Taranaki Galvanizers Ltd

Monitoring Programme

Annual Report

2022-2023

Technical Report 2023-73

Working with people | caring for Taranaki

Taranaki Regional Council

Taranaki Regional Council
Private Bag 713
Stratford

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Executive summary

Taranaki Galvanizers Ltd (the Company) operates a zinc galvanising plant which is located on the corner of Monmouth Road and Mountain Road/State Highway 3, approximately 1 km north of Stratford. The site is adjacent to a tributary of the Kahouri Stream which forms part of the Pātea catchment, and is within the shared rohe of Ngāti Ruanui, Ngāti Ruahine and Ngāti Maru.

This report for the period July 2022 to June 2023 details the monitoring programme implemented by Taranaki Regional Council (the Council) to assess the Company's environmental performance and compliance with its resource consents during this period. The findings of the report are based on water quality sampling and site inspections undertaken during the monitoring period.

The Company holds two resource consents which include a total of 16 conditions which the Company must comply with. The Company holds one consent authorising discharges of stormwater into an unnamed tributary of the Kahouri Stream, and one consent authorising discharges of contaminants into the air from the galvanising plant.

During the monitoring period, Taranaki Galvanizers Ltd demonstrated a good level of environmental performance and a high level of administrative performance. These results continue the high rating achieved since the 2020-2021 monitoring year.

The Council's monitoring programme for the year under review included two site inspections to observe activities onsite and any air discharges, and two water sampling surveys to assess the quality of the wastewater discharges and the tributary. There were no samples collected from the stormwater pond this year because there were no discharges occurring during the inspections.

Elevated zinc concentrations were recorded in the wastewater discharges and receiving waters upstream and downstream of the Company's point source discharges. The historical disposal of galvanising waste materials into a bore on the site is considered to be the most likely source of zinc contamination in the site's discharges and in the stream. Long-term monitoring results show that zinc concentrations have generally declined over time.

There were no visible emissions or odour observed during this year's inspections, although visible emissions were occasionally observed at other times of the year. The galvanising plant does not currently have an emission control system and this would improve the ambient air quality and reduce visible emissions. This report recommends that the Company investigate options in accordance with the air discharge consent which requires the adoption of best practicable options to minimise adverse effects on the environment.

For reference, in the 2022-2023 year consent holders were found to achieve a high level of environmental performance and compliance for 878 (87%) of a total of 1007 consents monitored through the Taranaki tailored monitoring programmes. Another 96 (10%) of the consents achieved a good level of environmental performance and compliance. A further 27 (3%) of consents monitored required improvement in their performance and one (<1%) achieved a poor rating.

This report also recommends that the monitoring schedule for the 2023-2024 year continues at the same frequency and scale as this monitoring 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 2022 to June 2023 by the Taranaki Regional Council (the Council) and details the monitoring programme associated with resource consents held by Taranaki Galvanizers Ltd (the Company). The Company operates a galvanising plant on the corner of Monmouth Road and State Highway 3, near Stratford. This site is located in the Patea catchment and in the shared rohe of Ngāti Ruanui, Ngāti Ruahine and Ngāti Maru.

The report includes the results and findings of the programme implemented by the Council to monitor the consents held by the Company that relate to discharge of stormwater into a tributary of the Kahouri Stream, and discharge of contaminants to air from the galvanising plant.

In accordance with the *Resource Management Act 1991* (RMA) environmental management should be integrated across the water air and land domains so that a consent holder's use of these resources can 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 is the eleventh annual report prepared by the Council for the Taranaki Galvanizers Ltd site.

1.1.2 Structure of this report

Section 1 of this report is a background section and 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 Company in the Patea 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 2022-2023 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 regulates environmental effects which are defined as positive or adverse, temporary or permanent, past, present or future, or cumulative. The 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 the conditions of discharge consents, 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 based on existing consent conditions as well as 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 of this nature 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 responsible resource utilisation, to move closer to achieving sustainable management of the region's resources.

1.1.4 Evaluation of environmental and administrative performance

In addition to assessing the performance and extent of compliance by the Company, this report also assigns a rating for the environmental and administrative performance during the period under review. The rating categories are high, good, improvement required, and poor for both parameters. The interpretations for these ratings can be found in Appendix II.

For reference, in the 2022-2023 year, consent holders were found to achieve a high level of environmental performance and compliance for 878 (87%) of a total of 1007 consents monitored through the Taranaki tailored monitoring programmes. Another 96 (10%) of the consents achieved a good level of environmental performance and compliance. A further 27 (3%) of consents monitored required improvement in their performance and one (<1%) achieved a poor rating. [1]

1.2 Process description and location

The hot-dip galvanising plant is owned and operated by the Company and is located at the corner of Mountain Road/State Highway 3 and Monmouth Road, approximately 1 km north of Stratford (Figure 1). Access to the site can be gained from Monmouth Road. A piped tributary flows under the southern part of the site and enters the Kahouri Stream approximately 1,500 m to the east. The Kahouri Stream forms part of the Pātea catchment, and the site is within the shared rohe of Ngāti Ruanui, Ngāti Ruahine, and Ngāti Maru.

The surrounding properties are commercial or rural in character. Businesses adjacent the site include a timber supply company, a roof material supply company, and a heavy machinery depot. The nearest residential dwellings are 126 m to the west and 150 m to the north east. The remaining properties are under pasture.

The galvanizing process occurs within a single building on the site, although some finished products may be stored outside. The outdoor yard is an unsealed gravel surface, and the southern portion of the site is in pasture. Stormwater from the site is diverted either to a sand trap and swale at the northeast corner, or south toward swales in the grassed area and then to a settling pond on the southern boundary. Stormwater from a storage area to the south of the main building is transported across the paddocks to a manhole. During heavy rain overflow from the settling pond also discharges into a single manhole and enters the piped tributary.

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1 The Council has used these compliance grading criteria for more than 19 years. They align closely with the 4 compliance grades in the MfE Best Practice Guidelines for Compliance, Monitoring and Enforcement, 2018

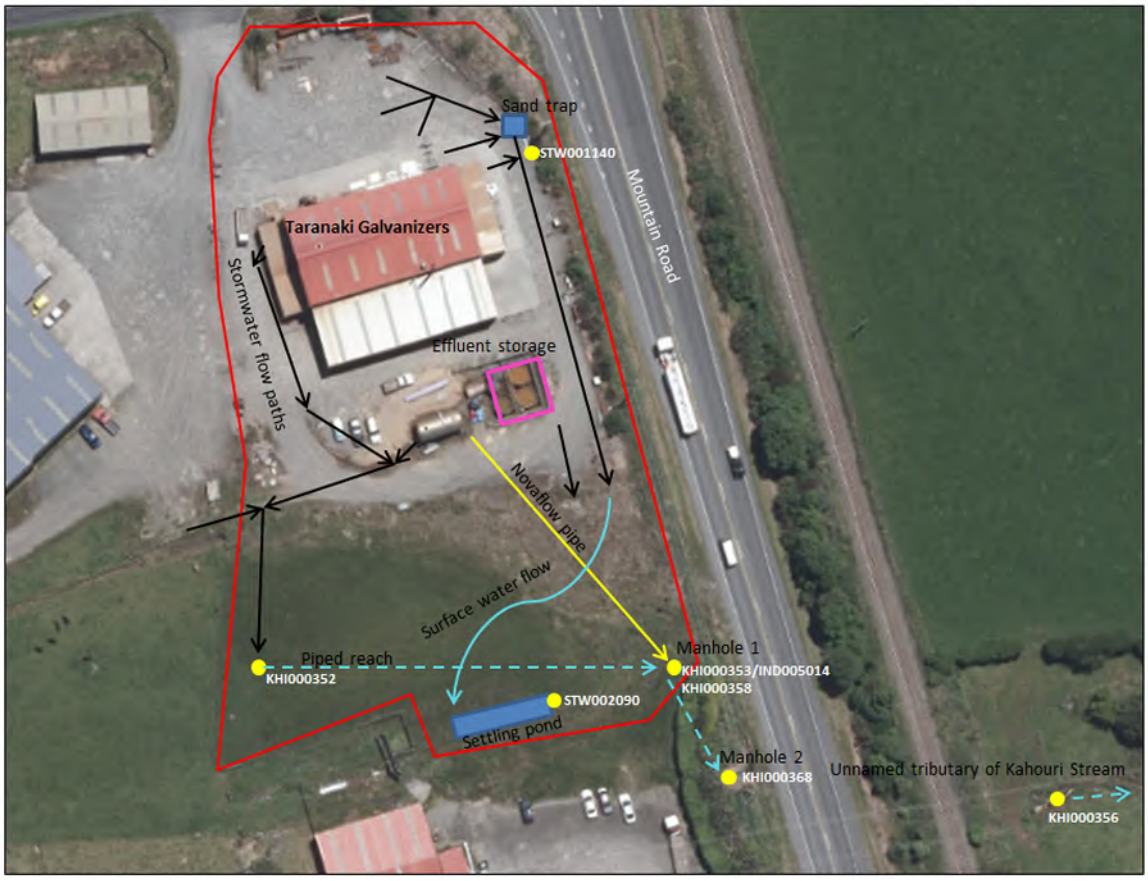

Figure 1 Taranaki Galvanizers site layout

Hot-dip galvanising is a process (Figure 2) whereby iron or steel products are protected from corrosion by the application of a metallic zinc alloy coating. The process involves dipping items in a series of water and acid baths to remove impurities such as oil, dirt, and paint and then dipping them into a zinc galvanizing bath which is the final stage of the galvanizing process.

Emissions from the baths include acid mist, metal particulate, and odour. The emissions are into the interior of the building. There is no treatment of the emissions before being discharged to atmosphere through vents and open doors.

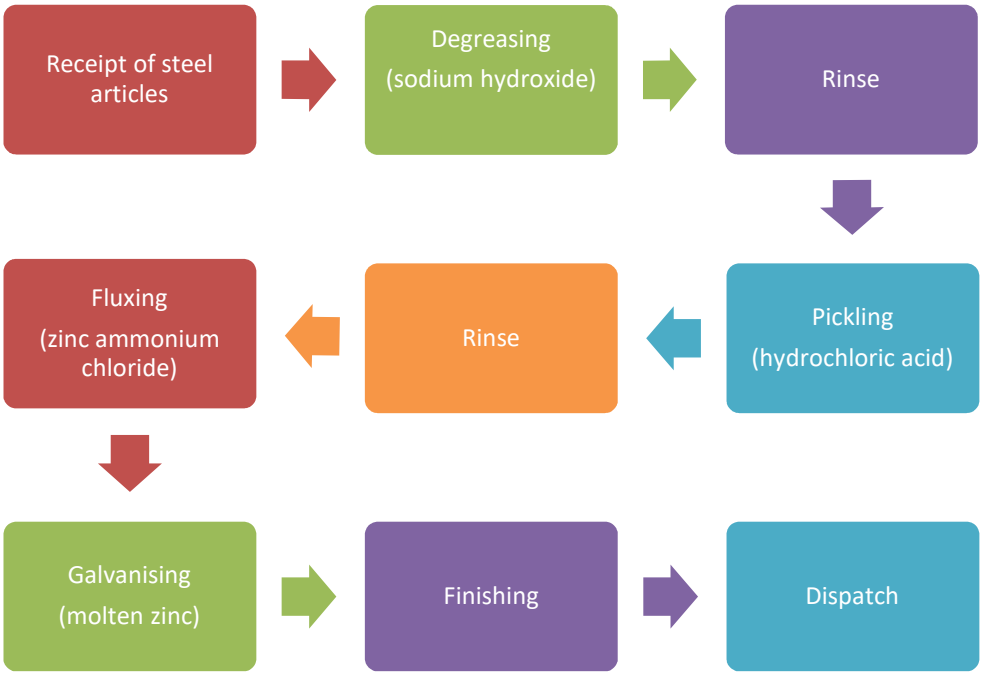

Figure 2 Hot-dip galvanising process undertaken at Taranaki Galvanizers

1.3 Resource consents

The Company holds two resource consents which are summarised in Table 1 below. A summary of the consent conditions and compliance ratings of each consent can be found in section 3.2. A summary of the various consent types issued by the Council for this site is included in Appendix I, as are copies of all consents currently held by the Company.

Table 1 Summary of consents held by Taranaki Galvanizers Ltd

Consent number	Purpose	Granted	Review	Expires
Water discharge consent				
4657-2	To discharge stormwater from the galvanising plant premises into an unnamed tributary of the Kahouri Stream in the Patea catchment at or about (NZTM) 1709996E-5647129N.	17 June 2010	No further reviews	1 June 2028
Air discharge consent				
4064-3	To discharge emissions into the air from the operation of a hot dip galvanising plant and associated processes at or about GR: Q20: 198-088	17 June 2010	No further reviews	1 June 2028

1.4 Monitoring programme

1.4.1 Introduction

Section 35 of the RMA imposes obligations on 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 on 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 Taranaki Galvanizers site consisted of four primary components.

1.4.2 Programme liaison and management

There can be 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 about 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 monitoring programme includes two scheduled site inspections to assess compliance with consent conditions, view the processes occurring to ensure they are within the scope of the consent, and to survey the receiving environment for effects from onsite activities. With regard to the stormwater discharge consent the main points of interest were plant processes with potential or actual discharges of contaminated stormwater and wastewater to receiving waterways, and the maintenance and functionality of discharge management systems. Air inspections consisted of observing and noting any visible or odorous discharges from the building. Where required, data collected by the Company was identified and accessed so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council.

1.4.4 Water quality sampling

The monitoring programme includes biannual sampling of the stormwater and industrial discharges, and the tributary (Table 1). The samples are analysed at Hill Laboratory and the stormwater results are compared against the limits in condition 4 of consent 4657-2 to determine compliance. The tributary is sampled at three locations, one upstream and two downstream of the discharge point to assess the effect of stormwater and wastewater discharges on stream water quality and to assess compliance with condition 5 of the consent. The samples are analysed for the following analytes:

- Temperature
- Chromium
- Hydrocarbons
- Zinc
- Electrical conductivity
- pH
- Ammonia
- Suspended solids
- Turbidity

Table 2 Details of the water quality sampling locations

Site	Location	GPS location	Site code	Sampling date/s
Unnamed tributary of the Kahouri Stream	Approximately 75 m u/s of SH3	1709926E-5647120N	KHI000352	5/12/2022 5/5/2023
Industrial discharge (stormwater and ground water seepage)	Stormwater and groundwater leachate from the southern end of the site	1709995E-5647129N	IND005014*	5/12/2022 5/5/2023
Unnamed tributary of the Kahouri Stream	Immediately upstream of Company's industrial discharge	1709995E-5647129N	KHI000353*	5/12/2022 5/5/2023
Stormwater discharge point *(new site)*	Settling pond at the southern end of the site	1709986E-5647127N	STW002090	N/A
Unnamed tributary of the Kahouri Stream	200 m downstream of Taranaki Galvanizers	1710232E-5647063N	KHI000356	5/12/2022 5/5/2023

**These sites are all located in the same manhole (1)*

1.4.5 Air quality monitoring

Compliance monitoring of the air discharges consisted of observations of equipment and processes, and any dust or odour during the inspection. Instrumental monitoring of ambient air quality around the site was stopped several years ago because the results were consistently very low, and because of limitations of the instruments. Discharges from the galvanising process are infrequent due to the batch-nature of the activity. Hazardous air pollutants (HAPs) discharged to air during the galvanising process are not likely to persist long enough to approach the short term exposure (1-hr average) and long term exposure (24-hr and annual average) human health-based assessment criteria. Additionally, the separation distance between the site and sensitive receptors means that adverse effects, including dust and odour, are not likely to be significant.

2 Results

2.1 Water

2.1.1 Inspections

The site was inspected twice during the monitoring period to assess compliance with the stormwater and air discharge consents. The inspections included discussions with the manager about aspects of the consents, and a visual inspection of the site.

05 December 2022

During the inspection the officer did not observe any visible emissions from the building. There were no discharges occurring from the southern stormwater pond (STW002090) so it was not sampled, and the stormwater drains were dry. There were no containers of chemical being stored in the stormwater flow areas, and zinc fragments in the yard were in the process of being collected for disposal. Samples were collected from three stream locations and the industrial discharge. The officer did not observe any odour or sheens at any of the stream monitoring locations.

05 May 2023

A rain event preceded the inspection and ponding was observed on the gravel yard area. Visible emissions from the building were observed during the inspection, however these dissipated with distance and were negligible at the boundary and were odourless. The officer noted zinc flecks over the yard and advised that these should be collected before the next rainfall event to prevent them entering waterways. There was a low-flow discharge from the southern stormwater pond but not enough to collect a sample from. Water in the stormwater drains was flowing. Water samples were collected from the remaining monitoring locations. There was no foam or odour at any stream location.

2.1.2 Water quality sampling

Results of the two sampling surveys carried out in the 2022-20223 monitoring year are presented in Table 3 (dry weather run) and Table 4 (wet weather run). Condition 4 of the stormwater discharge consent imposes limits on pH, hydrocarbons, suspended solids, and dissolved zinc in the stormwater pond discharges to ensure a minimum water quality before it enters the tributary. As discussed above there were no stormwater samples collected during this monitoring year due to low or nil flow. There are no water quality consent limits for the wastewater discharges.

Table 3 Results of the dry-run sampling carried out 5 December 2022

Parameter	Units	Stormwater Consent limit	05/12/2022				
			KHI000352	IND005014	KHI000353	STW002090	KHI000356
Temperature	˚C	-	14.5	16.2	14.2		14.4
pH	pH	6.0-9.0	6.7	5.9	6.6		6.6
Conductivity at 25°C	mS/m	-	9.7	27.8	11.6		10.2
Ammoniacal Nitrogen	g/m^{3}N	-	0.45	0.74	0.71		0.44
Chromium-acid soluble	g/m^3	-	< 0.010	< 0.010	< 0.010		< 0.010

Parameter	Units	Stormwater Consent limit	05/12/2022				
			KHI000352	IND005014	KHI000353	STW002090	KHI000356
Hydrocarbons	g/m³	15	< 0.7	< 0.7	0.8		< 0.7
Turbidity	NTU	-	28	1.54	45		30
Suspended solids	g/m³	100	7	10	7		9
Zinc-dissolved	g/m³	5	0.027	6.7	0.147		0.25

Table 4 Results of wet-run sampling carried out 5 May 2023 (no sample from STW002090)

Parameter	Units	Consent limit	05/05/2023				
			KHI000352	IND005014	KHI000353	STW002090	KHI000356
Temperature	˚C	-	15.1	16.1	15.2		15.4
pH	pH	6.0-9.0	6.5	6.1	6.5		6.5
Conductivity at 25°C	mS/m	-	9.1	9.1	9.9		9
Ammoniacal Nitrogen	g/m³N	-	0.33	4.4	0.49		0.32
Chromium-acid soluble	g/m³	-	< 0.010	< 0.010	< 0.010		< 0.010
Hydrocarbons	g/m³	15	< 0.7	< 0.7	< 0.7		< 0.7
Turbidity	NTU	-	10.1	3.8	9.5		5.9
Suspended solids	g/m³	100	6	5	5		<3
Zinc-dissolved	g/m³	5	0.074	6	0.14		0.24

2.1.2.1 Stormwater and wastewater discharges

There were no samples collected from the stormwater discharge therefore it isn't possible to determine if discharges from the pond complied with the limits in consent 4657-2. There have been three samples collected from the stormwater discharge since January 2017. The results of all four samples complied with the consent limits. In particular, the reported concentrations of zinc ranged between 0.9 and 1.56 g/m³, and total suspended solids ranged between 12 and 20 g/m³. Based on these results and the fact that onsite processes are unchanged, it's unlikely that un-monitored discharges during this monitoring year approached any of the relevant limits.

Samples from the Novaflo wastewater discharge were substantially higher in zinc than the stream samples. The zinc results were 6.7 (dry weather run) and 6 g/m³ (wet weather run), compared to the in-stream results which ranged between 0.027 (upstream site) and 0.25 g/m³ (downstream site). The electrical conductivity of the industrial discharge during dry conditions was 27.8 mS/m, higher than the tributary results which ranged between 9.7 and 10.2 mS/m. Conductivity is not a contaminant itself but can be used as a measure of dissolved solids.

The results of zinc concentrations in all samples collected from the wastewater discharge since 1991 are presented in Figure 3. Zinc concentrations have decreased significantly since 1991, and have remained comparatively low for the last 20 years.

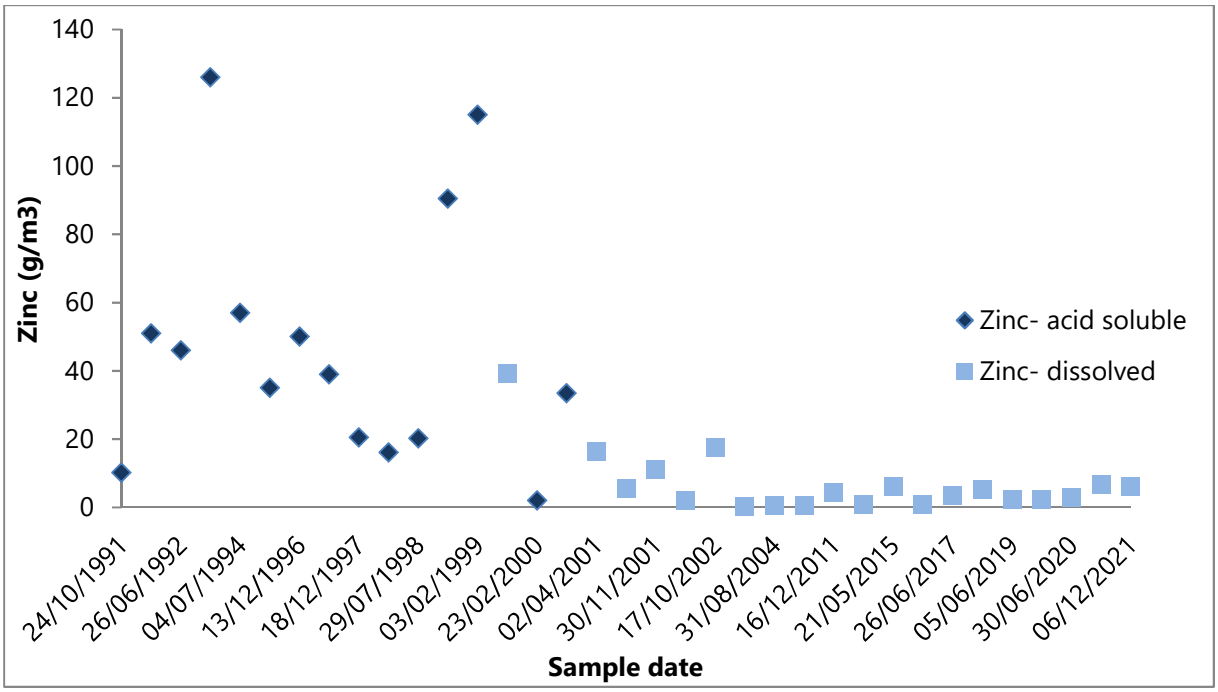

Figure 3 Zinc concentration in the wastewater discharge (IND005014), 1991-2023

2.1.2.2 Receiving environment monitoring

The main contaminant in the site's water discharges which poses an environmental risk to the tributary is zinc which is a key component of the galvanizing process. Zinc is an essential trace element required by most organisms for growth and development, but at certain threshold concentrations has ecotoxic effects. Naturally occurring background zinc concentrations in New Zealand freshwater systems ranges between 0.00015 and 0.002 g/m^3 as recommended in the Australia New Zealand Environment and Conservation Council (ANZECC) guidelines (ANZECC, 2000). The trigger value recommended for the protection of 99% of species is 0.0024 g/m^3 (ANZECC, 2000). Zinc is not listed as an attribute of the National Policy Statement for Freshwater Management (2020). Taranaki soils are naturally high in zinc compared to other New Zealand regions due to their volcanic origin (Manaaki Whenua Landcare Research, 2002) and may contribute to elevated zinc in surface water.

The concentration of zinc in all samples collected this monitoring year ranged from 0.027 (upstream site) and 0.25 g/m^3 (downstream site). All of the results were greater than the ANZECC trigger value for the protection of 90% of species (0.015 g/m^3). Only one sample, from the upstream site, was less than the ANZECC trigger value for the protection of 80% of species.

Figure 4 shows that the concentrations of zinc immediately upstream of the discharges are among the lowest compared to previous ten years. Overall the concentration of zinc in the stream has declined over the last decade.

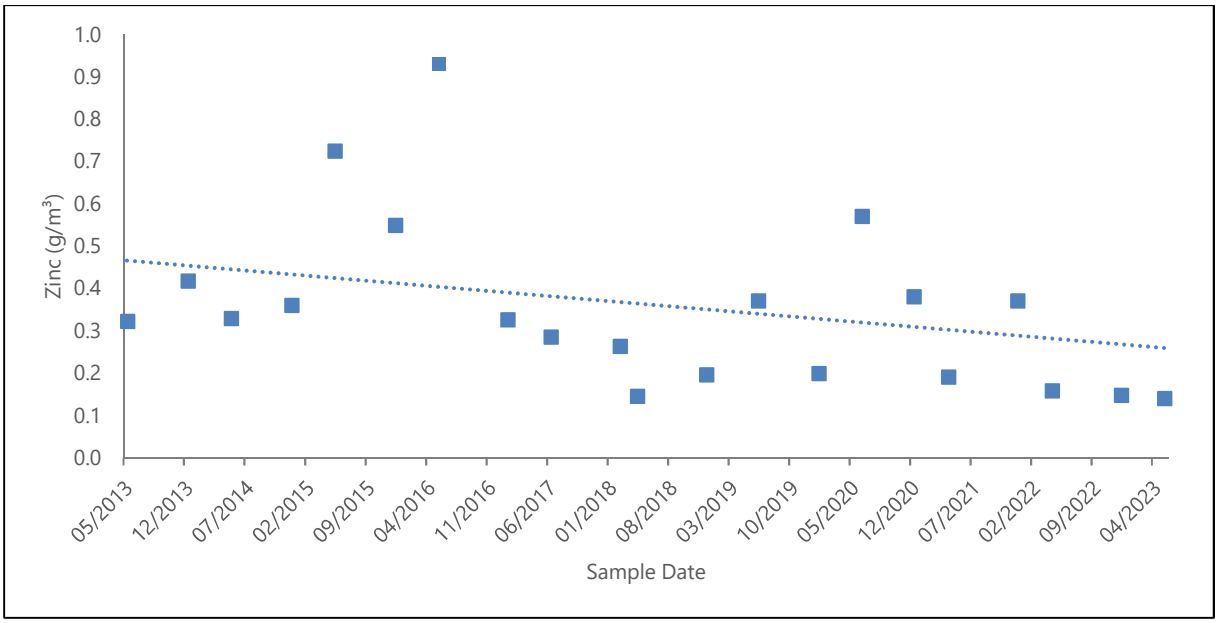

Figure 4 Zinc concentrations at monitoring location KHI000353, 2013-2023

Long-term monitoring at the nearest location downstream of the site's discharges has shown that zinc concentrations have also decreased over the last decade (Figure 5). In January 2013 the zinc concentration was 0.5 g/m³ and peaked in May 2016 when it was reported as 0.6 g/m³. Since then the results have been less than 0.3 g/m³ except for one instance in June 2020 when the concentration was 0.7 g/m³.

On the basis that there was no stormwater discharges during any of the sampling surveys the zinc concentrations in the tributary are likely to represent naturally occurring zinc and ongoing diffuse discharges from contaminated groundwater.

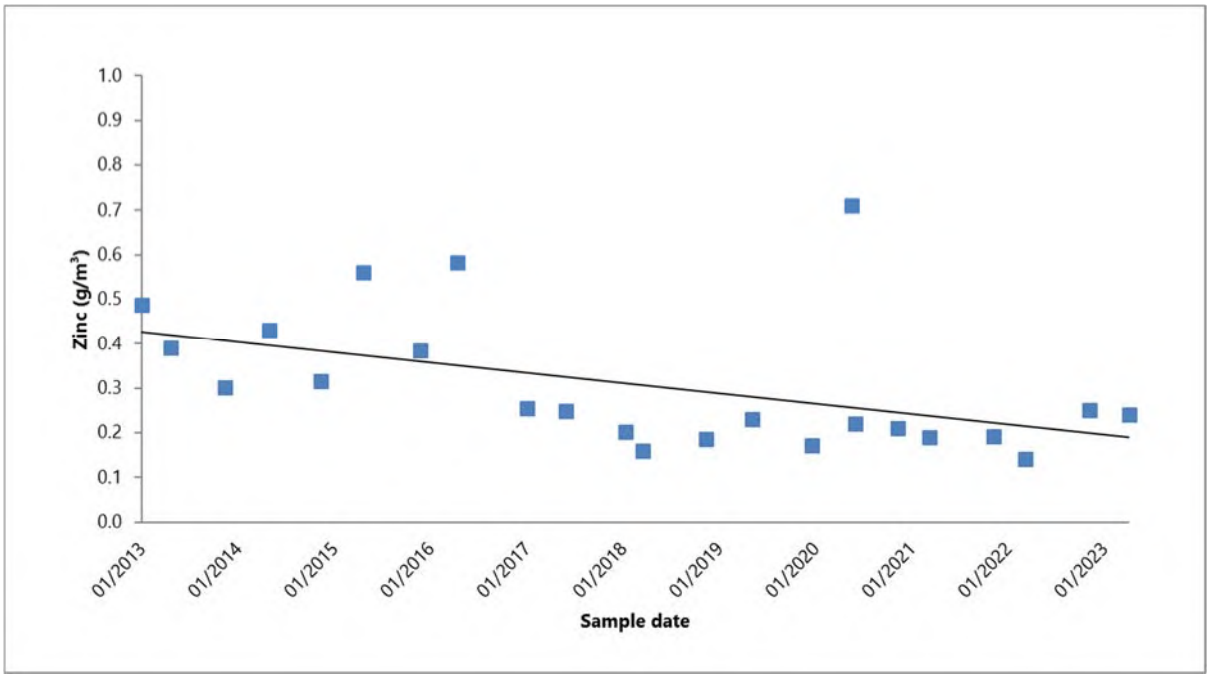

Figure 5 Zinc concentrations at monitoring location KHI000356, 2013-2023

2.2 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, investigation of potential or actual causes of non-compliance, or failure to maintain good site practices. A pro-active approach that, in the first instance, avoids issues occurring is favoured.

The Council maintains a database of all significant compliance issues and complaints from the public. The database includes events where the individual/organisation concerned notified the Council. Details of any subsequent investigation and enforcement action are recorded for non-compliant events.

If there is a potential issue of legal liability the Council must be able to prove by investigation that the identified individual/organisation is the source of the incident (or that the allegation cannot be proven).

In the 2022-2023 period, the Council was not required to undertake significant additional investigations or interventions, or record incidents, in association with the Company's resource consent conditions or provisions in the Regional Plans.

3 Discussion

3.1 Discussion of site and environmental performance

The site inspections during the 2022-2023 period found the site in good condition and well managed. During the May inspection water was seen flowing through the drains without obstruction, although a sample was not able to be collected from the stormwater pond outlet. Conditions during the December inspection were dry and the pond was not able to be sampled. At the time the Company was advised to continue regularly cleaning up scrap zinc particles outside the plant building to avoid these entering the stormwater system. All storage containers were within bunded areas.

During the inspection on 5 May 2023 visible emissions were noted by the monitoring officer, and visible emissions occur occasionally in the mornings based on personal observations. The emissions from the baths are vented to atmosphere with no treatment to remove acid mist and particulate. Although deposition gauge monitoring has shown negligible results in the past, this is an unsuitable method for establishing ambient concentrations of contaminants. There are no practical methods of monitoring discharges, instead adverse effects are controlled through adoption of the best practicable emission control option and by separation distance to sensitive receptors. Other galvanising plants use baghouse filters or wet scrubbers to treat the emissions before discharging to atmosphere, and some form of treatment is considered best practice. It is recommended that the Company investigate installing an emissions control system of some type to minimise discharges and improve local air quality. Condition 1 of the air discharge consent requires the adoption of the best practicable option in order to minimise adverse effects above those authorised by the consent. Determining the best practicable option requires the consideration of the following;

- The nature of the emission and effects on the environment
- Financial implications of all options
- Current state of technical knowledge

Treating the emissions more effectively will have the co-benefit of reducing the deposition of zinc and other particulate onto the ground where it can contaminate soil or stormwater discharges.

Water quality monitoring this year indicated that zinc levels in the wastewater discharge remain low compared to past results. As stormwater discharges seldom coincide with site inspections the quality of the discharge is difficult to assess. However, if discharges from the pond are infrequent then the effect on the quality of the tributary is likely to be negligible, or at least restricted to short duration effects. The elevated zinc levels reported in all stream samples are likely a combination of diffuse discharges from groundwater contaminated by the historical disposal bore, and naturally occurring background sources.

Across all monitoring locations, the zinc concentrations continued to decline. Although there was no sampling of the stormwater discharges this monitoring year it is inferred, based on historical data, that any un-monitored discharges complied with the consent limits.

3.2 Evaluation of performance

A summary of the consent holder's compliance record for the year under review is set out in Tables 5 to 7.

Table 5 Summary of performance for consent 4657-2

Purpose: ***To discharge stormwater from the galvanising plant premises into an unnamed tributary of the Kahouri Stream.***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Adopt best practicable option	Inspections	Yes
2. Limit on stormwater catchment area	Inspections	Yes
3. Requirements for storage and containment facilities for hazardous substances	Inspections	Yes
4. Discharge contaminant limits	Water quality monitoring	Yes
5. No adverse effects on receiving waters after reasonable mixing	Water quality monitoring and inspections	Yes
6. Requirement to maintain a spill or emergency contingency plan	Review by Council	N/A
7. Requirement to maintain a stormwater management plan	Review by Council	N/A
8. Requirement to notify Council of any significant changes that may alter nature of the discharge	Notify Council (no notification)	N/A
9. Optional review of consent	Not exercised	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 4064-3

Purpose: ***To discharge emissions into the air from the operation of a hot dip galvanising plant and associated processes***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Adopt best practicable option	Inspections	Yes
2. Discharge shall not result in offensive or objectionable odours beyond the site boundary	Inspections	Yes

Purpose: *To discharge emissions into the air from the operation of a hot dip galvanising plant and associated processes*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
3. Limit on zinc deposition rate near the property boundary	Based on past results	N/A
4. Requires galvanising process to be dry flux as far as practicable	Inspections	Yes
5. Wet fluxing or flux dusting prohibited from occurring on site	Inspections	Yes
6. Requirement to notify Council of any significant changes that may alter nature of the discharge	Notify Council	N/A
7. Optional review of consent	Not exercised	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**Good**
Overall assessment of administrative performance in respect of this consent		**High**

N/A = not applicable

Table 7 Evaluation of environmental performance over time

Year	Consent no	High	Good	Improvement req	Poor
2010-2011	4657-2	-	1	-	-
	4064-3	-	1	-	-
2011-2012	4657-2	1	-	-	-
	4064-3	1	-	-	-
2012-2013	4657-2	1	-	-	-
	4064-3	1	-	-	-
2013-2014	4657-2	-	1	-	-
	4064-3	1	-	-	-
2014-2015	4657-2	-	-	1	-
	4064-3	1	-	-	-
2015-2016	4657-2	1	-	-	-
	4064-3	1	-	-	-
2016-2017	4657-2	-	1	-	-
	4064-3	1	-	-	-
2017-2018	4657-2	1	-	-	-
	4064-3	1	-	-	-
2018-2019	4657-2	1	-	-	-
	4064-3	1	-	-	-

Year	Consent no	High	Good	Improvement req	Poor
2019-2020	4657-2	-	1	-	-
	4064-3	1	-	-	-
2020-2021	4657-2	1	-	-	-
	4064-3	1	-	-	-
2021-2022	4657-2	1	-	-	-
	4064-3	1	-	-	-
2022-2023	4657-2	1			
	4064-3	-	1		
Totals	-	20	5	1	0

During the year, the Company demonstrated a good level of environmental performance and a high administrative performance with the resource consents as defined in Appendix II.

3.3 Recommendations from the 2021-2022 Annual Report

1. THAT in the first instance, monitoring of consented activities at Taranaki Galvanizers Ltd site in the 2022-2023 year continue at the same level as in 2021-2022.
2. THAT should there be issues with environmental or administrative performance in 2022-2023, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.

This year's scheduled monitoring was completed and no additional monitoring or inspections were considered necessary.

3.4 Alterations to monitoring programmes for 2023-2024

In designing and implementing the monitoring programmes for air and 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 consents, and the need to maintain a sound understanding of industrial processes within Taranaki exercising resource consents.

It is proposed that for 2023-2024 that the monitoring continue at the same level as it had in 2022-2023.

The proposed programme represents a reasonable and risk-based level of monitoring for the site. 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 2023-2024.

4 Recommendations

1. THAT monitoring of consented activities at Taranaki Galvanizers Ltd site in the 2023-2024 year shall continue at the same level as in 2022-2023.
2. THAT should there be issues with environmental or administrative performance in 2023-2024, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.
3. THAT Taranaki Galvanizers Ltd should investigate emissions control system options which will further minimise discharges of acid mist, particulate and visible emissions to air.

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.
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.
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.
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.
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 consents (Section 14) and discharge consents (Section 15).
RMA	*Resource Management Act 1991* and including all subsequent amendments.
SS	Suspended solids.
Temp	Temperature, measured in °C (degrees Celsius).
Turb	Turbidity, expressed in NTU or FNU.
Zn	Zinc.

For further information on analytical methods, contact the Environmental Quality Manager.

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Appendix I

Resource consents held by Taranaki Galavanizers Ltd

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

Water discharge consents

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

Air discharge consents

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. Consents authorising discharges to air 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:	Taranaki Galvanizers Limited R D 23 STRATFORD 4393
Consent Granted Date:	17 June 2010

Conditions of Consent

Consent Granted:	To discharge emissions into the air from the operation of a hot dip galvanising plant and associated processes at or about (NZTM) 1709953E-5647196N
Expiry Date:	1 June 2028
Review Date(s):	June 2016, June 2022
Site Location:	Corner Monmouth Road and State Highway 3, Stratford
Legal Description:	Lot 2 DP 19286 Blk I Ngaere SD

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 [the Council] all the administration, monitoring and supervision costs of this consent, fixed in accordance to section 36 of the Resource Management Act.

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 discharges authorised by this consent shall not give rise to an odour at or beyond the boundary of the site that is offensive or objectionable.

3. The zinc deposition rate near the property boundary, at sampling locations as agreed to by the Chief Executive, Taranaki Regional Council, shall be less than 8.2 milligrams of zinc per square metre per day [$mg/m^2/day$]. The agreed locations are to be indicative of the zinc deposition rate immediately beyond the boundary.

4. The consent holder shall ensure that all items to be dry flux galvanised shall be clean and dry as far as practicable before hot dipping.

5. No wet fluxing or flux dusting will be undertaken on site.

6. 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, that could alter the nature of the discharge. Any such change shall then only occur following receipt of any necessary approval under the Resource Management Act. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to worknotification@trc.govt.nz. Notification by fax or post is acceptable if the consent holder does not have access to email.

7. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2016 and/or June 2022, 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 June 2010

For and on behalf of
Taranaki Regional Council

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Chief Executive

Discharge Permit

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

Name of Consent Holder:	Taranaki Galvanizers Limited R D 23 STRATFORD 4393
Consent Granted Date:	17 June 2010

Conditions of Consent

Consent Granted:	To discharge stormwater from the galvanising plant premises into an unnamed tributary of the Kahouri Stream in the Patea catchment at or about (NZTM) 1709996E-5647129N
Expiry Date:	1 June 2028
Review Date(s):	June 2016, June 2022 and/or within 3 months of receiving a notification under special condition
Site Location:	Corner Monmouth Road and State Highway 3, Stratford
Legal Description:	Lot 2 DP 19286 Blk I Ngaere SD
Catchment:	Patea
Tributary:	Kahouri

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 [the Council] all the administration, monitoring and supervision costs of this consent, fixed in accordance to section 36 of the Resource Management Act.

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 a catchment area not exceeding 0.735 hectares.

3. Any significant volumes of hazardous substances [e.g. hydrochloric acid, zinc ammonium chloride, sodium hydroxide] on site shall be:

   a) contained in a double skinned tank, or

   b) stored in a dedicated bunded area with drainage to sumps, or to other appropriate recovery systems, and not directly to the site stormwater system.

4. 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}
total recoverable hydrocarbons	Concentration not greater than 15 gm^{-3}
zinc	Concentration not greater than 5 gm^{-3}

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

5. After allowing for reasonable mixing, within a mixing zone extending 5 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.

6. The consent holder shall maintain a contingency plan. The contingency plan shall be adhered to in the event of a spill or emergency and shall, to the satisfaction of the Chief Executive, Taranaki Regional Council, detail measures and procedures to be undertaken to prevent spillage or accidental discharge of contaminants not authorised by this consent and measures to avoid, remedy or mitigate the environmental effects of such a spillage or discharge.

7. The consent holder shall maintain a stormwater management plan. This plan shall be adhered to at all times and shall, to the satisfaction of the Chief Executive, Taranaki Regional Council document how the site is to be managed in order to minimise the contaminants that become entrained in the stormwater. The plan shall include but not necessarily be limited to:

   a) the loading and unloading of materials;
   b) maintenance of conveyance systems;
   c) general housekeeping; and
   d) management of the interceptor system.

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

8. The consent holder shall notify the Chief Executive, Taranaki Regional Council, prior to making any changes to the processes or operations undertaken at the site, or the chemicals used or stored on site, that could alter the nature of the discharge. Any such change shall then only occur following receipt of any necessary approval under the Resource Management Act. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to worknotification@trc.govt.nz.

9. 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 2016 and/or June 2022; and/or
   b) within 3 months of receiving a notification under special condition 8 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 June 2010

For and on behalf of
Taranaki Regional Council

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Chief Executive

Appendix II

Categories used to evaluate environmental and administrative performance

Categories used to evaluate environmental and administrative performance

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

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

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

Environmental Performance

High: No or inconsequential (short-term duration, less than minor in severity) breaches of consent or regional plan parameters resulting from the activity; no adverse effects of significance noted or likely in the receiving environment. The Council did not record any verified unauthorised incidents involving 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.