Osflo Fertiliser Ltd

Monitoring Programme

Annual Report

2020-2021

Technical Report 2021-22

Working with people | caring for Taranaki

Taranaki Regional Council

Taranaki Regional Council
Private Bag 713
Stratford

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Executive summary

Osflo Fertiliser Limited (the Company) operates a poultry litter storage, blending and distribution facility located at 1319 Mountain Road, Inglewood, in the Waiongana catchment. The poultry litter is collected from farms around the Taranaki region, stored/blended on site, then sold as a registered fertiliser.

This report for the period July 2020 to June 2021 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 three resource consents, which include a total of 17 conditions setting out the requirements that the Company must satisfy. The Company holds one consent to discharge effluent to land via soakage. Another consent to discharge stormwater to land via soakage where it may enter an unnamed tributary of the Waiongana Stream, and one consent to discharge emissions into the air at this site.

During the monitoring period, the Company demonstrated an overall good level of environmental - performance.

It should be noted that the air discharge consent (10578-1) an improvement required grading was determined.

The Council's monitoring programme for the year under review included four inspections, including odour surveys and five water samples collected for physicochemical analysis.

The water samples of unnamed tributary of the Waiongana Stream indicated that the Company were in compliance with consent defined conditions on the five occasions they were collected. It is noted that the facility discharge to surface water only occurs during significant rainfall events.

Noticeable odour was observed on a few occasions during the quarterly compliance inspections. The facility is allowed noticeable, not objectionable or offensive odour beyond the boundary of the site.

Noticeable odour had been noted during complaint investigations at complainant's properties as well as at the site entrance. This occurs, on occasion, during loading and unloading exercises, when the material is agitated, or fresh from the supplier.

More than 20 complaints were received by the Council during this monitoring period, relating to objectionable odour from the facility, beyond the boundary of the site. On one occasion (2 October 2020) objectionable odour was identified by Council Officer which prompted enforcement action. A letter of explanation was requested and an abatement notice was issued. This required the facility to comply with their air discharge consent. They also received an infringement notice.

The Company were proactive in their response to the objectionable odour identification, with areas of the main storage shed closed in to prevent odour release, mesh doors were also installed to prevent mass air movement from within the shed.

The Company are also developing shelter belt/vegetative environmental buffers (VEBs), as a passive odour mitigation technique. This involves planting trees and shrubs in locations that deflect/manipulate wind, however these mitigations take time to mature. Further mitigation may be required if objectionable odours are again identified by Council Officers.

The facility has a functional odour risk management plan, this requires the Company to assess the odour potential of incoming fresh product and to divert it if necessary. This plan may require a review if objectionable odour continues to be identified beyond the boundary of the site.

No issues were reported during normal compliance inspections, and officers found the site to be in well maintained and operating within consent conditions. It has been suggested that the Company routinely assess odours at the site boundaries.

During the year, the Company demonstrated an overall good level of environmental and a high level of administrative performance with the resource consents. The rationale for this grading was the objectionable odour which prompted subsequent enforcement

For reference, in the 2020-2021 year, consent holders were found to achieve a high level of environmental performance and compliance for 86% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 11% 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 reduced slightly, due to the objectionable odour identification beyond the site boundary.

This report includes recommendations for the 2021-2022 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 2020 to June 2021 by the Taranaki Regional Council (the Council) on the monitoring programme associated with resource consents held by Osflo Fertiliser Ltd (the Company). The Company operates a chicken litter storage facility which is situated at 1319 Mountain Road, Inglewood, in the Waiongana catchment.

The report includes the results and findings of the monitoring programme implemented by the Council in respect of the consents held by the Company that relate to discharges of water within the Waiongana catchment, and the air discharge permit held by the Company 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 27th 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 RMA and the Council's obligations;
- the Council's approach to monitoring sites though annual programmes;
- the resource consents held by the Company in the Waiongana catchment;
- the nature of the monitoring programme in place for the period under review; and
- a description of the activities and operations conducted in the Company's site/catchment.

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

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

Section 4 presents recommendations to be implemented in the 2021-2022 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' in as much 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 2020-2021 year, consent holders were found to achieve a high level of environmental performance and compliance for 86% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 11% of the consents, a good level of environmental performance and compliance was achieved. [1]

[1] The Council has used these compliance grading criteria for more than 17 years. They align closely with the 4 compliance grades in the MfE Best Practice Guidelines for Compliance, Monitoring and Enforcement, 2018

1.2 Process description

The Company operates a poultry litter storage, blending and distribution facility located at 1319 Mountain Road, Inglewood. The poultry litter is used as a general agricultural fertiliser. The site is a purpose built facility, operating on a three hectare site, however the overall site area is much larger at 46 hectares. It is situated in close proximity to an unnamed tributary of the Waiongana Stream on the eastern side of Mountain Road. The site is surrounded by grazing farm land, with the nearest neighbour located some 400 meters to the west of the facility. The predominant wind direction is from the south east and the lesser from the south west.

The poultry litter is collected from farms around the Taranaki region, and sold as a registered fertiliser which is spread on pasture. The site is the administration center for collection and distribution of the used litter, with the majority of the product being taken directly from the poultry farm and provided to the general farming customer. A total of 17 people are employed in the operation, utilising seven trucks.

Figure 1 Company site layout 1319 Mountain 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

maybe blended into the litter according to customer requirements. The additives are stored in separate portions of the main storage facility.

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. Peak seasonal demand is in spring, for cropping, and in autumn, for dairy farming.

The litter is comprised of 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 are generated, both organic (aldehydes, ketones, organic acids, amines and organic sulphur compounds) and inorganic (ammonia, nitrogen oxides and hydrogen sulphide). The rate of heat generation depends on the amount of moisture and oxygen available.

Odour control

The litter is stored in two large, covered stockpiling areas (Photo 1), these form the main storage and blending facility (the main storage facility). The fresh litter is deposited on one side of the storage facility (eastern side), where it is composted with sawdust. Older more mature litter is stockpiled on the other side (western side). In this area the more mature litter can be mixed with additives as required, prior to being loaded for customers.

Odours at the facility were originally controlled with good air flow through the specially designed roof and sides of the facility, this actively dried the material. During the planning stage of this establishment, a separate odour assessment of the project was undertaken by the consultant's Golder Associates. This added confidence to the proposal prior to the granting of the consents. However, in this monitoring period, the main storage facility was modified due the finding of objectionable odour on one occasion. The modifications included closing in the rear and sides of the facility, and also fitting mesh doors on the entrance and exits of the facility, in order to prevent substantial air movement.

The Company has undertaken substantial planting in order to develop vegetative environmental buffers (VEBs) across the site. The effectiveness of this passive form of odour mitigation will need to be assessed over time, as they take time to mature.

The Company have not ruled out the installation of a bio-filter, should objectionable odours, beyond the site boundary, occur in future.

Photo 1 Osflo facility main storage facility

Photo 2 Rear of the Osflo main storage facility

Wastewater/stormwater

Wastewater from the facility is strictly limited to the truck wash down area (Photo 3). This is a purpose built wash down bay, which is partially enclosed to prevent spray drift. The wastewater from the bay is treated in a series of soakage ponds which discharge to land.

Photo 3 Truck wash area

Clean stormwater from the roof of the storage facility and the associated workshop and office area is collected in onsite storage tanks and reused on site when required. Once these have been filled, the system discharges the remaining stormwater to land, via a cut stormwater channel. In extreme weather events stormwater may discharge at location STW002100 (Figure 1) into an unnamed tributary of the Waiongana Stream. This discharge point, after a set mixing zone, is where the main surface water monitoring location (WGA000210) site is located.

1.3 Resource consents

The Company holds three resource consents and a certificate of compliance, the details of which are summarised in the table below. Summaries of the conditions attached to each permit are set out in Section 3 of this report.

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

Table 1 Resource consents held by the Company

Consent number	Purpose	Granted	Review	Expires
Air discharge permit				
10578-1.0	To discharge emissions to air from the storage, blending and distribution of fertiliser.	August 2018	June 2020	June 2032
Discharges of waste to land				
10579-1.0	To discharge wash water from truck wash facilities into land via soakage pits.	August 2018	June 2020	June 2032

Consent number	Purpose	Granted	Review	Expires
10580-1.0	To discharge stormwater from a fertiliser storage facility and associated yard to land where it may enter an unnamed tributary of the Waiongana Stream.	August 2018	June 2020	June 2032
Certificate of compliance				
7463-0	To spread various organic and inorganic fertiliser onto and into land at various locations throughout the Taranaki region.	Transferred at Stratford January 2012		

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 Company 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;
- 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 Company site was visited four times during the monitoring period for routine inspections. With regard to consents to discharge to water. The main points of interest were plant processes with potential or actual discharges to receiving watercourses. This included contaminated stormwater and process wastewaters. Air inspections focused on plant processes with associated actual and potential emission sources and characteristics, including potential odour, dust, noxious or offensive emissions.

Sources of data being collected by the 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.

1.4.4 Chemical sampling

The Council undertook sampling of the surface water of the unnamed tributary of the Waiongana Stream, downstream of the discharge point, post the mixing zone at location WGA000210 (Figure 1). The stormwater was not discharging at location STW002100 during any of the monitoring visits, as it only discharges during periods of extreme rainfall. Accordingly, no samples were collected from this source during the monitoring period.

Five surface water monitoring rounds were undertaken on the unnamed tributary of the Waiongana Stream, just below the mixing zone. As per the discharge consent 10580-1.0, the surface water monitoring location (WGA000210) is required some 25 m downstream of the discharge. This location is monitored for the following parameters:

- Ammoniacal nitrogen
- Un-ionised ammonia
- Turbidity
- pH
- Temperature
- Dissolved carbonaceous bio-chemical oxygen demand
- *E. coli*
- Conductivity

2 Results

2.1 Inspections

30 July 2020

At the time of inspection the weather was slightly cloudy with a light north east wind. No odour was noted at the entrance to the property. The inspection was undertaken with the site manager and an environmental representative whom escorted the officer for the duration of the inspection and site walkover. A brief odour assessment was undertaken by the reception building and a light chicken litter odour was noted. At the time a Jackson Transport Ltd truck was washing down in the wash down bay. A new storage barn had been constructed by the container shed. This was installed primarily to provide dry housing for equipment and machinery whilst onsite. This was located to the west of the main storage facility. In front of the storage barn was also a new storage unit for storing gravels for use in road development on farm tracks.

The main storage facility appeared to be about half full with drying chicken litter and a smaller portion of bio-char[2] on the eastern edge. It was noted that the additive bio-char was being used in a Company trial. The odour in this area was noted as constantly noticeable. The material was well stored and limited tracking of material was evident through the storage facility, which would indicate that the wash down bay was working as proposed. On exiting the storage barn the odour intensity quickly relented to barely noticeable.

The fuel tank had no indication of any spills. The stormwater system had evidence of some previous heavy flows, due to one of the ponds holding a small amount of water. The waste discharge and associated land soakage ponds from the truck wash down area were all quite full. There was a noticeable odour in close proximity to these ponds.

During the inspection samples were collected, along with in-situ data using a Yellow Springs Instrument (YSI) multi-parameter field metre, which was used to record pH, conductivity, dissolved oxygen and temperature, from the unnamed tributary of the Waiongana Stream.

No discharge sample was collected as the stormwater was not discharging at the time.

3 February 2021

At the time of inspection the weather was fine and warm with very little wind. An odour survey was undertaken at the entrance and normal country odours were noted. Another odour survey was undertaken on site at the facility offices and a light (barely noticeable) odour of chicken litter was found.

A site walk over was undertaken along the western boundary with the site manager and the environmental representative. The location for the proposed wetland enhancement area, which is planned to be planted out with additional natives, to provide a vegetative environmental buffer, was also visited. No discernible odour was noted during the site walkover. Since the previous inspection and in response to infringement notice 23724 the main storage facility had been further developed. Doors had been fitted on either side of the main storage facility.

The doors were made of mesh to allow some air flow, while reducing a substantial amount of air flow. The rear of the facility had been closed in, as prior this had been open to allow air flow. The odour within this

[2] Biochar is a fine-grained charcoal high in organic carbon and largely resistant to decomposition. It is produced from the thermal decomposition of organic feedstock – generally at relatively slow heating rates under oxygen limited conditions (slow pyrolysis) – although it may involve other techniques. Source Massey University https://www.massey.ac.nz/massey/learning/colleges/college-of-sciences/research/agriculture-environment-research/biochar-research-centre/about-biochar/about-biochar_home.cfm

storage facility was described as objectionable and ammonia was noted. The facility was about three quarters full.

In the rear storage area a shelter belt was beginning to mature and an earthen berm had also been constructed. A large hole remained where the earth had been extracted to form the berm. The odour in this area was defined as consistently noticeable however this is directly downwind of the main storage facility and within 25 m of the site boundary. Further vegetative environmental barriers are proposed by the Company, which will be developed across the western and southern boundaries, in a south easterly direction. The primary proposed purpose of these planned barriers is to remove the facility from view from the surrounding houses which to the west and south west of the site. They are also proposed to slow up air flow and help dissipate any potential odour.

The stormwater system was observed, this appeared in good order. The wash down facility was also observed with the associated three land soakage ponds. Plans are in place to recycle the dirty/grey water r for use in the truck wash from the land soakage ponds. Due to the extended period of fine weather, there was no discharge to the unnamed tributary of the Waiongana Stream, atream sample was collected. The facility was operating within its consent conditions at the time of inspection.

28 April 2021

At the time of the inspection the weather was fine and clear, with a light south east wind. An odour survey was conducted at the site entrance, where by a noticeable (chicken litter) odour was noted. The odour was fairly consistent for a two minute period, before dissipating. It is further noted this was the first observation of odour at this location, close to Mountain Road.

Recent odour complaints were discussed, as was the noticeable odour at the main gate. Noticeable odour was observed at the site office. At the time a new office building was being developed next to the existing site office. The inspection took in the overall flat standing on site, the mechanic shed, the vehicle housing shed and the main storage facility.

The main storage facility was about a half full. The fresh litter side of the main storage facility contained a large amount of material compared to the freshly composted mature material side. The odour in the main storage facility was consistent and borderline objectionable. The doors were open at the time, as there were vehicle movements, with fresh material in the process of being deposited. The odour quickly dissipated outside of the main storage facility.

Overall there was a high degree of housekeeping prevalent across the site. The fuel bowser appeared in good order with the bowser being refuelled at the time. The hard standing was holding up well.

The inspection then took in the rear of the main storage facility, the back of the facility had been closed in to prevent odours from escaping. Discussions were held about the proposed vegetative environmental buffers, which were planned to be planted this winter.

Substantial planting was planned and this will be reported on in future inspections. The current plantings on the bunding to the west of the main storage facility were developing well. The more mature areas were beginning to thicken up. The buffers are proposed to aid by dissipating odour when fully developed. The effectiveness of this passive odour mitigation technique will be assessed over time in subsequent inspections.

The car park had been recently extended. The associated truck wash down area was assessed and found to be in good order. The first stage land soakage pond looked reasonably full, with a noticeable localised odour in this area. No seepage was observed.

Surface water sample collected from the unnamed tributary of the Waiongana Stream. No stormwater sample was collected. At the time the facility was operating within its consent conditions.

9 June 2021

At the time of the inspection the weather was fine with light winds from the south east. An odour survey was conducted at the site entrance. An Osflo type odour was barely noticeable. At the site offices, the level of odour was described as noticeable.

An overall site inspection was then conducted. Works were being undertaken to construct fencing associated with shelter belt /vegetative environmental barriers (VEBs). This was undertaken on the south west side of the site. This was proposed to reduce the visual impact of the site and also act as vegetative barrier, intended as a passive odour mitigation technique. Minimal odours were observed in the location, due to the prevailing wind direction.

The rear of the main storage facility was then observed. The main storage facility remained shut in, with minimal odour noted on the up wind side. The earlier established Japanese cedars were beginning to take shape in this area, as part of the vegetative environmental buffers

Within the main storage facility, one side had been practically cleaned out. This was part of regular cycling of material within the facility. The side cleaned out was the eastern side of the facility (it was communicated that the Fire Department had recently met with Osflo, to undertake contingency planning with the Company, in the event of a fire at the facility).

In terms of additional odour control, the site manager discussed that the Company may not rule out the construction and use of a bio-filter to treat odour emissions in future, should odour be an issue moving forward.

The fuel store appeared in good order with no apparent spillage visible. The truck wash down pad appeared clean with good housekeeping prevalent. A surface water sample from the unnamed tributary of the Waiongana was collected.

The land soakage area, associated with the land discharge permit 10579-1.0, was assessed. The first two ponds held fluid, while the third appeared to have been recently cleaned out. The other discharge permit (10580-1.0) was also assessed. Due to the lack of rainfall, had barely discharged.

The facility was found to be in compliance with conditions across all three consents, including the air discharge permit (10578-1.0). Upon the leaving the facility, it was noted that truck movements were occurring within the main storage facility. Due to this, the level of odour did increase down wind, at the site offices. This was deemed consistently noticeable. As it was noted on site, this was not a breech in the air discharge permit.

2.2 Water

2.2.1 Results of abstraction and discharge monitoring

As previously discussed, the only discharge to surface water is stormwater during extreme rainfall events. The surface water running off the site is derived from roof surfaces and surrounding hard standing at the facility. Five surface water samples were collected from the unnamed tributary of the Waiongana Stream, at sample location WGA000210 (Figure 1).

The discharge of stormwater is a consented activity. Specifically, the discharge quality must meet the criteria defined by condition 3 of consent 10580-1.0. This stipulates the discharge must be within the following standards:

- pH within the range of 6.0-9.0
- Total recoverable oil and grease no greater than 15 g/m^3.
- Carbonaceous biochemical oxygen demand no greater than 10 g/m^3.

- Dissolved reactive phosphorous no greater than 5 g/m^3.
- Suspended solids no greater than 100 g/m^3.
- Ammoniacal nitrogen no greater than 5 g/m^3.

In addition to condition 3, condition 4 details that the following effects should not occur as a result of a stormwater discharge, beyond a 25 m mixing zone.

- The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
- Any conspicuous change in the colour or visual clarity;
- Any emission of objectionable odour;
- The rendering of fresh water unsuitable for consumption by farm animals;
- Any significant adverse effects on aquatic life;
- A rise in dissolved carbonaceous biochemical oxygen of greater than 2.0 g/m^3; and
- Un-ionised ammonia exceeding 0.025 g/m^3.

In order to assess these conditions the Council collected four surface water samples from the receiving waters of the unnamed tributary of the Waiongana Stream (WGA000210). The results are provided in the following table.

Table 2 Osflo surface water monitoring results 2020-2021

Osflo surface water monitoring	Site	Consent limit 10580-1.0	WGA000210	WGA000210	WGA000210	WGA000210	WGA000210
2020-2021	Collected		07 Jul 2020	30 Jul 2020	03 Feb 2021	28 Apr 2021	09 Jun 2021
Parameter	Time		09:10	10:45	11:12	10:20	10:37
Dissolved C-Biochemical Oxygen Demand ($CBOD_5$)	g O^2/m^3	<2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dissolved Reactive Phosphorus	g/m^3		< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Electrical Conductivity (EC)	µS/cm		116	112	115	119	117
	mS/m		11.6	11.2	11.5	11.9	11.7
Escherichia coli	MPN / 100 mL	≤540*	340	138	122	285	225
Free Ammonia	g/m^3	≤0.25	0.00029	0.00038	0.00025	0.00026	0.000182
pH	pH Units		6.8	6.9	6.7	6.7	6.5
Sample Temperature	°C		11.9	11.6	15.9	13.1	12.4
Total Ammoniacal-N	g/m^3		0.178	0.19	0.148	0.191	0.21
Total Ammoniacal-N adjusted to pH 8	g/m^3	0.4*	0.069	0.076	0.056	0.072	0.077
Turbidity - ISO 7027 Method	FNU		4.5	5.9	2.1	1.53	4.4
*National Policy Statement for Freshwater Management 2020 (NPS-FM)							

- The five samples of the receiving waters (WGA000210) were compliant with condition 4 of consent 10580-1.0.
- A sample of the stormwater discharge (STW002100) was not collected due to the fact the Company was not discharging during inspection times.
- The only contaminated discharge occurs to land, by land soakage, via a multi soakage pond system (Figure 1).

- Two further analyte (NH_4 and E.coli) guidelines[3] have been added to the surface water monitoring this annum. On all occasions the results were compliant with guideline values. It is noted that in the case of E.coli, this relates to primary contact sites and human health.

2.3 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 Company. 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 3 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 2020-2021 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 3 Incidents, investigations, and interventions summary table

Date	Details	Compliant (Y/N)	Enforcement Action Taken?	Outcome
02/09/2020	Complaint received regarding odour from Osflo Fertilisers, Mountain Road, Inglewood.	Y	No	-
02/10/2020	A complaint was received regarding a strong fertiliser odour on Mountain Road.	N	Yes	Letter of explanation requested. Abatement notice issued which recommended the company take measures to mitigate offensive odour emissions. Infringement notice issued.
01/10/2020	A complaint was received regarding a strong fertiliser odour on Mountain Road.	Y	No	-
07/10/2020	A complaint was received regarding a strong fertiliser odour on Mountain Road.	Y	No	-

[3] National Policy Statement for Freshwater Management 2020, Table 5 and Table 22.

Date	Details	Compliant (Y/N)	Enforcement Action Taken?	Outcome
11/01/2020	Four complaints were received in regard to an offensive odour on Mountain Road, Inglewood.	Y	No	-
01/03/2021	Complaint received regarding an odour coming from Osflo Mountain Road, Inglewood.	Y	No	-
12/03/2021	A complaint was received concerning an offensive Osflo odour on Mountain Road, Inglewood.	Y	No	-
16/03/2021	A complaint was received concerning an offensive Osflo type odour on Mountain Road, Inglewood.	Y	No	-
06/04/2021	A complaint was received concerning an offensive Osflo type odour on Mountain Road, Inglewood.	Y	No	-
09/04/2021	Complaint regarding odour Osflo Inglewood.	Y	No	-
13/04/2021	A complaint was received concerning odour discharging from Osflo on Mountain Road, Inglewood.	Y	No	-
22/04/2021	A complaint was received concerning an odour.	Y	No	-
27/04/2021	Two complaints were received in relation to an offensive odour discharging from Osflo.	Y	No	-
07/05/2021	A complaint was received regarding a strong odour coming from Osflo.	Y	No	-
21/05/2021	A complaint was received concerning odour discharging from a fertiliser storage site at Mountain Road, Inglewood.	Y	No	-

3 Discussion

3.1 Discussion of site performance

The Company facility at 1319 Mountain Road completed its second full monitoring period. This site became operational in February 2019, but still had some uncompleted areas, such as the north facing wall and associated emergency exits. Since that date the Company have been focussed on finishing the whole facility.

In terms of consents held:

To discharge emissions to air from the storage, blending and distribution of fertiliser, consent **10578-1.0**.

The Company, in response to a spate of odour complaints (21), including one complaint which did identify objectionable odour. Resulting in an abatement notice (EAC-23601) and an infringement notice. Undertook the following site modifications

The main storage facility. Mesh doors were installed on either side of the facility, aimed at reducing substantial air flow movement. The rear and the sides of the facility were enclosed. The Company has also not ruled out the construction and operation of a bio-filter, to treat internal odour of the main storage facility.

In addition, the Company are progressing with the passive odour mitigation technique known as vegetative environmental buffers (VEBs). The original shelter belt, constructed to the west of the main storage facility is thickening up. While the newly planted areas continue to grow. This is proposed to passively reduce odour emissions and also reduce any visual impact of the site on the surrounding neighbours.

The Company has expressed they are in the process of developing more VEBs along the western and southern boundaries, with works initiated at the end of the 2020-2021 monitoring period. A wetland enhancement area was also proposed for the western boundary area. The effectiveness of the site modifications will be assessed over time. They demonstrate that the Company are taking their air impacts seriously.

To discharge wash water from truck wash facilities to land via soakage, consent **10579-1.0**.

This system appeared to be functioning as planned, in accordance with the submitted application. The partially enclosed truck wash reduces the potential for spray drift and the associated concentrate pad area was observed to clean during inspections, which demonstrates regular housekeeping.

The associated land soakage ponds are regularly cleaned out, with one pond noted to be cleaned out during inspections. There were no visible signs of the ponds overflowing and these are observed constantly by site staff.

To discharge stormwater from a fertiliser storage facility and associated yard where it may enter an unnamed tributary of the Waiongana Stream, consent **10580-1.0**.

The stormwater discharge to the unnamed tributary for the Waiongana Stream only occurs under significant heavy rainfall. This discharge is for stormwater only due to the site setup, which has separated clean stormwater from contaminated process waters. The consent required contingency and management plans were received in December 2019. This consent is functioning as per the original application.

Overall, the facility appeared well managed during inspections, with good housekeeping prevalent across the site. The main process change this monitoring period was the enclosure of the main storage facility, the sides and rear, with associated mesh door coverings.

It is suggested that adherence to the odour risk management plan is continued. It has also been suggested that the Company undertake odour surveys on the site boundaries during operations. Especially in light

wind conditions. There may well be grounds to update the odour risk management plan to add this facet to the plan, or to review the overall plan should problem odour persist.

3.2 Environmental effects of exercise of consents

Environmental effects associated with the exercise of consents will be discussed by consent.

To discharge emissions to air from the storage, blending and distribution of fertiliser, consent **10578-1.0**.

The storage of chicken litter can be an odorous exercise. The facility's original plan to counter the odours associated with this material was by allowing for good wind flow through their facility, which also dries the litter.

During this monitoring period the Council received over 20 complaints from neighbours. On one occasion objectionable odour was identified by a Council Officer, this prompted enforcement and required the facility to maintain compliance with their air discharge consent.

Noticeable odour was observed on a few occasions during the quarterly compliance inspections. The facility is allowed noticeable, not objectionable or offensive odour beyond the boundary of the site. Noticeable odour has also been noted during incidents and subsequent investigations, both at complainant's properties as well as at the site entrance. This occurs, on occasion, during loading and unloading exercises, when the material is agitated, or fresh from the supplier.

As previously discussed, post the enforcement actions, the Company were proactive in their odour mitigation effort. It is noted however, in the case of shelter belt/VEB development, these mitigations take time to come to grow and mature. In the short term, further mitigation may be required if objectionable odours continue to be identified by Council Officers.

The facility has a functional odour risk management plan which they refer to when required. This also requires the Company to assess the odour potential of incoming fresh product and to divert it, if possible, if it is found to be vastly odorous. This plan may require a review if further objectionable odour is identified beyond the boundary of the site in the future.

To discharge wash water from truck wash facilities to land via soakage, consent **10579-1.0**.

Minimal effects were noted as a process of the exercise of this consent. No overflow has been observed. There is an odour noted in close proximity to these ponds, however this odour reduces quickly. These have a regular clean out schedule which appears to occur, as noted during inspections.

To discharge stormwater from a fertiliser storage facility and associated yard where it may enter an unnamed tributary of the Waiongana Stream, consent **10580-1.0**.

In this monitoring period no samples of the discharge were obtained. The unnamed tributary of the Waiongana Stream was sampled on five separate occasions this monitoring period. The results were found to be compliant with consent conditions on all five occasions. This also included additional NPS-FM guidelines for ammonia and E.coli.

3.3 Evaluation of performance

A tabular summary of the consent holder's compliance record for the year under review is set out in Tables 4-6.

Table 4 Example Summary of performance for consent 10578-1.0

Purpose: ***To discharge emissions to air from the storage, blending and distribution of fertiliser***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Display best practicable option to minimise adverse effects on the environment	Inspections.	No
2. 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	Inspections and odour surveys	No. Over 20 odour complaints were received, one was substantiated A letter of explanation was requested. An abatement notice and infringement notice were issued
3. 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	Inspection noted that the rear and sides of the main storage facility had been closed in. Mesh doors have also been fitted to the entrance and exits of the main storage facility. This was communicated by the Company prior to undertaking the actions.	Yes
4. The site shall be operated in accordance with an 'Odour Management Plan' (OMP)	Provided.	Yes Draft received 07 June 2019, finalised 08 July 2019
5. Optional review provision re environmental effects	Not scheduled for consideration during year under review. Next consideration June 2022	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		**Improvement Required** **High**

N/A = not applicable

Table 5 Summary of performance for consent 10579-1.0

Purpose: ***To discharge wash water from truck wash facilities into land via soakage***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. The exercise of this consent shall be undertaken in general accordance with the information provided in support of the application for this consent	Inspections	Yes
2. The consent holder shall at all times adopt the best practicable option	Inspections	Yes
3. This consent shall lapse on 30 September 2023, unless the consent is given effect to before the end of that period	Effect given	Yes
4. Review of consent	Not scheduled for consideration during year under review. Next consideration June 2022	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 6 Summary of performance for consent 10580-1.0

Purpose: ***To discharge stormwater from a fertiliser storage facility and associated yard to land where it may enter an unnamed tributary of the Waiongana Stream***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. The consent holder shall at all times adopt the best practicable option	Inspections	Yes
2. The stormwater discharged shall only be from the area shown on the plan attached as 'Appendix 2'	Inspections	Yes

Purpose: *To discharge stormwater from a fertiliser storage facility and associated yard to land where it may enter an unnamed tributary of the Waiongana Stream*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
3. Constituents of any discharges to the unnamed tributary of the Waiongana Stream that arise as a result of the exercise of this consent shall meet the standards: - pH (6-9) - Oil and grease (<15 g/m^3) - CBOD (10 g/m^3) - DRP (5 g/m^3) - Suspended solids (100 g/m^3) - Ammoniacal nitrogen (5 g/m^3)	Sampling of discharge when possible	N/A
4. The discharge post a 25 m mixing zone shall not cause the following effects in surface water	Inspection and sampling	Yes
5. Within 3 months of the consent being granted the consent holder shall submit and regularly update a 'Contingency Plan' 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	Plan received 9 December 2019	Yes
6. Within 3 months of the consent being granted the site shall be operated in accordance with a 'Management Plan' prepared by the consent holder and approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity	Plan received 9 December 2019	Yes

Purpose: *To discharge stormwater from a fertiliser storage facility and associated yard to land where it may enter an unnamed tributary of the Waiongana Stream*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
7. 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	Council notifications	Yes
8. Optional review of consent	Not scheduled for consideration during year under review. Next consideration June 2022	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 7 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	-	-	-
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	-	-

Year	Consent no	High	Good	Improvement req	Poor
2016-2017	4333-3	1	-	-	-
	5918-2	-	1	-	-
2017-2018	4333-3	1	-	-	-
	5918-2	-	-	1	-
2018-2019	4333-3	1	-	-	-
	5918-2	1	-	-	-
	10578-1	1	-	-	-
	10579-1	1	-	-	-
	10580-1	1	-	-	-
2019-2020	10578-1	1	-	-	-
	10579-1	1	-	-	-
	10580-1	1	-	-	-
2020-2021	10578-1	-	-	1	-
	10579-1	1	-	-	-
	10580-1	1	-	-	-
Totals		21	9	2	1

During the year, the Company demonstrated a good level of environmental and high level of administrative performance with the resource consents as defined in Section 1.1.4. Ratings are as defined in Section 1.1.4

3.4 Recommendations from the 2019-2020 Annual Report

In the 2019-2020 Annual Report, it was recommended:

1. THAT in the first instance, monitoring of consented activities at the Company site in the 2020-2021 year continue at the same level as in 2019-2020.
2. 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.

3.5 Alterations to monitoring programmes for 2021-2022

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 2021-2022 monitoring period the compliance monitoring programme remains unchanged.

However, if subsequent odour impacts continue, the Company will be requested to update their odour risk management plan (OMP).

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 2021-2022.

4 Recommendations

1. THAT in the first instance, monitoring of consented activities at the Company site in the 2021-2022 year continue at the same level as in 2020-2021.
2. THAT should there be issues with environmental or administrative performance in 2021-2022, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.
3. If subsequent odour impacts continue, the Company will be requested to update their odour risk management plan (OMP).

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.
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 25°C and expressed in µS/cm.
Cu*	Copper.
Cumec	A volumetric measure of flow- 1 cubic metre per second (1 m^3s^{-1}).
DO	Dissolved oxygen.
DRP	Dissolved reactive phosphorus.
E.coli	Escherichia coli, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample.
Ent	Enterococci, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre of sample.
F	Fluoride.
FC	Faecal coliforms, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample.
FNU	Formazin nephelometric units, a measure of the turbidity of water.
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.
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.
MPN	Most Probable Number. A method used to estimate the concentration of viable microorganisms in a sample.
µS/cm	Microsiemens per centimetre.
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.
OMP	Odour risk management plan.
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).
Pb*	Lead.
pH	A numerical system for measuring acidity in solutions, with 7 as neutral. Numbers lower than 7 are increasingly acidic and higher than 7 are increasingly alkaline. The scale is logarithmic i.e. a change of 1 represents a ten-fold change in strength. For example, a pH of 4 is ten times more acidic than a pH of 5.
Physicochemical	Measurement of both physical properties (e.g. temperature, clarity, density) and chemical determinants (e.g. metals and nutrients) to characterise the state of an environment.
PM_{10}, $PM_{2.5}$, $PM_{1.0}$	Relatively fine airborne particles (less than 10 or 2.5 or 1.0 micrometre diameter, respectively).
Resource consent	Refer Section 87 of the RMA. Resource consents include land use consents (refer Sections 9 and 13 of the RMA), coastal permits (Sections 12, 14 and 15), water permits (Section 14) and discharge permits (Section 15).
RMA	*Resource Management Act 1991* and including all subsequent amendments.
SS	Suspended solids.
SQMCI	Semi quantitative macroinvertebrate community index.
Temp	Temperature, measured in °C (degrees Celsius).
Turb	Turbidity, expressed in NTU.
VEB	Vegetative environmental buffer
Zn*	Zinc.

*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 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.

Taranaki Regional Council (2020): "Osflo Fertiliser Ltd Monitoring Programme Report 2019-2020". Technical Report 2020-70.

Taranaki Regional Council (2019): "Osflo Fertiliser Ltd Monitoring Programme Report 2018-2019". Technical Report 2019-15.

Taranaki Regional Council (2018): "Osflo Fertiliser Ltd Monitoring Programme Report 2017-2018". Technical Report 2018-32.

Taranaki Regional Council (2017): "Osflo Fertiliser Ltd Monitoring Programme Report 2016-2017". Technical Report 2017-12.

Taranaki Regional Council (2016): "Osflo Fertiliser Ltd Monitoring Programme Report 2015-16". Technical Report 2016-81.

Taranaki Regional Council (2015): "Osflo Fertiliser Limited Monitoring Programme Report 2013-15". Technical Report 2015-48.

Taranaki Regional Council (2013): "Osflo Fertiliser Limited Monitoring Programme Report 2010-2013". Technical Report 2013-33.

Taranaki Regional Council (2010): "Osflo Spreading Industries Monitoring Programme Report 2009-2010". Technical Report 2010-111.

Taranaki Regional Council (2009): "Osflo Spreading Industries Monitoring Programme Report 2008-2009". Technical Report 2009-31.

Taranaki Regional Council (2008): "Osflo Spreading Industries Monitoring Programme Report 2007-2008". Technical Report 2008-38.

Taranaki Regional Council (2007): "Osflo Spreading Industries Monitoring Programme Report 2006-2007". Technical Report 2007-103.

Taranaki Regional Council (2006): "Osflo Spreading Industries Monitoring Programme Report 2005-2006". Technical Report 2006-90.

Taranaki Regional Council (2005): "Osflo Spreading Industries Monitoring Programme Report 2004-2005". Technical Report 2005-112.

Taranaki Regional Council (2004): "Osflo Spreading Industries Monitoring Programme Report 2003-2004". Technical Report 2004-92.

Taranaki Regional Council (2003): "Osflo Spreading Industries Monitoring Programme Report 2001-2003". Technical Report 2003-30.

Taranaki Regional Council (2002b): "Osflo Spreading Industries Limited. Analysis of Odour Diaries 2002-2003". July 2003.

Taranaki Regional Council (2001): "Osflo Spreading Industries Monitoring Programme Annual Report 2000-2001". Technical Report 2001-69.

Taranaki Regional Council (2000): "Osflo Spreading Industries Resource Consent Monitoring Programme Annual Report 1999-2000". Technical Report 2000-21.

Taranaki Regional Council (1999): "Osflo Spreading Industries Resource Consent Monitoring Programme Annual Report 1998-99". Technical Report 99-34.

Taranaki Regional Council (1998): "Osflo Spreading Industries Resource Consent Monitoring Programme Annual Report 1997-98". Technical Report 98-30.

Taranaki Regional Council (1997a): "Regional Air Quality Plan for Taranaki".

Taranaki Regional Council (1997b): "Osflo Spreading Industries Resource Consent Monitoring Programme Annual Report 1996-97". Technical Report 97-19.

Taranaki Regional Council (1996): "Osflo Spreading Industries Resource Consent Monitoring Programme Annual Report 1995-96". Technical Report 96-61.

Taranaki Regional Council (1995): "Osflo Spreading Industries Resource Consent Monitoring Programme Annual Report 1994-95". Technical Report 95-60.

Appendix I

Resource consents held by Osflo Fertiliser Limited

(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:	Osflo Fertiliser Limited PO Box 761 New Plymouth 4340
Decision Date:	17 August 2018
Commencement Date:	17 August 2018

Conditions of Consent

Consent Granted:	To discharge emissions to air from the storage, blending and distribution of fertiliser
Expiry Date:	1 June 2032
Review Date(s):	June 2020 and at 2-yearly intervals thereafter and in accordance with special condition 5
Site Location:	1319 Mountain Road, Inglewood
Grid Reference (NZTM)	1705313E-5667164N

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. 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, as shown in 'Appendix 1'.

3. 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 1991. 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.

4. The site shall be operated in accordance with an 'Odour Management Plan' (OMP) 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 will be managed to achieve compliance with the consent conditions and shall address the following matters:

   a) raw material quality check and acceptance;
   b) washwater pond de-sludging procedure;
   c) monitoring of stored product including records of product storage and transfer;
   d) operation of a meteorological recording station;
   e) site odour assessments;
   f) operation and maintenance procedures;
   g) prevention of off-site odour emissions;
   h) staff training; and
   i) contingency procedures.

5. 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:

   a) during the month of June 2020 and at 2-yearly intervals thereafter; and/or
   b) within 3 months of receiving a notification under special condition 3 above.

   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 17 August 2018

For and on behalf of
Taranaki Regional Council

_____

A D McLay
Director - Resource Management

Appendix 1: Boundary of the site.

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:	17 August 2018
Commencement Date:	17 August 2018

Conditions of Consent

Consent Granted:	To discharge washwater from truck wash facilities into land via soakage pits
Expiry Date:	1 June 2032
Review Date(s):	June 2020 and at 2-yearly intervals thereafter
Site Location:	1319 Mountain Road, Inglewood
Grid Reference (NZTM)	1705252E-5667255N
Catchment:	Waiongana

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

General condition

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

Special conditions

1. The exercise of this consent shall be undertaken in general accordance with the information provided in support of the application for this consent. Where there is conflict between the application and consent conditions, the conditions shall prevail.

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 adverse effects of the discharge on the environment, including by:

    a) removing as much solid matter from the truck as practicable (e.g. by sweeping) before washing it; and
    b) removing accumulated solid material from the soakage pit as necessary.

3. This consent shall lapse on 30 September 2023, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

4. 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 at 2-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) requiring the installation of monitoring bores to determine effects on groundwater, and potential effects on surface water, if sampling of the discharge indicates the need for such monitoring.

Signed at Stratford on 17 August 2018

For and on behalf of
Taranaki Regional Council

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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:	Osflo Fertiliser Limited PO Box 761 New Plymouth 4340
Decision Date:	17 August 2018
Commencement Date:	17 August 2018

Conditions of Consent

Consent Granted:	To discharge stormwater from a fertiliser storage facility and associated yard to land where it may enter an unnamed tributary of the Waiongana Stream
Expiry Date:	1 June 2032
Review Date(s):	June 2020 and at 2-yearly intervals thereafter and in accordance with special condition 8
Site Location:	1319 Mountain Road, Inglewood
Grid Reference (NZTM)	1705252E-5667362N
Catchment:	Waiongana

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

General condition

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

Special conditions

1. 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.

2. The stormwater discharged shall only be from the area shown on the plan attached as 'Appendix 2'.

3. Constituents of any discharges to the unnamed tributary of the Waiongana Stream that arise as a result of the exercise of this consent shall meet the standards shown in the following table.

Constituent	Standard
pH	Within the range 6.0 to 9.0
total recoverable oil and grease	Concentration not greater than 15 gm^{-3}
CBOD (carbonaceous biochemical oxygen demand)	10 gm^{-3}
dissolved reactive phosphorus	5 gm^{-3}
suspended solids	100 gm^{-3}
ammoniacal nitrogen	5 gm^{-3}

4. After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to any or all of the following effects in the receiving water:

   a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
   b) any conspicuous change in the colour or visual clarity;
   c) any emission of objectionable odour;
   d) the rendering of fresh water unsuitable for consumption by farm animals;
   e) any significant adverse effects on aquatic life;
   f) a rise in dissolved carbonaceous biochemical oxygen of greater than 2.0 g/m^3; and
   g) un-ionised ammonia exceeding 0.025 g/m^3.

5. Within 3 months of the consent being granted the consent holder shall submit and regularly update a 'Contingency Plan' 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 and any amended versions shall be provided to the Chief Executive of the Taranaki Regional Council.

6. Within 3 months of the consent being granted the site shall be operated in accordance with a 'Management Plan' 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) general housekeeping; and
   c) management of the treatment systems.

   Note: A Stormwater Management Plan template is available in the Environment section of the Taranaki Regional Council's web site www.trc.govt.nz.

7. 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, 1991. 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.

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:

   a) during the month of June 2020 and at 2-yearly intervals thereafter; and/or
   b) within 3 months of receiving a notification under special condition 7 above;

   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 17 August 2018

For and on behalf of
Taranaki Regional Council

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A D McLay
Director - Resource Management

Appendix 2: Area of stormwater, including roof water and truck parking.