

ANZCO Foods Waitara Ltd
Monitoring Programme
Annual Report
2019-2020

Technical Report 2020-47

Taranaki Regional Council

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Executive summary

ANZCO Foods Waitara Ltd (ANZCO) operates a food (meat) manufacturing complex located on Domett Street at Waitara, in the Waitara River catchment. This report for the period July 2019 to June 2020 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess ANZCO'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 ANZCO's activities.

ANZCO holds two resource consents, which include a total of 11 conditions setting out the requirements that ANZCO must satisfy. The consents allow the discharge of wastewater and stormwater into the Waitara River.

During the monitoring period, ANZCO demonstrated an overall high level of environmental performance.

The Council's monitoring programme for the year under review included two site inspections. Cooling water was sampled by an ANZCO contractor on a monthly basis, and additional samples were collected by the Council on one occasion for an inter-laboratory comparison.

The monitoring showed that the site was generally tidy and well managed. No evidence of adverse environmental effects was discovered in the Waitara River adjacent to the site. Elevated concentrations of un-ionised ammonia were discovered in five cooling water samples during the first four months of the monitoring period. These occurrences coincided with the offseason maintenance window, when plant maintenance and repairs can inadvertently introduce ammonia into the cooling waters. Despite these elevated concentrations, cooling water discharges during this maintenance window likely had little environmental effect, due to their low volumes and that they were redirected to land. Near the start of 2020, ANZCO installed a new treatment and land disposal system for the cooling water discharges. There is now no direct conveyance of cooling water into the Waitara River.

There were no unauthorised incidents recording non-compliance in respect of this Company during the period under review.

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

For reference, in the 2019-2020 year, consent holders were found to achieve a high level of environmental performance and compliance for 81% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 17% of the consents, a good level of environmental performance and compliance was achieved.

In terms of overall environmental and compliance performance by the consent holder over the last several years, this report shows that the consent holder's performance has improved during the year under review.

This report includes recommendations for the 2020-2021 year, including a recommendation that this tailored monitoring programme, as it currently stands, be discontinued; given that the cooling water discharge consent is no longer exercised. Two inspections will still be carried out each year for the purpose of monitoring the site's environmental performance and compliance with resource consent 5436-3, however, annual reporting is no longer required.

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1 Introduction

1.1 Compliance monitoring programme reports and the Resource Management Act 1991

1.1.1 Introduction

This report is for the period July 2019 to June 2020 by the Taranaki Regional Council (the Council) on the monitoring programme associated with resource consents held by ANZCO Foods Waitara Limited (ANZCO). ANZCO operates a food (meat) manufacturing complex situated on Domett Street at Waitara, in the Waitara River catchment.

This report covers the results of the monitoring programme implemented by the Council in respect of the consents held by ANZCO that relate to discharges of water (both wastewater and stormwater) in the Waitara River catchment, draining to the Tasman Sea. This is the tenth annual report to be prepared by the Council to cover ANZCO's water discharges and their effects.

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 *Resource Management Act 1991* (RMA) and the Council's obligations;
- the Council's approach to monitoring sites through annual programmes;
- the resource consents held by ANZCO in the Waitara catchment;
- the nature of the monitoring programme in place for the period under review; and
- a description of the activities and operations conducted at ANZCO's site.

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

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

Section 4 presents recommendations to be implemented in the 2020-2021 monitoring year.

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

1.1.3 The Resource Management Act 1991 and monitoring

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

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

In drafting and reviewing conditions on discharge permits, and in implementing monitoring programmes, the Council is recognising the comprehensive meaning of 'effects' inasmuch as is appropriate for each

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

1.1.4 Evaluation of environmental and administrative performance

Besides discussing the various details of the performance and extent of compliance by the Company, this report also assigns them a rating for their environmental and administrative performance during the period under review.

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

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

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

Environmental Performance

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

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

For example:

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

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

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

Administrative performance

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

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

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

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

For reference, in the 2019-2020 year, consent holders were found to achieve a high level of environmental performance and compliance for 81% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 17% of the consents, a good level of environmental performance and compliance was achieved.¹

1.2 Process description

Prior to ANZCO purchasing the site in 2004, Aotearoa Coolstores Ltd. used the site for the purpose of cold storage of chilled and frozen meats, including beef and poultry. Prior to this the site was operated as a meat slaughter and processing plant by both Affco NZ and Borthwicks.

ANZCO has developed the site into a food manufacturing 'complex', with facilities for the manufacture and cold storage of beef jerky, beef patties, sausage (salami), and other similar food products.

The refrigeration plant is operated with a set of water-cooled ammonia condensers. Cold ammonia gas leaves the evaporator at low pressure, and is compressed into a hot, high pressure vapour at the compressor. The ammonia vapour is then condensed into a hot liquid in the condenser, which is subsequently cooled as heat is transferred through the pipes and into the cooling water passing through the condenser. The ammonia is contained within the pipes and should not make contact with the cooling water at any stage of the process.

Since the cooling system was first commissioned, plant improvements have meant far more water can be recycled; reducing discharge volumes. Initially, there was a continuous discharge due to the pressure of the town water supply causing a continual overflow from the cooling system. The installation of pressure reducers has since ceased any overflow. Currently, each tower only discharges up to 20-30 L/week, in order to reduce concentrations of total dissolved solids (TDS) which accumulate from the town supply.

¹ The Council has used these compliance grading criteria for 15 years. They align closely with the 4 compliance grades in the MfE Best Practice Guidelines for Compliance, Monitoring and Enforcement, 2018

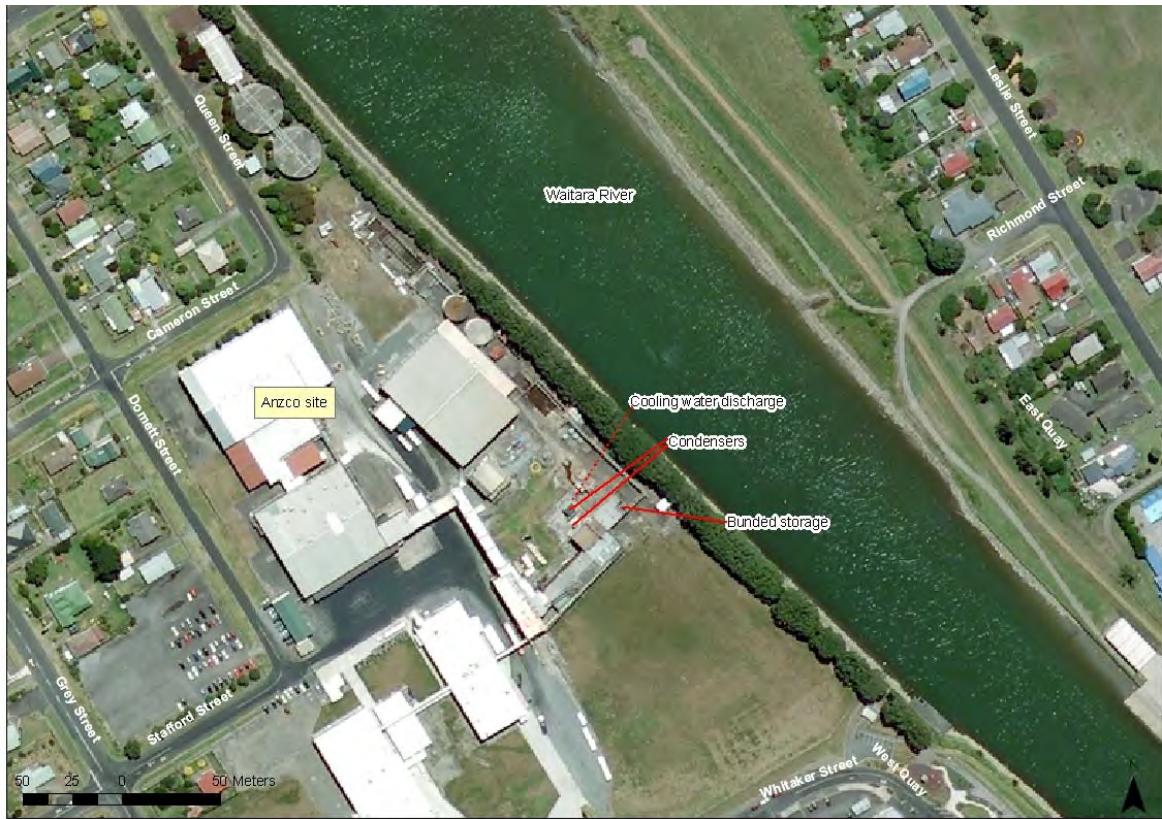


Figure 1 ANZCO site, Domett Street, Waitara

The majority of wastewater generated on site is made up of hygienic wash water from processing areas. The high strength wastewater streams typical of a traditional meat processing plant are not generated at this site. Disposal of processing wastewater now takes place via the New Plymouth Wastewater Treatment Plant (NPWWTP). As the volume of discharge is only in the order of 100 m³/day, ANZCO have chosen to discharge as a trade wastewater customer rather than use the outfall to the Tasman Sea directly. New Plymouth District Council (NPDC) tests the pH and Biochemical Oxygen Demand (BOD) of the effluent every three months.

The stormwater catchment area at ANZCO includes meat processing buildings, cool stores and delivery areas. Although the stormwater is not treated prior to entering the river, the stormwater being discharged is predominantly clean rainwater and thawed freezer water.

With regard to air discharges, all manufacturing areas are graded for edible food handling, and as such completely sealed from the exterior environment for hygiene control. Any potential odours are thus contained within manufacturing areas.

1.3 Resource consents

ANZCO holds two resource consents for the Waitara plant; 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 is included Appendix I, as are copies of all permits held by ANZCO during the period under review.

Table 1 Water discharge permits held by ANZCO

| Consent number | Purpose | Granted | Review | Expires |
|----------------|--|------------|----------------|-------------|
| 0845-3 | To discharge up to 18,000 m ³ /day of wastewater from the cooling of ammonia condensors at a cold storage facility into the Waitara River | 7 Nov 2002 | None remaining | 1 June 2021 |
| 5436-3 | To discharge stormwater from facilities for food manufacturing and associated activities into the Waitara River | 2 May 2017 | June 2021 | 1 June 2033 |

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 ANZCO 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 ANZCO site was inspected twice during the monitoring period. With regard to consents for the discharge to water, the main points of interest were plant processes with potential or actual discharges to receiving watercourses, including contaminated stormwater and cooling wastewaters. Air inspections focused on plant processes with associated actual and potential emission sources and characteristics, including potential odour, dust, noxious or offensive emissions.

1.4.4 Chemical sampling

ANZCO arranged for an external contractor, Spirax Sarco, to collect discharge samples from the cooling tower and evaporate condensers, and samples from the site's water supply connection, on a monthly basis. These samples were analysed by Eurofins ELS Ltd. for un-ionised ammonia, ammoniacal nitrogen, pH and temperature.

An inter-laboratory comparison between Eurofins ELS Ltd. and Hill Laboratories was carried out on one occasion during the current monitoring year, where samples from all four sites were analysed by each laboratory for the same suite of parameters for validation purposes.

No stormwater samples were collected during the monitoring period.

2 Results

2.1 Inspections

The first of two site inspections was carried out during overcast weather on 12 July 2019. Despite recent showers, no stormwater was discharging from site at this time. The stormwater catchment was generally tidy and well maintained. However, it was noted that empty canola oil drums and an ammonia purge water IBC were not being stored within a sealed bund. A small volume of oil appeared to have leaked onto the ground next to the drums. There was no cooling water discharging from site at this time. The site did not appear to be causing any visual effects on the Waitara River. Overall, the site was compliant with consent conditions at the time of this inspection.

The second site inspection was carried out on 8 May 2020. No stormwater was being generated on site. The stormwater catchment was generally tidy and well maintained; no chemical/water storage issues were noted. A new cooling water treatment and disposal system had been installed next to the cooling towers. This was designed to receive all cooling water discharges which then ultimately drain to land via a sand filtration pit; ceasing any direct discharges to the Waitara River. No visual effects were observed in the Waitara River adjacent to the plant. Overall, the site was compliant with consent conditions at the time of this inspection.

2.2 Cooling water samples

Water supply and cooling water samples were collected for analysis on 11 separate occasions during the monitoring period, and were analysed by Eurofins ELS Ltd. (Table 2). Samples collected by the Council on 19 May 2020 are also presented.

Table 2 Cooling water sample results, ANZCO Foods Waitara Ltd (2019-2020)

| Date | Sample | Ammonia-unionised g/m ³ | Ammonia Nitrogen g/m ³ | pH | Temperature °C |
|------------------------|---------------------------|---------------------------------------|--------------------------------------|------|-------------------|
| 23 July 2019 | Raw water | < 0.01 | < 0.01 | 8.30 | 13.4 |
| | Small cooling tower | 0.03 | 0.20 | 8.70 | 19.0 |
| | New evaporate condenser | 0.01 | 0.04 | 9.00 | 20.6 |
| | Large evaporate condenser | < 0.01 | < 0.01 | 9.00 | 21.1 |
| 19 August 2019 | Raw water | < 0.01 | < 0.01 | 8.00 | 11.0 |
| | Small cooling tower | 0.19 | 2.09 | 8.60 | 13.9 |
| | New evaporate condenser | 0.02 | 0.14 | 8.80 | 17.6 |
| | Large evaporate condenser | < 0.01 | < 0.01 | 8.70 | 20.0 |
| 9 September 2019 | Raw water | < 0.01 | < 0.01 | 7.90 | 12.2 |
| | Small cooling tower | 0.16 | 0.71 | 8.80 | 21.7 |
| | New evaporate condenser | 0.02 | 0.07 | 9.10 | 21.4 |
| | Large evaporate condenser | < 0.01 | 0.02 | 9.10 | 20.0 |
| 14 October 2019 | Raw water | < 0.01 | < 0.01 | 8.60 | 14.5 |
| | Small cooling tower | 0.10 | 0.61 | 8.60 | 23.2 |
| | New evaporate condenser | 0.05 | 0.18 | 9.00 | 21.2 |

| Date | Sample | Ammonia-unionised g/m ³ | Ammonia Nitrogen g/m ³ | pH | Temperature °C |
|-------------------|---|---------------------------------------|--------------------------------------|---------------|-------------------|
| | Large evaporate condenser | 0.01 | 0.05 | 8.90 | 21.7 |
| 18 November 2019 | Raw water | < 0.01 | < 0.01 | 8.00 | 15.6 |
| | Small cooling tower | < 0.01 | < 0.01 | 8.80 | 19.6 |
| | New evaporate condenser | 0.02 | 0.03 | 9.40 | 22.9 |
| | Large evaporate condenser | < 0.01 | < 0.01 | 8.70 | 22.8 |
| 12 December 2019 | Raw water | < 0.01 | < 0.01 | 7.30 | 17.8 |
| | Small cooling tower | < 0.01 | < 0.01 | 8.60 | 28.3 |
| | New evaporate condenser | 0.01 | 0.09 | 8.60 | 22.2 |
| | Large evaporate condenser | 0.01 | 0.04 | 8.90 | 21.8 |
| 14 January 2020 | Raw water | < 0.01 | < 0.01 | 7.80 | 19.4 |
| | Small cooling tower | < 0.01 | 0.02 | 9.00 | 26.4 |
| | New evaporate condenser | 0.01 | 0.04 | 9.00 | 24.0 |
| | Large evaporate condenser | < 0.01 | 0.03 | 9.00 | 24.6 |
| 12 February 2020 | Raw water | < 0.01 | < 0.01 | 7.80 | 19.5 |
| | Small cooling tower | < 0.01 | 0.01 | 8.80 | 25.2 |
| | New evaporate condenser | 0.01 | 0.05 | 8.80 | 23.0 |
| | Large evaporate condenser | 0.01 | 0.05 | 8.80 | 23.7 |
| 10 March 2020 | Raw water | < 0.01 | < 0.01 | 8.10 | 18.7 |
| | Small cooling tower | < 0.01 | < 0.01 | 8.80 | 27.2 |
| | New evaporate condenser | < 0.01 | 0.01 | 8.60 | 23.3 |
| | Large evaporate condenser | < 0.01 | < 0.01 | 8.90 | 23.4 |
| April 2020 | No samples collected during COVID Level 4 | | | | |
| 19 May 2020 (TRC) | Raw water | < 0.01 (< 0.00018) | < 0.01 (<0.010) | 8.20 (7.9) | 17.5 (13.7) |
| | Small cooling tower | < 0.01 (< 0.0015) | 0.02 (<0.010) | 8.85 (8.6) | 21.6 (20.7) |
| | New evaporate condenser | < 0.01 (0.005) | 0.03 (0.019) | 8.95 (8.8) | 23.0 (22.1) |
| | Large evaporate condenser | < 0.01 (< 0.003) | 0.01 (< 0.010) | 8.95 (8.7) | 22.4 (24.0) |
| 23 June 2020 | Raw water | < 0.01 | < 0.01 | 8.00 | 13.5 |
| | Small cooling tower | < 0.01 | 0.02 | 8.90 | 18.4 |
| | New evaporate condenser | 0.01 | 0.05 | 8.80 | 21.3 |
| | Large evaporate condenser | < 0.01 | 0.01 | 8.60 | 24.9 |

Condition 2 of consent 0845-3 stipulates that "no chemicals, including un-ionised ammonia, shall be discharged in the cooling waters". This condition is difficult to enforce as small amounts of un-ionised

ammonia occur naturally in waterbodies; hence, raw water is also analysed for un-ionised ammonia, prior to factory processing. Rule 23 of the Regional Fresh Water Plan requires non-consented stormwater discharges that are liable to enter surface water to not exceed an un-ionised ammonia concentration of 0.025 g/m³. Despite being a consented discharge, this threshold is applied here.

A total of five samples had concentrations of un-ionised ammonia exceeding 0.025 g/m³, which were collected during four of the monthly sample collections (July, August, September and October) (Table 2). The un-ionised ammonia concentration of the raw water was found to be below detection on all four occasions, indicating that ammonia from the plant had leached into the cooling water. The ammonia concentrations in the remaining samples were low (mostly below the detection limit).

Ammonia concentrations were comparable between the two sets of samples collected in May.

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 consent holder. During the year matters may arise which require additional activity by the Council, for example provision of advice and information, or investigation of potential or actual causes of non-compliance or failure to maintain good practices. A pro-active approach, that in the first instance avoids issues occurring, is favoured.

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

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

Table 3 below sets out details of any incidents recorded, additional investigations, or interventions required by the Council in relation to ANZCO's activities during the 2019-2020 period. This table presents details of all events that required further investigation or intervention regardless of whether these were found to be compliant or not.

Table 3 Incidents, investigations, and interventions summary table

| Date | Details | Compliant (Y/N) | Enforcement Action Taken? | Outcome |
|---------------------|--|-----------------|---------------------------|---|
| 23/07/19 - 14/10/19 | Five cooling water results where un-ionised ammonia concentration was > 0.025 g/m ³ | N/A | N | <p>Compliance cannot be assessed directly based on these results as they are not discharge samples, although they are indicative of the likely concentrations of un-ionised ammonia in discharges that occurred around the time of sampling.</p> <p>ANZCO attributed these results to annual maintenance works, which can occasionally result in ammonia entering the cooling water. ANZCO are aware of this risk and as such cooling water discharges are redirected onto the adjacent grassed area during these periods.</p> <p>Given the uncertainty that remains around cooling water quality at the time of discharge, ANZCO have now installed a two stage smart chamber with a sand filtration pit. All cooling water discharges are plumbed into this system for treatment and subsequent disposal to land.</p> <p>Cooling water no longer discharges to the Waitara River at any time.</p> |

3 Discussion

3.1 Discussion of site performance

Inspections found that the site was well managed and compliant with consent conditions. No chemical storage issues were identified during the second inspection undertaken in May 2020.

Most cooling water samples collected during the July 2019 to June 2020 monitoring period had low concentrations of un-ionised ammonia (31 out of 36 samples were below the 0.025 g/m³ threshold from the Regional Freshwater Plan). The five samples with concentrations greater than this threshold were collected during ANZCO's annual off season maintenance window. During this time, maintenance work has been shown to inadvertently introduce ammonia into the cooling system. Four of the five high results were from samples collected from the 'small cooling tower'. Discharges from this tower are directed onto the adjacent grassed area and do not discharge directly to the river. The fifth high result was from a sample collected from the 'new evaporative condenser'. Discharges from the two condensers are also redirected onto the adjacent grassed area during maintenance periods when the risk of ammonia entering the cooling water is greater.

In early 2020, ANZCO installed a new dual stage smart chamber treatment system and underground sand filtration pit for cooling water discharges. All cooling water discharges are now plumbed into this system which will ultimately discharge the treated water into land. This addition to the ANZCO plant means that cooling water will no longer discharge directly into the Waitara River at any time.



Photo 1 Dual stage smart chamber treatment system and underground sand filtration pit (19 May 2020)

3.2 Environmental effects of exercise of consents

There was no evidence found during the inspections to indicate any adverse environmental effects as a result of activities at this ANZCO site. No visual issues were observed in the Waitara River adjacent to the plant.

The small volume of canola oil that had leaked from the drums was unlikely to have caused any significant adverse effects. The residual oil was found on an area of grass and gravel where it would have soaked into the ground rather than been directly conveyed to the Waitara River via the stormwater drainage network. Canola oil is an organic product that will biodegrade in soil.

Five cooling water discharge samples were collected which contained elevated concentrations of un-ionised ammonia (based on the Rule 23 in the Regional Fresh Water Plan). The environmental effects of these discharges are likely to have been low, as these discharges were directed onto the adjacent grassed area and not directly conveyed to the Waitara River. Furthermore, the discharge volume and frequency (20-30 litres a week per system) is far less than what was authorised by resource consent 0845-3 when first issued in 2002 (see Section 1.2). However, it should be noted that the monthly samples are collected independent of the weekly discharge cycle (TDS bleed-offs). Therefore, the samples cannot be used to directly assess consent compliance and are purely indicative of discharge quality around the time of sampling. It is possible that cooling waters containing elevated concentrations of un-ionised ammonia may still be discharged to water without being detected by the current monitoring regime.

ANZCO addressed this issue near the start of 2020 by installing a new dual stage smart chamber treatment system and underground sand filtration pit for cooling water discharges. With this system in place, cooling water will no longer discharge into the Waitara River; eliminating any risk of adverse effects on aquatic organisms posed by the presence of un-ionised ammonia in the discharge. With this discharge to water no longer occurring, resource consent 0845-3 can be surrendered. The new discharge, to land, complies with Rule 29 in the Regional Freshwater Plan for Taranaki, therefore will not need a resource consent.

3.3 Evaluation of performance

A tabular summary of ANZCO's compliance record for the year under review is set out in Tables 4 and 5.

Table 4 Summary of performance for consent 0845-3

| Purpose: To discharge up to 18,000 m³/day of wastewater from the cooling of ammonia condensers at a cold storage facility into the Waitara River | | |
|--|---|-----------------------------|
| Condition requirement | Means of monitoring during period under review | Compliance achieved? |
| 1. Limits on temperature of the discharge in receiving waters | Not monitored | N/A |
| 2. No chemicals to be discharged in the cooling waters | Cooling water samples only indicative of discharge quality | N/A |
| 3. Optional review provision re environmental effects | No more scheduled review dates. The consent will expire 1 June 2021 | N/A |
| Overall assessment of environmental performance and compliance in respect of this consent | | High |
| Overall assessment of administrative performance in respect of this consent | | High |

Table 5 Summary of performance for consent 5436-3

| Purpose: To discharge up to 800 L/s of stormwater from facilities for food manufacturing and associated activities into the Waitara River | | |
|--|--|-----------------------------|
| Condition requirement | Means of monitoring during period under review | Compliance achieved? |
| 1. Best practicable option | Site inspection | Yes |
| 2. Discharge area | Site inspection | Yes |
| 3. Limits on pH, suspended solids, oil and grease, chlorides | Stormwater not discharging during inspections | N/A |
| 4. After mixing, discharge not to affect receiving water | Stormwater not discharging during inspections | N/A |
| 5. Consent holder to prepare Contingency Plan | Received November 2016 | Yes |
| 6. Consent holder to prepare Management Plan | Received November 2016 | Yes |
| 7. Document changes to process or operations | Outlined within application and AEE for consent 5436-3 | Yes |
| 8. Option for Council to review consent conditions | Next optional review June 2021 | N/A |
| Overall assessment of environmental performance and compliance 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 environmental performance

| Year | Consent no | High | Good | Improvement req | Poor |
|-------------|-------------------|-------------|-------------|------------------------|-------------|
| 2010 | 0845-3 | 1 | - | - | - |
| | 5436-1 | 1 | - | - | - |
| | 4061-2 | 1 | - | - | - |
| 2011 | 0845-3 | - | - | 1 | - |
| | 5436-1 | 1 | - | - | - |
| | 4061-2 | 1 | - | - | - |
| 2012 | 0845-3 | - | 1 | - | - |
| | 5436-1 | 1 | - | - | - |
| | 4061-2 | 1 | - | - | - |
| 2013 | 0845-3 | 1 | - | - | - |
| | 5436-1 | 1 | - | - | - |
| | 4061-2 | 1 | - | - | - |

| Year | Consent no | High | Good | Improvement req | Poor |
|--------|------------|------|------|-----------------|------|
| 2014 | 0845-3 | 1 | - | - | - |
| | 5436-1 | 1 | - | - | - |
| | 4061-2 | 1 | - | - | - |
| 2015 | 0845-3 | 1 | - | - | - |
| | 5436-1 | 1 | - | - | - |
| | 4061-2 | 1 | - | - | - |
| 2016 | 0845-3 | - | 1 | - | - |
| | 5436-2 | 1 | - | - | - |
| 2017 | 0845-3 | 1 | - | - | - |
| | 5436-2 | 1 | - | - | - |
| 2018 | 0845-3 | - | 1 | - | - |
| | 5436-3 | 1 | - | - | - |
| 2019 | 0845-3 | - | 1 | - | - |
| | 5436-3 | 1 | - | - | - |
| 2020 | 0845-3 | 1 | - | - | - |
| | 5436-3 | 1 | - | - | - |
| Totals | | 23 | 4 | 1 | 0 |

During the year, ANZCO demonstrated a high level of environmental performance and a high level of administrative compliance with the resource consents as defined in Section 1.1.4.

3.4 Evaluation of performance

3.5 Recommendations from the 2018-2019 Annual Report

In the 2018-2019 Annual Report, it was recommended:

1. THAT in the first instance, monitoring of consented activities at ANZCO in the 2019-2020 year continue at the same level as in 2018-2019.
2. THAT should there be issues with environmental or administrative performance in 2019-2020, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.
3. THAT ANZCO provides the Council with a cooling water discharge management BPO report by 1 October 2019.

Recommendations one and two were implemented during the 2019-2020 monitoring period. A BPO report was not provided to Council. Instead, ANZCO decided to go ahead with installing a cooling water discharge treatment and land disposal system.

3.6 Alterations to monitoring programmes for 2020-2021

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

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

- its relevance under the RMA;
- the Council's obligations to monitor consented activities and their effects under the RMA;
- the record of administrative and environmental performances of the consent holder; and
- reporting to the regional community.

The Council also takes into account the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki exercising resource consents.

It is proposed that for 2020-2021, this tailored monitoring programme is discontinued, on the basis that the resource consent for the discharge to the Waitara River is no longer required, and the new discharge to land complies with Rule 29 in the Regional Freshwater Plan for Taranaki. Two inspections will still be carried out each year to assess the sites environmental performance and compliance with the stormwater discharge consent (5436-3). This 2019-2020 Annual Report will be the last.

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

3.7 Exercise of optional review of consent

Resource consent 5436-3 provides for an optional review of the consent in June 2021. Condition eight allows the Council to review the consent, if there are grounds that the conditions are inadequate to deal with any adverse effects on the environment arising from the exercise of this resource consent.

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

4 Recommendations

1. THAT, this tailored monitoring programme, as it currently stands, is discontinued. Two inspections will still be carried out each year for the purpose of monitoring the site's environmental performance and compliance with resource consent 5436-3, however, annual reporting is no longer required.
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. THAT the option for a review of resource consent 5436-3 in June 2021, as set out in condition eight of the consent, not be exercised, on the grounds that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent.

Glossary of common terms and abbreviations

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

| | |
|-------------------------|---|
| Bund | A wall around a tank to contain its contents in the case of a leak. |
| Conductivity | Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 25°C and expressed in $\mu\text{S}/\text{cm}$. |
| Cumec | A volumetric measure of flow- 1 cubic metre per second ($1 \text{ m}^3\text{s}^{-1}$). |
| 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: |
| 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. |
| $\mu\text{S}/\text{cm}$ | 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). |
| 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. |
| Temp | Temperature, measured in °C (degrees Celsius). |

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

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- Taranaki Regional Council, 2018: Anzco Foods Waitara Ltd Monitoring Programme Annual Report 2017-2018. Technical Report 18-88.
- Taranaki Regional Council, 2019: Anzco Foods Waitara Ltd Monitoring Programme Annual Report 2018-2019. Technical Report 19-24.

Appendix I

Resource consents held by ANZCO Foods Waitara Ltd

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

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.

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

Name of
Consent Holder: Anzco Foods Waitara Limited
PO Box 124
Eltham 4353

Decision Date: 2 May 2017

Commencement Date: 2 May 2017

Conditions of Consent

Consent Granted: To discharge stormwater from facilities for food manufacturing and associated activities into the Waitara River

Expiry Date: 1 June 2033

Review Date(s): June 2021, June 2027 and in accordance with special condition 8

Site Location: 1 Stafford Street, Waitara

Grid Reference (NZTM) 1707003E-5682756N

Catchment: Waitara

*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 be from an area not exceeding 7 ha.
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 |
| chloride | Concentration not greater than 50 gm ⁻³ |

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

4. After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the discharge point(s), 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.
5. The consent holder shall maintain 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.

Consent 5436-3.0

6. 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) maintenance of conveyance systems; and
 - c) general housekeeping.

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 2021 and/or June 2027; 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 2 May 2017

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management

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

Name of
Consent Holder: Anzco Foods Waitara Limited
P O Box 39-145
CHRISTCHURCH

Consent Granted
Date: 7 November 2002

Conditions of Consent

Consent Granted: To discharge up to 18,000 cubic metres/day of wastewater from the cooling of ammonia condensers at a cold storage facility into the Waitara River at or about GR: Q19:171-444

Expiry Date: 1 June 2021

Review Date(s): June 2009, June 2015

Site Location: Stafford Street, Waitara

Legal Description: Lot 29 DP 4670 Waitara Township

Catchment: Waitara

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

1. The temperature of the discharge shall not exceed ambient river water temperature by more than 3 degrees Celsius beyond a mixing zone of 50 metres.
2. No chemicals, including un-ionised ammonia, shall be discharged in the cooling waters without prior permission of the Chief Executive, Taranaki Regional Council.
3. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2009 and/or June 2015, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Transferred at Stratford on 9 March 2004

For and on behalf of
Taranaki Regional Council

Director-Resource Management