable odours were detected though not objectionable. A covered Osflo truck drove past while undertaking the survey and little to no odour was apparent from the truck. The site manager accompanied the Council Officer for the duration of the inspection. The blending yard appeared to be well managed with good housekeeping

evident through out. It was noted though in some locations the concrete pad required additional patches and it was agreed that this will be programmed into the site maintenance schedule.

Cleaning machinery was in the process of being serviced by on site staff. The storage room's doors were closed at the time of inspection. The storage shed was estimated to be 3/5 full of material. Strong chicken litter odours were contained within the storage room. However upon exiting and closing the facility door the odours relented which would imply the negative pressure was holding and drawing potential odours through to the bio-filter where they were treated. Soakage ponds were viewed and the main receiving pond had been recently cleaned out by staff.

A recent finding of a ruptured water pipe which ran beneath the facility had been mitigated and as a result the observed odour in the blending area was notably lower than compared to previous visits. Odourises were in operation at the time of the inspection.

Surface water samples were collected upstream and downstream of the facility, where the Awai stream appeared clear with no visual impacts from the consent holders operations. The management indicated that communication with the neighbors was ongoing.

2.2 Results of receiving environment monitoring

2.2.1 Awai Stream sampling

This period marked the second year of site specific water quality monitoring programme with respect to the Awai Stream which flows around the Osflo facility; clockwise from the south and passing the facility to the north east (Figure 3). The main aim of the stream monitoring was to ascertain if the exercise of this consent resulted in any potential effects.

Washings from the yard and from cleaning of the trucks are directed to the first soakage pond, which then goose necked through to a second and third pond when required (Figure 3).

Sample locations AWY000223 and AWY000226 were set up as monitoring locations on the Awai Stream (Figure 4). AWY000223 is the upstream location, to determine the quality of the preceding stream conditions, whilst AWY000226 is the downstream location which will assess for any potential additional inputs to the stream as it flows around the Osflo facility.

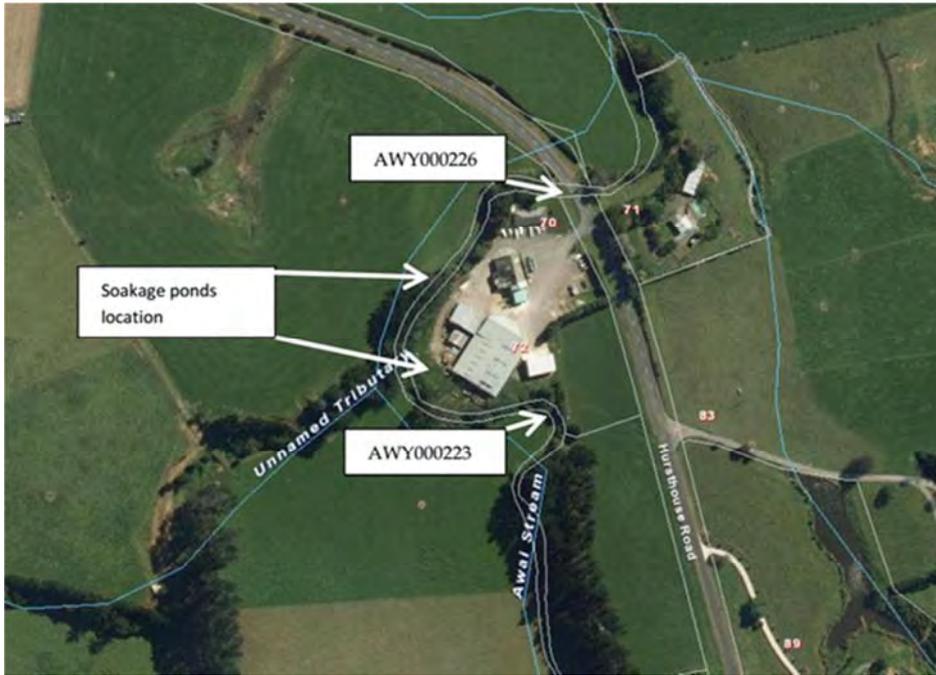


Figure 3 Aerial view of Osflo site with associated sample collection points



Figure 4 Osflo soakage pond setup

2.2.2 Results

In this monitoring period the Council collected, on four separate occasions, stream samples both upstream (AWY000223) and downstream (AWY000226) of the facilities' associated soakage pond area (Figure 3). The analysis of these samples is provided in the following Table 1.

The site does not discharge to the Awai Stream; rather it operates a soakage pond system (Figure 4). The aim of the surface water samples was to ascertain the quality of the preceding surface water quality and to compare it against the surface waters which have flowed past the soakage pond area.

In this monitoring period, and in similarity to the previous monitoring period, the analysis of the surface waters indicated negligible impacts from the exercise of the consents.

Condition 2 of Consent 4333-3, requires that the downstream sample location must meet specific criteria of analytes in terms of un-ionised ammonia and filtered carbonaceous biological oxygen deficit.

The maximum concentration post discharge and mixing is limited to 0.025 g/m³ un-ionised ammonia and 2.0 g/m³ filtered carbonaceous BOD₅. When compared to the results in Table 1. The highest concentration of un-ionised ammonia was recorded on the 15 February 2017 at the downstream site at a concentration of 0.00069 g/m³ NH₃. This concentration was well below the consented maximum. Filtered carbonaceous BOD concentrations were also similarly below the consented maximum, with seven of eight samples below the limit of reporting for this analyte.

Dissolved reactive phosphorus concentrations ranged from <0.003 to 0.015 g/m³, faecal concentrations ranged from 240-800 /100ml, with some of the higher readings found in the upstream sample opposed to the downstream, which is in similarity to the previous monitoring periods analysis. Concentrations of ammonia within the surface waters detailed a difference when comparing the upstream with the downstream sites; however the actual concentrations of ammonia were similarly low. pH, turbidity and temperature remained consistent between monitoring locations throughout the monitoring year.

Table 1 Surface water sampling Awai Stream Osflo 2016-2017 monitoring period

| Site | Collected | Time | BODCF | CONDY | DRP | FC | NH ₄ | PH | TURBY | TEMP | NH ₃ |
|-----------|-------------|-------|------------------|-----------|--------------------|--------|--------------------|-----|-------|-------|------------------|
| | | | TRC | TRC | TRC | TRC | TRC | TRC | TRC | Field | Calc |
| | | | g/m ³ | mS/m@20°C | g/m ³ P | /100ml | g/m ³ N | pH | NTU | °C | g/m ³ |
| AWY000223 | 01 Nov 2016 | 11:10 | <0.5 | 10.8 | 0.003 | 240 | 0.019 | 7.5 | 1.5 | 12.8 | 0.00017 |
| AWY000226 | 01 Nov 2016 | 11:25 | 0.6 | 11 | 0.015 | 370 | 0.097 | 7.4 | 1.7 | 13 | 0.00069 |
| AWY000223 | 15 Feb 2017 | 12:40 | <0.5 | 11.1 | 0.011 | 800 | 0.013 | 7.4 | 2.3 | 16.5 | 0.00012 |
| AWY000226 | 15 Feb 2017 | 12:33 | <0.5 | 11.2 | 0.011 | 640 | 0.016 | 7.4 | 2 | 16.8 | 0.00015 |
| AWY000223 | 19 Apr 2017 | 11:20 | <0.5 | 10.5 | 0.003 | 390 | 0.03 | 7.2 | 3.3 | 13.7 | 0.00014 |
| AWY000226 | 19 Apr 2017 | 11:09 | <0.5 | 10.5 | 0.003 | 400 | 0.032 | 7.2 | 3.6 | 13.7 | 0.00015 |
| AWY000223 | 08 Jun 2017 | 11:31 | <0.5 | 10.7 | 0.003 | 290 | 0.008 | 7.3 | 3.3 | 10.5 | 0.00004 |
| AWY000226 | 08 Jun 2017 | 11:18 | <0.5 | 10.8 | <0.003 | 290 | 0.017 | 7.3 | 2.2 | 10.5 | 0.00008 |

Table 2 Parameter index

| Parameter | Description | Units |
|-----------------|---------------------------------|--------------------|
| BODCF | Bioch.Ox.Demand,5day,filtr;Ninh | g/m ³ |
| CONDY | Conductivity @ 20'C | mS/m@20°C |
| DRP | Dissolved reactive phosphorus | g/m ³ P |
| FC | Faecal Coliforms | /100ml |
| NH ₃ | Un-ionised ammonia | g/m ³ |
| NH ₄ | Ammoniacal nitrogen | g/m ³ N |
| PH | pH | pH |
| TEMP | Temperature | °C |
| TURBY | Turbidity | NTU |

2.3 Other ambient monitoring

At the beginning of an inspection an odour survey is conducted by the inspecting officer, where by a downwind and upwind location is chosen upon arrival to the facility and the officer will maintain a position for ten minutes to assess for odour potential.

When assessing, the odour will be noticeable or non-noticeable. If the odour is noticeable, the odour will then be classified as consistent or intermittent over that ten minute period at which point the officer will determine if the odour intensity is objectionable or merely noticeable.

The facility is fitted with odour mitigation devices which are namely aerosols positioned at certain locations around the facility. Osflo has an odour management plan which will determine how potentially odorous material shall be mitigated. If odorous material is required to be brought to site, the operators will check the meteorological conditions and inform notified parties if required.

2.4 Investigations, interventions, and incidents

The monitoring programme for the year was based on what was considered to be an appropriate level of monitoring, review of data, and liaison with the consent holder. During the year matters may arise which require additional activity by the Council, for example provision of advice and information, or investigation of potential or actual 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 includes events where the consent holder 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 2016-2017 period, the Council was required to undertake significant additional investigations and interventions, or record incidents, in association with Osflo's conditions in resource consents or provisions in Regional Plans.

13 September 2016 – Odour complaint

A site visit undertaken in response to a complaint regarding a chicken litter odour discharging beyond the boundary of the property. Investigation found there was a light breeze and no odour could be detected beyond the boundary of the property. The deodorisers were in use at the time of inspection. The site was tidy and was operating within resource consent conditions.

20 October 2016 – Odour complaint

An inspection was undertaken in response to a complaint regarding odour discharging from the Osflo site. The investigation found intermittent noticeable odours discharging beyond the boundary of the property. An inspection of the site found that normal operations were occurring with trucks loading and unloading chicken manure. The deodorisers were in use and were operating on a 5 seconds on 15 seconds off pattern.

The following action was to be undertaken: Ensure that no objectionable or offensive odour discharges beyond the boundary of the property.

29 October 2016 – Odour complaint

A complaint was received concerning an objectionable odour on Hursthouse road in the vicinity of the Osflo fertiliser site. Site inspection was undertaken with Dave Geraghty of Osflo. The main activity at the site was the loading and distribution of Osflo product.

Doors to storage shed were shut and the yard appeared reasonably clean. A very weak odour was detected on site. On Hursthouse road an odour survey was undertaken and as a result no odour was detected beyond the boundary at the time of the investigation.

The following action was to be taken:

The consent holder was requested to ensure best practice is adopted to minimise objectionable odour beyond the site boundary.

31 October 2016 – Odour complaint

A complaint was received about an odour on Hursthouse Road. An inspection found a slightly noticeable intermittent odour on the road outside of the complainant's address. The slight wind was blowing from the direction of the Osflo site. A site visit found only a noticeable odour alongside the last truck to be loaded. There were no odours detected around the rest of the site.

2 November 2016 – Odour complaint

An inspection was undertaken for an odour complaint. At the initial time of arrival there was a noticeable odour off site with a strong gusty wind blowing in a mainly westerly direction. The odour dissipated after a short time. An inspection of the site was undertaken with two workers on site loading out a truck with the huff. The inspection found there were no deodorisers operating. The truck was loaded out and there was quite a lot of odorous litter left on the load out area. A strong odour could be detected in this area.

An inspection of the rest of the site found no other areas of odour. Off site at the end of the inspection only intermittent noticeable odours east of the main gate were noted as the wind had changed direction slightly. The consent holder was requested to ensure all best practice options are undertaken when and after load outs occur.

21 November 2016 – Odour complaint

A complaint was received concerning an objectionable odour emanating from the Osflo fertiliser site. An odour survey was undertaken at a number of locations around the Osflo site.

At the time of the investigation a light breeze was coming out of the south-west and weather conditions were fine. Initially a distinct Osflo type odour was detected. The assessment detected no odour up wind of

the site. Downwind of the site found that at intermittent times the odour detected ranged between being distinct, weak and very weak.

As the assessment continued, the odour appeared to dissipate until no odour was detected. At the conclusion of the assessment the odour detected was found not to be objectionable at the time of the investigation.

No further action was required.

30 November 2016 – Odour complaint

A complaint was received concerning an objectionable odour on Hursthouse Road. An investigation was undertaken with senior investigating officer Jared Glasgow. An odour survey was undertaken at a number of locations along Hursthouse Road. A light to moderate breeze was blowing from the north-west, an Osflo odour was detected.

The intensity ranged from very weak to distinct, with the highest intensity being beyond the site boundary. David Geraghty, Osflo's Operations Manager, accompanied Council staff.

The door to the storage facility remained open when no processing of product was being undertaken. The condition of the site indicated that the best practical steps were not been carried out to minimise odour at the source.

Odorises were operating intermittently during the investigation.

The following action was taken:

Undertake works to ensure compliance with resource consent 5918-2.

Abatement notice EAC-21422 was issued following this inspection.

1 December 2016 – Odour complaint

A complaint was received regarding an objectionable odour resulting in washing stinking of it. A downwind odour survey was undertaken, which happened to be at the entrance of the complainant's property. Short term pungent odours were detected sporadically, bordering on objectionable, though intermittent. The wind was light, 2-3 knots from the west and it was overcast.

Upon entering the site, an inspection was undertaken. One of the Osflo staff were in the middle of washing down their truck. The store doors were 90% closed. The gentleman outlined that once he had cleaned his truck he would clean up the yard. The odour mitigation was not functioning while I the inspection was underway. An inspection of the laydown area revealed cleaned out trucks, drying the trays for the following day. Noticeable pungent, near objectionable odours were smelt in this area, though these were noted to be fairly intermittent. The bio-filter was observed and the odour associated was not the pungent type smelt early.

The investigating officer met with site staff, discussions were held detailing the odour mitigation which was not functioning, whereby it was then turned on. Discussed that the shelter belt was not quite as effective as proposed and that additional measures may be required. Management discussed whether additional shading could be constructed and perhaps odorisers could be fitted to these proposed shading areas. It was outlined that the Council had been to this facility on numerous occasions in recent weeks, and that Osflo's odour was bordering on objectionable, especially on this occurrence. Osflo staff were instructed to control odour so as to not be objectionable beyond their boundary.

It was outlined that if the odour mitigation was not working, which was stipulated by the plan, then their plan, which is a consented obligation may not be sufficient to mitigate the odour generation. This would be a breach of the consent.

It was mentioned that Osflo would need to revisit this plan, and perhaps consider additional measures, which could include fencing cloth and additional odourisers at multiple positions.

17 January 2017 – Odour complaint follow up

Purpose of the inspection was to ensure Abatement Notice EAC-21422 was being complied with.

Steps had been undertaken to ensure best management practices were being observed to ensure compliance with abatement notice and resource consent 5918-2.

No Osflo type odour was detected beyond the site boundary at the time of the inspection. Abatement Notice EAC-21422 was being complied with at the time of the site visit.

The following action was to be taken: Ensure Abatement Notice EAC-21422 and resource consent 5918-2 continue to be complied with.

Subsequent actions

Following on from the issuance of the abatement notice, Osflo purchased additional machinery (Photo 1 and 2) to aid them in better managing the odour related issues which have been apparent this monitoring period. The machinery, aimed at keeping the outside blending area clean and clear when not in use appeared to be mitigating diffuse odour at the facility.

More recently, the finding and fixing of a leaking water pipe directly under the blending area has further reduced the odour apparent on site. Since these two undertakings there have been no odour complaints. These additional engineering controls are aimed to lessen the impacts from odour generation. Additional odourisers have been added to the site, an example of which is provided in Photo 3.



Photo 1 Osflo yard cleaning machinery



Photo 2 Osflo blending pad staff member moving excess material to the storage shed with blower



Photo 3 Osflo odourisers

3 Discussion of site performance

Site development is underway at Osflo's Hursthouse Road site. . Contract negotiations (which were finally agreed in mid April 2017) delayed site development considerably this monitoring year. As a consequence the planned stage two development which was to encompass the construction of the new work shop has been delayed, however the site management are firm in there commitment to the completion date of the 1 June 2019.

Process management had at times resulted in odour complaints in the local area and prompted the Council to undertake eight additional odour inspections this monitoring period. One inspection found objectionable odour which resulted in the issuance of an abatement notice.

Following on from this issuance, the site management reacted in a very proactive manner and purchased additional engineering controls to mitigate the issue. At the same time, the management undertook excavation of older concrete material from the base of the mixing pad. They uncovered an aged water pipe which was proposed to have been leaking for some time. This water leak was inferred to be a contributor to the source of odour, as washings from the yard had interacted with the leaking pipe beneath the pad and likely turned anoxic which could have resulted in excessive odour production.

Significantly, post this finding; the Council has not received any additional odour complaints. The outcome of the final compliance inspection observed significantly lower ambient odour on site than compared to previous inspections undertaken over the past two year period.

The Osflo facility must give regard to its odour risk management plan during times of high service load. While there may be busy periods the consent holder must be mindful of the potential to create objectionable odour as a process of their practice.

The Council will continue to monitor odour at this facility.

3.1 Environmental effects of exercise of consents

Specific environmental effects associated with the exercise of these consents are primarily related to short term odour impacts.

As discussed in the previous section, the recent acquisition of engineering controls appears to be working, coupled with the discovery and repair of a leaking water pipe. The facility is responding to the odour issues and since these controls have been installed, the Council is yet to receive a complaint.

The end of this monitoring year marked the second year of the Awai Stream surface water monitoring regime. The analysis collected this year indicated minimal or negligible impacts from the facility as a result of the exercise of their consent. The samples were collected upstream and downstream of the facility's soakage ponds and the resultant analysis indicated negligible effects.

3.2 Evaluation of performance

A tabular summary of the consent holder's compliance record for the year is set out in Tables 3, 4 and 5.

Table 3 Summary of performance for consent 4333-3 (2016-2017)

| Purpose: To discharge treated wastewater and stormwater from poultry litter storage yard washings into land via soakage, in circumstances where it may enter ground and surface water | | |
|--|---|-----------------------------|
| Condition requirement | Means of monitoring during period under review | Compliance achieved? |
| 1. Best practicable option | Site inspections defined one particular moment which resulted in the issuance of an abatement notice. | For the most part. |
| 2. Limits on ammonia and BOD in Awai Stream | Sampling and testing of stream as necessary by Council staff, before 1 June 2019. | Yes |
| 3. Limits on potential contaminants in discharge | Sampling and testing of discharge as necessary by Council staff, before 1 June 2019. | Yes |
| 4. No direct discharge into the stream | Site inspection, after 1 June 2019. | N/A |
| 5. Control of ponding | Site inspection, after 1 June 2019. | N/A |
| 6. Even application of effluent | Site inspection, after 1 June 2019. | N/A |
| 7. Provision for effluent storage | Site inspection, after 1 June 2019. | N/A |
| 8. Completion of site works | Site inspection, after 1 June 2019. | N/A |
| 9. Works to be as proposed | Site inspection, after 1 June 2019. | N/A |
| 10. Provision of updated stormwater and wastewater plan | Receipt of as-built plan, and inspection. | Yes |
| 11. Limit on washdown catchment area | Site inspection, after 1 June 2019. | N/A |
| 12. Treat prior to stormwater discharge | Site inspection, no discharge, soakage field. | Yes |
| 13. Maintenance of and adherence to a spill contingency plan | Receipt of Plan. | Yes |
| 14. Maintenance of and adherence to a Management Plan | Receipt and certification of Plan, site inspection. | N/A |
| 15. Written notification of changes | Site inspection. | N/A |
| 16. Optional review provision re environmental effects | N/A. | N/A |
| Overall assessment of consent compliance and environmental performance in respect of the consent | | High |
| Overall assessment of administrative performance in respect of this consent | | High |

Table 4 Summary of performance for consent 5918-2 (2016-2017)

| Purpose: To discharge emissions into the air from the storage and distribution of used poultry litter fertiliser | | |
|---|--|-----------------------------|
| Condition requirement | Means of monitoring during period under review | Compliance achieved? |
| 1. Best practicable option | Site inspections. | For the most part |
| 2. Containment of odorous material and treatment of emissions | Site inspection, after June 2019. | N/A |
| 3. No objectionable odour beyond boundary | Site inspection found objectionable odour and issued abatement notice. 8 additional inspections. | No |
| 4. Written notification of changes | Site inspection. | Yes |
| 5. Door to store kept closed | Site inspection. | For the most part |
| 6. Dust control | Site inspection. | Yes |
| 7. Maintenance of and adherence to a Management Plan | Receipt and certification of Plan, site inspection. | Yes |
| 8. Optional review provision re environmental effects | N/A. | N/A |
| Overall assessment of consent compliance and environmental performance in respect of the consent | | Improvement required |
| Overall assessment of administrative performance in respect of this consent | | Good |

N/A = not applicable

Table 5 Evaluation of environmental performance over time

| Year | Consent no | High | Good | Improvement req | Poor |
|-------------|-------------------|-------------|-------------|------------------------|-------------|
| 2004-2005 | 4333-2 | | 1 | | |
| | 5918-1 | | 1 | | |
| 2005-2006 | 4333-2 | | 1 | | |
| | 5918-1 | | 1 | | |
| 2006-2007 | 4333-2 | | 1 | | |
| | 5918-1 | | 1 | | |
| 2007-2008 | 4333-2 | 1 | | | |
| | 5918-1 | 1 | | | |
| 2008-2009 | 4333-2 | 1 | | | |
| | 5918-1 | 1 | | | |

| Year | Consent no | High | Good | Improvement req | Poor |
|-----------|------------|------|------|-----------------|------|
| 2009-2010 | 4333-2 | 1 | | | |
| | 5918-1 | 1 | | | |
| 2010-2013 | 4333-2 | 1 | | | |
| | 5918-1 | | 1 | | |
| 2013-2015 | 4333-2/3 | 1 | | | |
| | 5918-1 | | | | 1 |
| 2015-2016 | 4333-3 | 1 | | | |
| | 5918-2 | | 1 | | |
| Totals | | 9 | 8 | | 1 |

During the year, Osflo demonstrated a high level of environmental and administrative performance with respect to discharge consent **4333-3** (Discharge of treated waste and stormwater to ground through soakage) the resource consents.

During the year, Osflo demonstrated a needs improvement level for environmental performance and a good level for administrative performance with respect to air discharge consent **5918-2**.

Overall their environmental performance was considered to be Good.

3.3 Recommendations from the 2015-2016 Annual Report

In the 2015-2016 Annual Report, it was recommended:

1. THAT monitoring of consented activities at Osflo Fertiliser Ltd facility on Hursthouse Road in the 2016-2017 year continue at the same level as in 2015-2016.

3.4 Alterations to monitoring programmes for 2017-2018

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
- to 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.

It is proposed that for 2017-2018 that the current monitoring programme remains unchanged.

4 Recommendations

1. THAT monitoring of consented activities at Osflo in the 2017-2018 year continue at the same level as in 2016-2017.

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. |
| 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. |
| Cu* | Copper. |
| DO | Dissolved oxygen. |
| DRP | Dissolved reactive phosphorus. |
| E.coli | Escherichia coli, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample. |
| Ent | Enterococci, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre of sample. |
| F | Fluoride. |
| FC | Faecal coliforms, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample. |
| Fresh | Elevated flow in a stream, such as after heavy rainfall. |
| $g/m^2/day$ | grams/metre ² /day. |
| g/m^3 | Grams per cubic metre, and equivalent to milligrams per litre (mg/L). In water, this is also equivalent to parts per million (ppm), but the same does not apply to gaseous mixtures. |
| Incident | An event that is alleged or is found to have occurred that may have actual or potential environmental consequences or may involve non-compliance with a consent or rule in a regional plan. Registration of an incident by the Council does not automatically mean such an outcome had actually occurred. |
| Intervention | Action/s taken by Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring. |
| Investigation | Action taken by Council to establish what were the circumstances/events surrounding an incident including any allegations of an incident. |

| | |
|-------------------|---|
| 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. |
| 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. |
| 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. |

*an abbreviation for a metal or other analyte may be followed by the letters 'As', to denote the amount of metal recoverable in acidic conditions. This is taken as indicating the total amount of metal that might be solubilised under extreme environmental conditions. The abbreviation may alternatively be followed by the letter 'D', denoting the amount of the metal present in dissolved form rather than in particulate or solid form.

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

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Appendix I

Resource consents held by Osflo Fertiliser Ltd

(For a copy of the signed resource consent
please contact the TRC Consents 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: Osflo Fertiliser Limited
 PO Box 761
 New Plymouth 4340

Decision Date: 30 June 2015

Commencement Date: 30 June 2015

Conditions of Consent

Consent Granted: To discharge treated wastewater and stormwater from
 poultry litter storage yard washings into land via soakage, in
 circumstances where it may enter ground and surface water

Expiry Date: 01 June 2032

Review Date(s): June 2020, June 2026

Site Location: 70 Hursthouse Road, Tarurutangi

Legal Description: Lot 1 DP 4905 Lot 1 DP 8670 Blk VII Paritutu SD

Grid Reference (NZTM) 1702115E-5673767N

Catchment: Waiongana

Tributary: Mangaoraka
 Awai

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

Discharge to water (Before 1 June 2019)

2. The wastewater discharge shall not cause the maximum concentration of any constituent shown in the following table to be exceeded in the receiving water more than 25 metres downstream of the discharge to the receiving water.

| Constituent | Maximum Concentration |
|--|------------------------|
| Unionised ammonia | 0.025 gm ⁻³ |
| Filtered carbonaceous BOD ₅ | 2.0 gm ⁻³ |

3. Constituents of the discharge shall meet the standards shown in the following table.

| Constituent | Standard |
|------------------|---|
| pH | Within the range 6.0 to 9.0 |
| suspended solids | Concentration not greater than 100 gm ⁻³ |
| oil and grease | Concentration not greater than 15 gm ⁻³ |

This condition shall apply before entry of the treated stormwater into the receiving waters at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

Discharge to land (After 1 June 2019)

4. There shall be no direct discharge wastewater to the Awai Stream after 1 June 2019.
5. Discharges to land shall not result in wastewater ponding on the surface that remains for more than 30 minutes.
6. The effluent shall be applied as evenly as practicable over an area of no less than 40 m².
7. The consent holder shall ensure that at all times, while complying with the other requirements of this consent, there is sufficient storage available in the effluent treatment system for any reasonably likely inflow, so that there is no unauthorised discharge to land or water.

Consent 4333-3.0

8. The consent holder shall complete the proposed site expansion by 1 June 2019, in accordance with the details submitted with the application and as shown in the plans prepared by BTW Company Limited and in Attachments 1 – 5.
9. The upgraded stormwater and wastewater treatment system shall be installed in accordance with the details provided as part of the additional information provided to the Council (Council Document Reference 1458593) prepared by BTW Company Limited.
10. Within a month of completion of the site expansion required in condition 8 above, the consent holder shall provide the as-built on-site stormwater and wastewater management plan to the Chief Executive, Taranaki Regional Council.
11. The treated washdown water discharged shall be from a catchment area not exceeding 250 m².
12. All stormwater shall be directed for treatment through the stormwater treatment system for discharge in accordance with the special conditions of this permit.
13. The consent holder shall maintain and regularly update a 'Spill Contingency Plan' (SCP) that details measures and procedures that will be undertaken to prevent, and to avoid environmental effects from, a spillage or any discharge of contaminants not authorised by this consent. The plan shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity.
14. The site shall be operated in accordance with a 'Management Plan' (MP) prepared by the consent holder and approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity. The plan shall detail how the site is to be managed to minimise the contaminants that become entrained in the stormwater and shall include as minimum:
 - a) the loading and unloading of materials;
 - b) maintenance of conveyance systems;
 - c) general housekeeping; and
 - d) management of the interceptor system.
15. The consent holder shall notify the Chief Executive, Taranaki Regional Council, prior to making any changes to the processes or operations undertaken at the site, or the chemicals used or stored on site that could alter the nature of the discharge. Any such change shall then only occur following receipt of any necessary approval under the Resource Management Act. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to consents@trc.govt.nz.

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

Consent 4333-3.0

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 2020 and/or June 2026, 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 30 June 2015

For and on behalf of
Taranaki Regional Council



A D McLay
Director - Resource Management

Advice Note

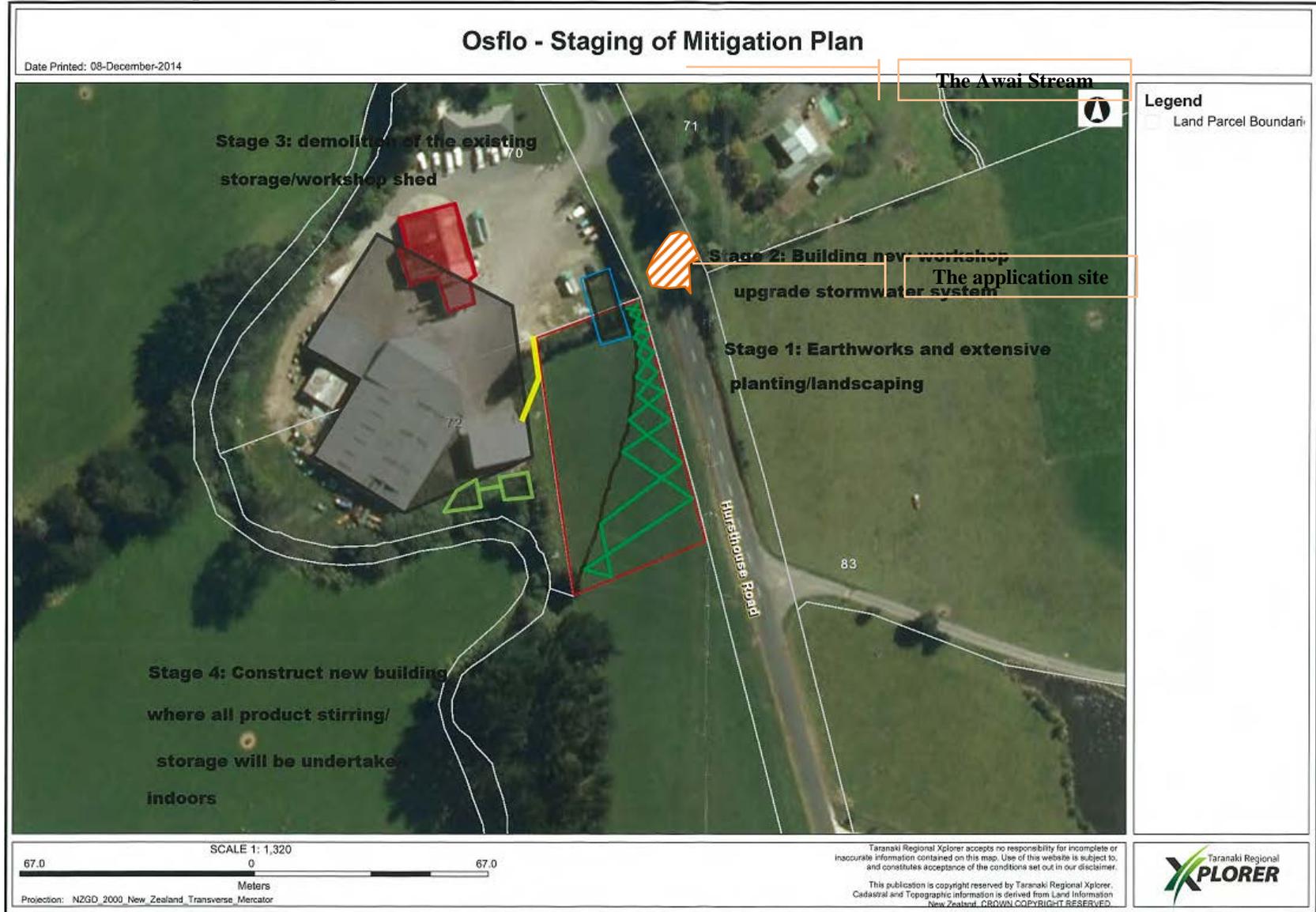
The consent holder's attention is drawn to MPI's "New Zealand Code of Practice for the Design and Operation of Farm Dairies (NZCP1) which restricts:

- *the discharge of specified wastes to land used for grazing of milking animals; and*
- *the use of feed from land which has had specified wastes applied to it.*

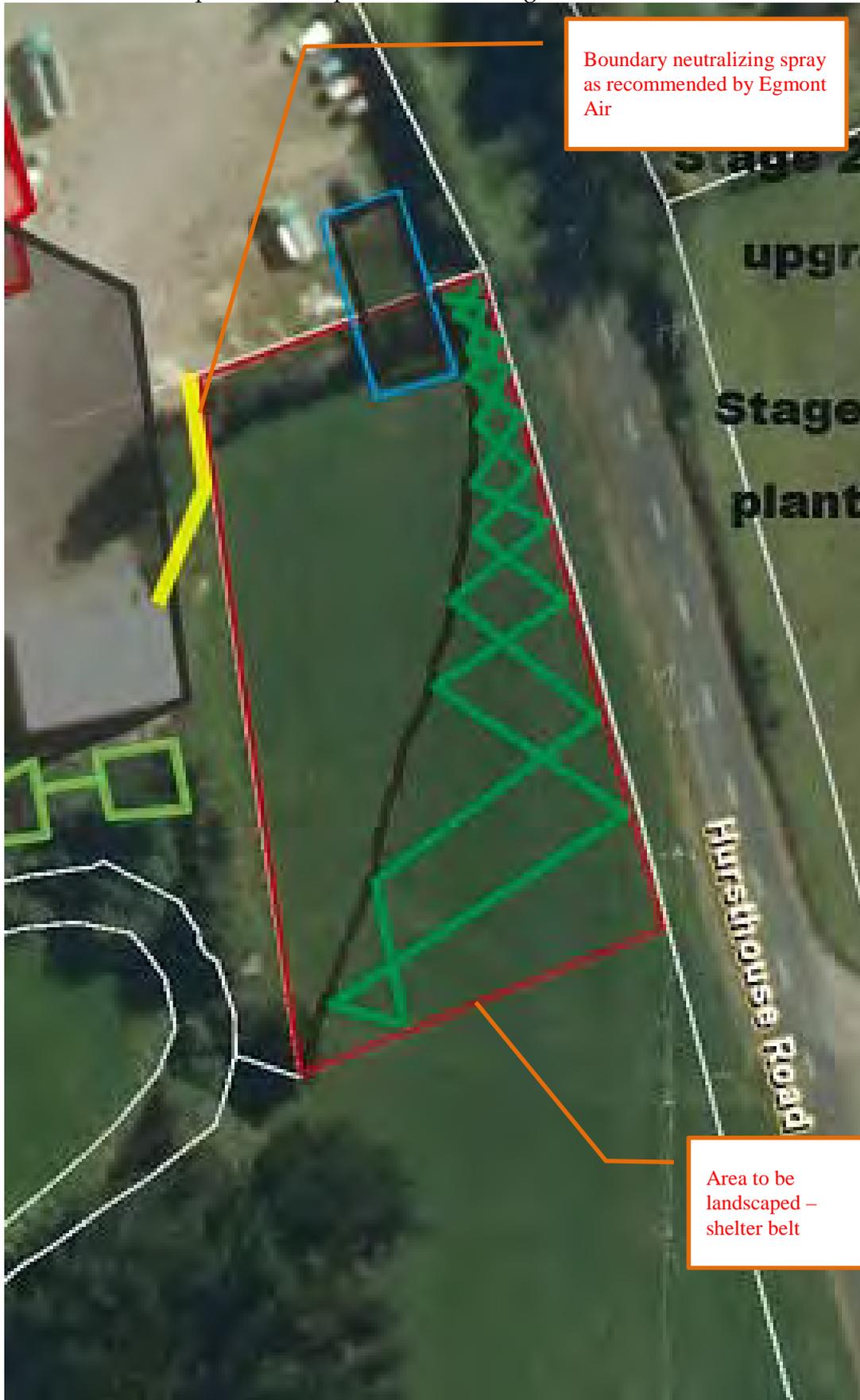
Should you require further information, please contact a Dairy Industry Technical Advisory Group (DITAG) representative or visit <http://www.foodsafety.govt.nz/elibrary/industry/dairy-nzcp1-design-code-of-practice/amdt-2.pdf> (specifically section 6.4 Disposal of effluent and other wastes and section 7.8 Purchased Stock Food) or contact an operating dairy processing company regarding conditions of supply.

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

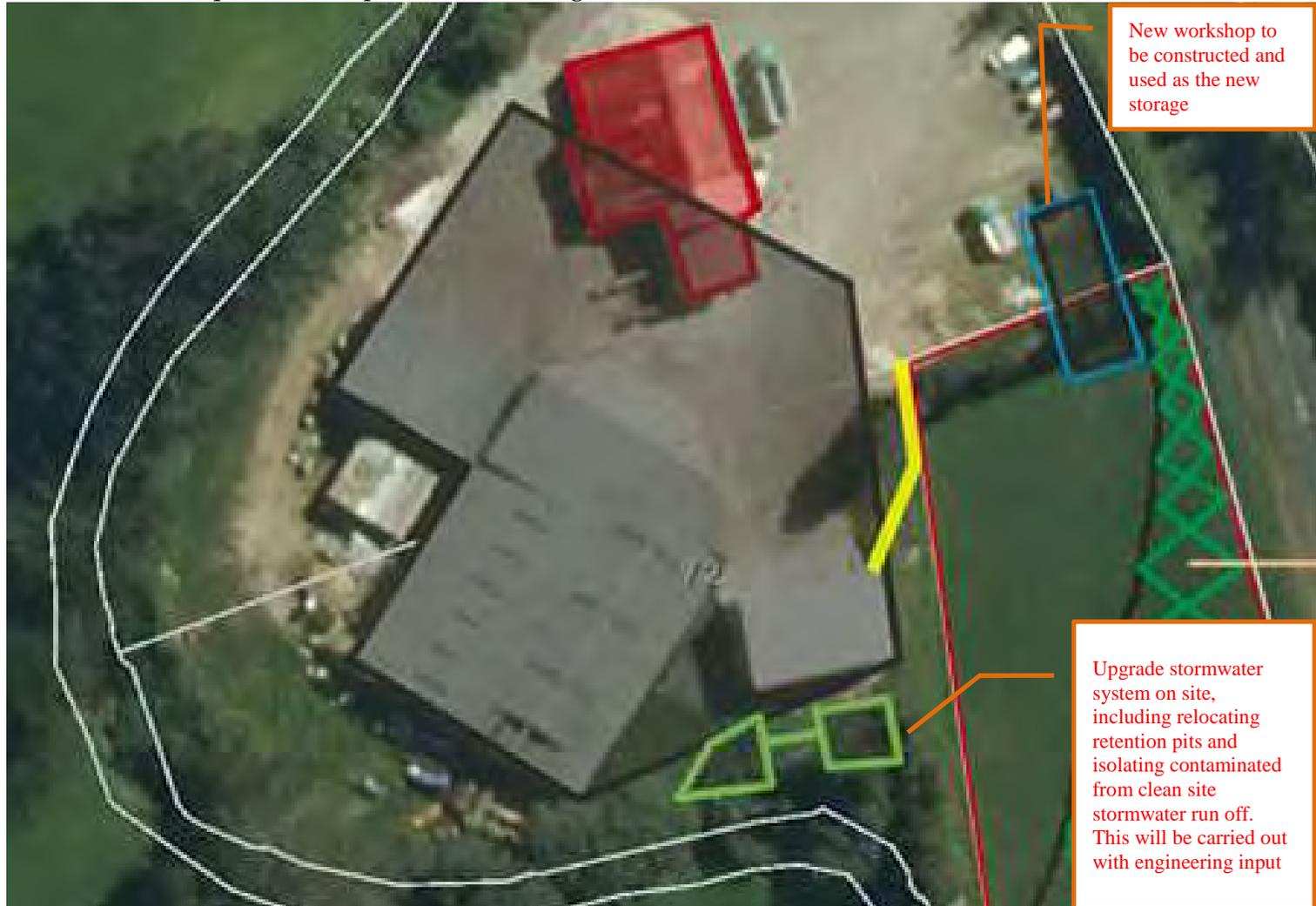
Attachment 1: Proposed Site Expansion Plan - Overall Plan



Attachment 2: Proposed Site Expansion Plan – Stage 1



Attachment 3: Proposed Site Expansion Plan – Stage 2



Attachment 4: Proposed Odour Mitigation Plan – Stage 3



New extension to current storage facility to accommodate mixing and loading /unloading activities indoors

Attachment 5: Proposed stormwater / wastewater plan



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

Name of
Consent Holder: Osflo Fertiliser Limited
 PO Box 761
 New Plymouth 4340

Decision Date: 30 June 2015

Commencement Date: 30 June 2015

Conditions of Consent

Consent Granted: To discharge emissions into the air from the storage and
 distribution of used poultry litter fertiliser

Expiry Date: 01 June 2032

Review Date(s): June 2020, June 2026

Site Location: 70 Hursthouse Road, Tarurutangi

Legal Description: Lot 1 DP 4905 Lot 1 DP 8670 Blk VII Paritutu SD

Grid Reference (NZTM) 1702071E-5673797N

*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. At all times the consent holder shall 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.
2. After 1 June 2019, all potentially odorous material shall be contained to prevent the escape of odour directly to air, and any emissions from the material shall first be treated in a bio-filter being discharged to air.
3. The discharges authorised by this consent shall not give rise to any odour that is offensive or objectionable at or beyond the boundary of the site.
4. The consent holder shall advise the Chief Executive, Taranaki Regional Council, prior to making any change in the processes undertaken at the site, which could alter the nature of the discharge. Any such change shall then only occur following receipt of any necessary approval under the Resource Management Act. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to consents@trc.govt.nz.
5. The door of the storage facility where stockpiling of poultry litter is to be carried out shall remain closed at all times, except during entry or exit of trucks and personnel.
6. The discharge of particulate matter from any duct, vent or other emission source shall not exceed 125 milligrams of particulate matter per cubic metre of air corrected to 0 degrees Celsius, 101.3 kPa (kilopascals), on a dry gas basis.
7. The site shall be operated in accordance with an updated ' Odour Management Plan ' (OMP) prepared by the consent holder and approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity, no later than three months after the granting of this consent. The plan shall demonstrate the ability to comply with consent conditions and shall address the following matters:
 - a) minimising use of the storage facility;
 - b) operation and maintenance procedures;
 - c) prevention of off-site odour emissions;
 - d) staff training;
 - e) records of product storage and transfer; and
 - f) contingency procedures.

Consent 5918-2.0

8. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2020 and/or June 2026, 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 30 June 2015

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management

Certificate of Compliance

**Pursuant to section 139 of the Resource Management Act 1991
a certificate of compliance is hereby issued by the
Taranaki Regional Council**

| | |
|-----------------------------------|--|
| Name of certificate holder | Osflo Fertiliser Limited P O Box 761 New Plymouth 4340 |
| Site location | Various locations throughout the Taranaki region [legal description: Various locations throughout the Taranaki region] |
| Proposal/Activity | To spread organic and inorganic fertiliser onto and into land at various locations throughout the Taranaki region |
| Certification | <p>The Taranaki Regional Council hereby certifies that:</p> <p>the discharge of fertiliser onto and into land as outlined within the documentation supplied in support of the application is a permitted activity under Rule 31 of the RFWP at the date of receipt of the application for this certificate provided that it complies with and continues to comply with the following conditions:</p> <ul style="list-style-type: none">• <i>Fertiliser is approved for use under section 5 of the Fertilisers Act 1960 or under the Agricultural Compounds and Veterinary Medicines Act 1997;</i>• <i>Discharger shall at all times adopt the best practicable option to prevent or minimise any adverse effects of fertiliser drift beyond the boundary of the target property or on other non-target areas within the boundary of the property;</i> |

- *If discharge is by any other method than aerial application, discharge shall not occur directly on or above a river, lake, wetland or other surface water body, including any drain which is discharging to a surface water body; or*
- *If discharge is by aerial application, fertiliser shall be applied in a manner which does not cause or is not likely to cause an adverse effect from deposition into a river, lake, wetland or other surface water body, including any drain which discharges to a surface water body.*

Any discharge which causes any of the above conditions to be breached is not permitted and may be the subject of enforcement action.

Transferred at Stratford on 17 January 2012

For and on behalf of
Taranaki Regional Council

Director—Resource Management