

Lower Waiwhakaiho Catchment

Monitoring Programme

Annual Report

2021-2022

Technical Report 2022-13



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Taranaki Regional Council
Private Bag 713
Stratford

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Executive summary

The Lower Waiwhakaiho River catchment monitoring programme addresses discharges by several consent holders in the Fitzroy area of New Plymouth. The report covers the period July 2021 to June 2022, and is the 29th report for this combined monitoring programme.

During the monitoring period, the companies demonstrated an overall good level of environmental performance and a high level of administrative performance.

The Waiwhakaiho River catchment is significant for the Taranaki region. It is used for domestic, agricultural and industrial water supply, hydroelectric power generation, recreational purposes, and waste assimilation. It is also important to the local hapū. Because of the pressure on the river, the Taranaki Regional Council (the Council) adopted a water management plan for the river in September 1991.

During the 2021-2022 monitoring period a total of 19 consents were held by the 13 industries monitored under this programme that discharge wastewater, stormwater and/or leachate from the industrial area at Fitzroy, New Plymouth to the lower Waiwhakaiho River and Mangaone Stream, or to land in the lower Waiwhakaiho and Mangaone Stream catchments. The activities and impacts of the consent holders upon water quality are discussed, as is the extent of their compliance with their permits, and their overall environmental performance. There is a separate report covering emissions to air within the catchment.

The monitoring programme included 43 site inspections, 104 samples of discharges, groundwater and receiving waters, and two biomonitoring surveys of the Waiwhakaiho River and Mangaone Stream.

Biomonitoring surveys undertaken during the monitoring period indicated that discharges from the industrial area can contribute to deterioration in macroinvertebrate community health in a downstream direction in the lower Waiwhakaiho River, including below the Mangaone Stream confluence. The Mangaone Stream also had a significant decline in macroinvertebrate indices in the middle reaches, which may be due in part to chronic pollution from historic sites. However, results suggest that a more recent and local discharge may be contributing to the deterioration noted.

There continued to be evidence of some nutrient enrichment occurring in the lower Mangaone Stream. This was most likely to have been caused by inputs from various sites in the middle reaches. Also noted is the persistence of nutrient contamination in the groundwater surrounding the old Ravensdown site. In addition, there was the introduction of discharges from the new Ravensdown site which have in the past been found to be non-compliant in regard to ammoniacal nitrogen.

Low levels of light organic solvent preservative (LOSP) chemicals Propiconazole and Tebuconazole were detected in the Mangaone Stream downstream of Taranaki Sawmills Ltd during a wet weather survey. However, levels of these chemicals were similar to concentrations detected historically.

Monitoring of groundwater and leachate in relation to the old landfill area off Bewley Road showed pH and sulphate levels were outside consent limits at two monitoring bores. Other parameters tested were within consent limits at the time of sampling.

There were three unauthorised incidents recorded that were associated with the consents covered by this report which resulted in further enforcement action, including two infringement notices and one abatement notices being issued.

During the period under review, AML Ltd demonstrated a level of environmental and administrative performance and compliance that **required improvement** with their resource consent as defined in Appendix II.

During the period under review, Devon 662 Limited Partnership demonstrated a **good** level of environmental performance and a **high** level of administrative performance and compliance. Groundwater

monitoring continues to show the likelihood of fugitive historical fertiliser discharges from the former storage depot. More recent sampling appears to indicate that these trends are decreasing.

Dialog Fitzroy demonstrated a **high** level of environmental and administrative performance and compliance with their resource consents as defined in Appendix II.

During the period under review, Downer EDI Works Ltd was issued with an **improvement required** rating for their environmental performance and administrative performance and compliance with their resource consents, as defined in defined in Appendix II, relation to its Rifle Range Road site.

During the period under review, Envirowaste Services Ltd demonstrated a **high** level of environmental and administrative performance and compliance with their resource consent, as defined in Appendix II.

During the period under review, Firth Industries Ltd demonstrated a **good** level of environmental and a **high** level of administrative performance and compliance with their resource consents in relation to its site on Clemow Road. There have been ongoing issues with sediment loading in stormwater discharges, which the Company have since addressed.

During the period under review, Freight and Bulk Transport Holdings Ltd demonstrated a **high** level of environmental and administrative performance and compliance with their resource consent as defined in Appendix II.

During the period under review, KiwiRail Holdings Ltd/New Zealand Railways Corporation Ltd demonstrated a **high** level of environmental and administrative performance and compliance with their resource consent as defined in Appendix II.

During the period under review, New Plymouth District Council demonstrated a **good** level of environmental performance and **high** level of administrative performance and compliance with its resource consents as defined in Appendix II. Further work may be required to understand chemical fluctuations, and subsequent consent limit exceedances, in leachate discharge to groundwater and surface water in the area.

During the period under review, Ravensdown Fertiliser was issued with an **improvement required** rating for their level of environmental performance and a **high** level administrative performance and compliance with their resource consent as defined in Appendix II.

During the period under review, Taranaki Sawmills Ltd demonstrated a **good** level of environmental and a **high** administrative performance and compliance with their resource consent as defined in Appendix II. Recent works to remediate zinc on the site have successfully reduced levels in stormwater discharges.

During the period under review, Technix Group Ltd demonstrated a **high** level of environmental and administrative performance and compliance with their resource consent as defined in Appendix II.

During the period under review, Waste Management NZ Ltd demonstrated a **high** level of environmental level of administrative performance and compliance with their resource consent and RFWP as defined in Appendix II.

For reference, in the 2021-2022 year, consent holders were found to achieve a high level of environmental performance and compliance for 88% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 10% of the consents, a good level of environmental performance and compliance was achieved.

This report includes recommendations for the 2022-2023 year.

Table of contents

		Page
1	Introduction	1
1.1	Compliance monitoring programme reports and the Resource Management Act 1991	1
1.1.1	Introduction	1
1.1.2	Structure of this report	1
1.1.3	The Resource Management Act 1991 and monitoring	2
1.1.4	Evaluation of environmental and administrative performance	2
1.2	Resource consents	3
1.3	Monitoring programme	7
1.3.1	Introduction	7
1.3.2	Programme liaison and management	7
1.3.3	Site inspections	7
1.3.4	Chemical sampling	7
1.3.4.1	Surface water surveys	7
1.3.4.2	Discharge sampling	8
1.3.4.3	Groundwater surveys	8
1.3.4.4	Streambed sediment sampling	8
1.3.5	Biomonitoring surveys	8
1.3.5.1	Macroinvertebrate surveys	8
1.3.5.2	Fish survey	8
2	AML Ltd (trading as Allied Concrete)	10
2.1	Site description	10
2.2	Results	11
2.2.1	Inspections	11
2.2.2	Results of discharge monitoring	11
2.3	Investigations, interventions, and incidents	12
2.4	Evaluation of performance	13
3	Devon 662 Ltd Partnership	15
3.1	Site description	15
3.2	Results	16
3.2.1	Inspections	16
3.2.2	Results of discharge monitoring	16
3.2.3	Results of groundwater monitoring	18
3.2.4	Results of receiving environment monitoring	21

3.3	Investigations, interventions, and incidents	23
3.4	Evaluation of performance	23
4	Dialog Fitzroy	25
4.1	Site description	25
4.2	Results	27
4.2.1	Inspections	27
4.2.2	Results of discharge monitoring	27
4.3	Investigations, interventions, and incidents	28
4.4	Evaluation of performance	28
5	Downer EDI Works Ltd	30
5.1	Site description	30
5.2	Results	31
5.2.1	Inspections	31
5.2.2	Results of discharge monitoring	32
5.3	Investigations, interventions, and incidents	33
5.4	Evaluation of performance	34
6	Envirowaste Services Ltd	35
6.1	Site description	35
6.2	Results	35
6.2.1	Inspections	35
6.2.2	Results of discharge monitoring	36
6.3	Investigations, interventions, and incidents	36
6.4	Evaluation of performance	36
7	Firth Industries Ltd (division of Fletcher Concrete & Infrastructure Ltd)	38
7.1	Site description	38
7.2	Results	39
7.2.1	Inspections	39
7.2.2	Results of discharge monitoring	39
7.3	Investigations, interventions, and incidents	40
7.4	Evaluation of performance	40
8	Freight and Bulk Transport Holdings Ltd	42
8.1	Site description	42
8.2	Results	43
8.2.1	Inspections	43
8.2.2	Results of discharge monitoring	43
8.3	Investigations, interventions, and incidents	44

8.4	Evaluation of performance	44
9	KiwiRail Holdings Ltd/ New Zealand Railways Corporation (KiwiRail)	46
9.1	Site description	46
9.2	Results	47
9.2.1	Inspections	47
9.2.2	Results of discharge monitoring	47
9.2.3	Results of surface water monitoring	48
9.3	Investigations, interventions, and incidents	48
9.4	Evaluation of performance	49
10	New Plymouth District Council	51
10.1	Site description	51
10.1.1	Water discharge permits	51
10.1.2	Bewley Road closed landfill	53
10.2	Results	53
10.2.1	Inspections	53
10.2.2	Results of discharge monitoring	53
10.2.2.1	Discharge to Waiwhakaiho River from Burton Street	53
10.2.2.2	Discharge to Waiwhakaiho River from McLeod's Drain	54
10.2.2.3	Discharge to Waiwhakaiho River from Vickers Road	55
10.2.2.4	Discharge to Mangaone Stream from mid Katere Road	55
10.2.2.5	Discharge to Mangaone Stream from Hurlstone Drive	56
10.2.3	Results of groundwater monitoring	56
10.2.3.1	Bore GND0556	56
10.2.3.2	Bore GND0555	57
10.2.3.3	Bore GND0548	58
10.2.4	Results of surface water monitoring	59
10.3	Investigations, interventions, and incidents	60
10.4	Evaluation of performance	61
11	Ravensdown Fertiliser Co-operative Ltd	63
11.1	Site description	63
11.2	Results	64
11.2.1	Inspections	64
11.2.2	Results of discharge monitoring	64
11.3	Investigations, interventions, and incidents	65
11.4	Evaluation of performance	66

12	Taranaki Sawmills Ltd	67
12.1	Site description	67
12.2	Results	68
12.2.1	Inspections	68
12.2.2	Results of discharge monitoring	68
12.2.3	Results of surface water monitoring	71
12.2.4	Sediment sampling	71
12.3	Investigations, interventions, and incidents	72
12.4	Evaluation of performance	73
13	Technix Group Ltd	74
13.1	Site description	74
13.2	Results	76
13.2.1	Inspections	76
13.2.2	Results of discharge monitoring	76
13.2.2.1	Discharge to Waiwhakaiho River opposite Dialog Fitzroy	76
13.2.2.2	Discharge to Waiwhakaiho River from Vickers Road	77
13.2.2.3	Discharge to Mangaone Stream from Technix	77
13.3	Investigations, interventions, and incidents	77
13.4	Evaluation of performance	78
14	Waste Management NZ Ltd	80
14.1	Site description	80
14.2	Results	81
14.2.1	Inspections	81
14.2.2	Results of discharge monitoring	81
14.3	Investigations, interventions, and incidents	81
14.4	Evaluation of performance	82
15	Surface water quality	83
15.1	Chemical sampling surveys	83
15.1.1	Waiwhakaiho River wet weather survey	83
15.1.2	Mangaone Stream wet weather survey	84
15.2	Freshwater biomonitoring	85
15.2.1	Macroinvertebrate surveys	85
15.2.1.1	Macroinvertebrate survey 9 November 2021	86
15.2.1.2	Macroinvertebrate survey 18 March 2022	87
16	Discussion	89

16.1	Discussion of site performance	89
16.2	Environmental effects of exercise of consents	89
16.3	Evaluation of performance	90
16.4	Exercise of option to review consent	90
17	Recommendations	91
17.1	Recommendations from the 2020-2021 Annual Report	91
17.2	Alterations to monitoring programmes for 2022-2023	91
17.3	Recommendations	92
	Glossary of common terms and abbreviations	94
	Bibliography and references	97
Appendix I	Resource consents held by Companies in the Lower Waiwhakaiho River and Mangaone Stream catchments	
Appendix II	Categories used to evaluate environmental and administrative performance	

List of tables

Table 1	Resource consents for discharges to the Mangaone Stream and lower Waiwhakaiho River from New Plymouth industrial area	4
Table 2	Allied Concrete stormwater sampling results, site STW002033	12
Table 3	Incidents, investigations, and interventions summary table	12
Table 4	Summary of performance for Allied Concrete consent 4539-2	13
Table 5	McLeod's Drain stormwater sampling results, site IND004002	17
Table 6	Devon 662 wetland stormwater sampling results, site STW002003	18
Table 7	Devon 662 groundwater sampling results, 17 March 2022	19
Table 8	Devon 662 groundwater sampling results, 21 June 2022	20
Table 9	Waiwhakaiho River receiving water sampling results, 23 September 2021	21
Table 10	Mangaone Stream receiving water sampling results, 20 May 2022	22
Table 11	Summary of performance for Devon 662 Ltd Partnership consent 3865-4	23
Table 12	Dialog Fitzroy stormwater sampling results, site STW001021	27
Table 13	Dialog Fitzroy/Technix combined stormwater sampling results, site STW002001	27
Table 14	Summary of performance for Dialog Fitzroy consent 0021-4	28
Table 15	Summary of performance for Dialog Fitzroy consent 9853-2	29
Table 16	Downer stormwater sampling results, site IND002002	32
Table 17	Downer stormwater sampling results, site MGO000189	33
Table 18	Incidents, investigations, and interventions summary table	33

Table 19	Summary of performance for Downer EDI consent 3917-3	34
Table 20	Envirowaste stormwater sampling results, site STW002091	36
Table 21	Envirowaste stormwater sampling results, site STW002092	36
Table 22	Summary of performance for Envirowaste consent 10109-1	36
Table 23	Firth stormwater sampling results, site IND002001	39
Table 24	Firth stormwater sampling results, site STW001080	40
Table 25	Summary of performance for Firth consent 0392-4	40
Table 26	FBT stormwater sampling results, site STW001146	44
Table 27	Summary of performance for Freight and Bulk Transport Holdings Ltd consent 10008-1	44
Table 28	KiwiRail stormwater sampling results, site IND002014	47
Table 29	Mangamiro Stream surface water sampling results, 20 May 2022	48
Table 30	Summary of performance for KiwiRail consent 1735-3	49
Table 31	Summary of performance for KiwiRail consent 3528-3	49
Table 32	Stormwater sampling results for Burton Street, site STW001081	54
Table 33	Stormwater sampling results for McLeod's Drain, site STW001001	54
Table 34	Stormwater sampling results for Vickers Road, site STW001020	55
Table 35	Stormwater sampling results for mid Katere Road, site STW001116	55
Table 36	Stormwater sampling results for Hurlstone Drive, site STW001035	56
Table 37	NPDC groundwater sampling results, site GND0556	56
Table 38	NPDC groundwater sampling results, site GND0555	57
Table 39	NPDC groundwater sampling results, site GND0548	58
Table 40	NPDC landfill leachate and surface water sampling results, 17 March 2022	59
Table 41	NPDC landfill leachate and surface water sampling results, 21 June 2022	60
Table 42	Summary of performance for NPDC consent 1275-3	61
Table 43	Summary of performance for NPDC consent 5163-2	61
Table 44	Summary of performance for NPDC consent 4984-2	62
Table 45	Ravensdown stormwater sampling results, site STW002097	64
Table 46	Ravensdown's incidents, investigations, and interventions summary table	65
Table 47	Summary of performance for Ravensdown consent 10513-1	66
Table 48	TSM stormwater sampling results, site IND001068	69
Table 49	TSM stormwater sampling results, site IND001069	69
Table 50	LOSP treatment chemicals detected in TSM stormwater and Mangaone Stream below discharge	70
Table 51	Surface water sampling results below TSM discharge, site MGO000145	71
Table 52	Results of sediment sampling in the Mangaone Stream	72

Table 53	Summary of performance for TSM consent 3491-3	73
Table 54	Combined Technix/Dialog Fitzroy stormwater sampling results, site STW002001	76
Table 55	Combined Technix/NPDC stormwater sampling results, site STW001020	77
Table 56	Technix stormwater discharge sampling results, site STW001154	77
Table 57	Summary of performance for Technix consent 0291-3	78
Table 58	Summary of performance for Technix consent 9981-1	78
Table 59	Summary of performance for Technix consent 9982-1	79
Table 60	Waste Management stormwater sampling results, site STW002098	81
Table 61	Summary of performance for Waste Management consent 10430-1	82
Table 62	Results of wet weather monitoring of lower Waiwhakaiho River, 20 May 2022	83
Table 63	Results of wet weather monitoring of Mangaone Stream, 20 May 2022	84

List of figures

Figure 1	Lower Waiwhakaiho industrial catchment and sampling sites	6
Figure 2	Groundwater monitoring bore locations and associated surface water sampling sites	9
Figure 3	Aerial view of Allied Concrete site location	10
Figure 4	Aerial view of Devon 662 site and sampling point locations (prior to demolition works in 2021)	15
Figure 5	Aerial view of Technix Group Ltd and Dialog Fitzroy Ltd subdivided site	25
Figure 6	Aerial view of Dialog site and associated stormwater discharge points	26
Figure 7	Aerial view of Downer site and sampling point locations	30
Figure 8	Aerial view of Envirowaste site and sampling locations	35
Figure 9	Aerial view of Firth site and sampling locations	38
Figure 10	Aerial view of FBT site	42
Figure 11	Aerial view of KiwiRail site and sampling locations	46
Figure 12	Aerial view of NPDC stormwater and leachate discharge locations in the Waiwhakaiho Catchment	52
Figure 13	Aerial view of NPDC stormwater discharges to the Mangaone Stream	52
Figure 14	Aerial view of Ravensdown site (building construction since completed)	63
Figure 15	Aerial view of Taranaki Sawmills Katere Road site and sampling locations.	67
Figure 16	Aerial view of Technix site, drainage system, and sampling locations	74
Figure 17	View of extent of Technix property (in yellow). Stormwater discharge from Dialog Fitzroy, which leases part of the property from Technix, is shown in Stormwater Area 1 and 2)	75
Figure 18	Aerial view of Waste Management site and sampling location	80
Figure 19	Biomonitoring sites in the Lower Waiwhakaiho Catchment	86

Figure 20	Biomonitoring sites in the Waiwhakaiho River Catchment with taxa number, MCI scores and SQMCI scores for each site, 9 November 2021	87
Figure 21	Biomonitoring sites in the Waiwhakaiho River Catchment with taxa number, MCI scores and SQMCI scores for each site, 18 March 2022	88

List of photos

Photo 1	View of Downer site with scrubber effluent settling ponds in foreground, May 2020	32
Photo 2	FBT truck wash discharge to trade waste	43

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 2021 to June 2022 by the Taranaki Regional Council (the Council) on the monitoring programme associated with resource consents held by 13 industries and New Plymouth District Council (NPDC) in the Lower Waiwhakaiho catchment. The monitoring covers discharges to water and land in the Fitzroy and Katere Road industrial areas of New Plymouth.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the consents held by these industries that relate to discharges of stormwater, wastewater and leachate to the Lower Waiwhakaiho River and Mangaone Stream, and to land in the Mangaone Stream catchment.

One of the intents of the *Resource Management Act 1991* (RMA) is that environmental management should be integrated across all media, so that a consent holder's use of water, air, and land should be considered from a single comprehensive environmental perspective. Accordingly, the Council generally implements integrated environmental monitoring programmes and reports the results of the programmes jointly. This report discusses the environmental effects of the companies' use of water and land, and is the 29th combined annual report by the Council for these consent holders.

A separate report covers the results of the Council's monitoring programmes associated with the air discharge permits held by some of these industries.

The lower Waiwhakaiho River has been identified by the Council as a resource of regional significance that has demonstrated evidence of adverse impact from catchment-wide point and diffuse source pollution and other river usage. This is apparent particularly during periods of low flow accentuated by abstraction related to operation of the hydroelectric power station at Mangamahoe. The Mangaone Stream has also been identified in Appendix IA of the *Regional Freshwater Plan for Taranaki* as a stream of high ecological value. This tributary of the Waiwhakaiho River has particularly high native fish diversity, including the presence of threatened species. It is therefore important that monitoring of the Waiwhakaiho River and Mangaone Stream is continued, particularly in relation to any major wastewater or stormwater discharges, in order that these water bodies are safeguarded as resources for the area.

1.1.2 Structure of this report

Section 1 of this report is a background section. It sets out general information about:

- consent compliance monitoring under the RMA and the Council's obligations;
- the Council's approach to monitoring sites through annual programmes;
- the resource consents held by the companies in the Lower Waiwhakaiho catchment;
- the nature of the monitoring programme in place for the period under review; and
- a description of the activities and operations conducted on each consent holder's site.

Sections 2 -14 present the results of monitoring at each individual site during the period under review, including scientific and technical data, the results, their interpretations, and their significance for the environment, and presents recommendations to be implemented in the 2022-2023 monitoring year.

Section 15 presents the results of receiving water quality monitoring for the Mangaone Stream and the Waiwhakaiho River, their interpretation and their significance.

Section 16 discusses the general site performance of the consent holders within the catchment, their interpretation, and their significance for the environment in the immediate vicinity of the sites under discussion.

Section 17 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 primarily addresses environmental 'effects' which are defined as positive or adverse, temporary or permanent, past, present or future, or cumulative. Effects may arise in relation to:

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

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

1.1.4 Evaluation of environmental and administrative performance

Besides discussing the various details of the performance and extent of compliance by the consent holders, this report also assigns a rating as to each Company's environmental and administrative performance during the period under review. The rating categories are high, good, improvement required and poor for both environmental and administrative performance. The interpretations for these ratings are found in appendix 2.

For reference, in the 2021-2022 year, consent holders were found to achieve a high level of environmental performance and compliance for 88% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 10% of the consents, a good level of environmental performance and compliance was achieved.¹

¹ The Council has used these compliance grading criteria for more than 18 years. They align closely with the 4 compliance grades in the MfE Best Practice Guidelines for Compliance, Monitoring and Enforcement, 2018

1.2 Resource consents

The locations of the consent holders monitored under this programme and the chemical sampling sites are shown in Figure 1.

A total of 19 consents were held to discharge stormwater, wastewater, and leachate from the industrial area at Fitzroy, New Plymouth to the lower Waiwhakaiho River and Mangaone Stream during the period under review (Table 1). Each of these permits was issued by the Council as a resource consent under Section 87(e) of the RMA. Details of the resource consents are summarised in the table below. Summaries of the conditions attached to each permit are set out in the 'Evaluation of performance' section for each consent holder.

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

Stormwater discharge consents have standardised special conditions that:

- Require the consent holder to adopt the best practical option to minimise effects.
- Limit the area from which stormwater can be discharged.
- Require the use of a stormwater discharge system.
- Limit constituents of the discharge, with specific regard to pH, suspended solids and oil and grease.
- Require that the discharge does not cause certain effects in the receiving waters.
- Require that the consent holder maintains a spill contingency plan to ensure that in the event of an unforeseen situation, the chances of a spillage resulting in an unauthorised discharge leaving the site are minimised.
- Require that the consent holder maintain and adhere to a management plan to ensure that the consent holder examines the activities taking place on site, and puts appropriate controls in place to minimise the potential for stormwater contamination to occur due to routine activities.
- Require the consent holder to notify the Council prior to making any changes to the site or site processes; and
- Provide for lapse (where applicable) and review of the consent.

Table 1 Resource consents for discharges to the Mangaone Stream and lower Waiwhakaiho River from New Plymouth industrial area

Consent holder	Consent No	Description	Number of conditions	Granted	Expiry date	Next review date
AML Ltd (Trading as Allied Concrete)	4539-2	To discharge stormwater and treated wastewater from truck washing at a concrete batching plant into the Mangaone Stream in the Waiwhakaiho catchment	10	30 Jul 2008	Jun 2026	-
Devon 662 Limited Partnership (Ravensdown Ltd old site)	3865-4.1	To discharge stormwater from a fertiliser storage depot onto and into land and into the Mangaone Stream and into the Waiwhakaiho River	11	06 Aug 2020	Jun 2026	June 2023
Dialog Fitzroy Ltd	0021-4	To discharge stormwater from an industrial site into the Waiwhakaiho River	10	12 Mar 2015	Jun 2032	June 2026
	9853-2	To discharge stormwater from an industrial site into the Waiwhakaiho River	10	12 Mar 2015	Jun 2032	June 2026
Downer EDI Works Ltd	3917-3	To discharge treated stormwater and minor amounts of treated air scrubber wastewater from an asphalt manufacturing plant onto land and into the Mangaone Stream	8	20 May 2015	Jun 2032	June 2026
Envirowaste Services Ltd	10109-1	To discharge stormwater from an industrial site into the Puremu Stream and an unnamed tributary of the Mangaone Stream	9	06 May 2015	Jun 2032	June 2026
Firth Industries Ltd	0392-4	To discharge stormwater and treated wastewater into the Waiwhakaiho River	10	21 July 2015	Jun 2032	June 2026
Freight & Bulk Transport Ltd	10008-1	To discharge stormwater onto and into land and into the Mangaone Stream	9	05 Jun 2015	Jun 2032	June 2026
KiwiRail Holdings Ltd	3528-3	To discharge stormwater into the Waiwhakaiho River	8	31 Mar 2017	Jun 2026	-
New Zealand Railways Corporation	1735-3	To discharge stormwater from the Smart Road Rail Terminal into an unnamed tributary of the Mangaone Stream, and into the Mangaone Stream in the Waiwhakaiho catchment	9	31 Jul 2009	Jun 2026	-
New Plymouth District Council	1275-3	To discharge stormwater from the Katere and Waiwhakaiho industrial areas into the Mangaone Stream via multiple outfalls between Egmont Road and	4	10 Jun 2008	Jun 2026	-

Consent holder	Consent No	Description	Number of conditions	Granted	Expiry date	Next review date
		the confluence with the Waiwhakaiho River...also 1697032E-5677145N, 1696882E-5677087N, 1696734E-5676990N, 1696545E-5677175N, 1696755E-5677622N, 1696757E-5677671N, 1696771E-5677957N, and 1696777E-5677965N				
	4984-2	To discharge leachate from a former landfill site into groundwater, adjacent to the Waiwhakaiho River	4	16 March 2016	Jun 2032	June 2026
	5163-2	To discharge stormwater from the Waiwhakaiho industrial area into the Waiwhakaiho River via multiple outfalls between the State Highway 3 bridge and the confluence with the Mangaone Stream.	4	10 Jun 2008	Jun 2026	-
Ravensdown Ltd	10513-1.1	To discharge stormwater from a fertiliser storage site onto and into land and into the Mangaone Stream	9	06 Aug 2020	Jun 2032	June 2026
Taranaki Sawmills Ltd	3491-3.0	To discharge stormwater from a timber treatment site into the Mangaone Stream	11	12 March 2021	June 2038	June 2026
Technix Group Ltd	0291-3	To discharge stormwater from an industrial site into the Waiwhakaiho River	9	24 Oct 2014	Jun 2032	June 2026
	9981-1	To discharge stormwater from an industrial site into the Waiwhakaiho River	8	24 Oct 2014	Jun 2032	June 2026
	9982-1	To discharge stormwater from an industrial site into the Mangaone Stream	8	24 Oct 2014	Jun 2032	June 2026
Waste Management NZ Ltd	10430-1	To discharge stormwater from a waste depot into an unnamed tributary of the Mangaone Stream	9	27 Oct 2017	Jun 2032	June 2023

1.3 Monitoring programme

1.3.1 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 consisted of four primary components.

1.3.2 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.

1.3.3 Site inspections

Council undertook 43 inspections during the monitoring period. Inspections focused on general housekeeping, effects on stormwater quality and wastewater disposal. Water and waste treatment systems and areas where chemicals or products are stored or transferred are given particular attention. Sources of data being collected by the consent holder were identified and assessed, so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council. The neighbourhood was also surveyed for environmental effects.

The frequency of inspection varied depending on the type of activity at the site, the outcome of previous inspections, and the stage of any investigation of unsourced discharges of contaminants.

1.3.4 Chemical sampling

The Council undertook sampling of both the discharges from the site and the water quality upstream and downstream of the discharge point and mixing zone in the receiving waters.

The number and location of sites sampled, the frequency and conditions of sampling, and the range of water quality parameters determined have changed since this combined monitoring programme commenced in 1988. This evolution has occurred as knowledge of the characteristics of the discharges and waters that receive them has been gained, and as the number and composition of licensed discharges has varied.

Not all parameter results from sampling are published herein, only those relevant to assessing compliance and effects. All results are available upon request.

1.3.4.1 Surface water surveys

The discharge and receiving water chemical sampling sites are shown in Figure 1.

As there are no samples taken downstream of the confluence of the Mangaone Stream and Waiwhakaiho River, the surface water surveys of these two water bodies and their discharges may be carried out separately.

Wet weather sampling was carried out on 20 May 2022 for the Mangaone Stream and Waiwhakaiho River. Samples were also collected from both the Waiwhakaiho River and Mangaone Stream in conjunction with groundwater monitoring, and from the Mangamiro Stream in relation to KiwiRail discharges, with a total of 9 surface water samples being taken for analysis.

1.3.4.2 Discharge sampling

Taken in conjunction with wet weather inspections and wet weather river surveys, 104 samples of individual site discharges were collected and analysed.

The results of the discharge monitoring are discussed in the relevant section based on the consent holder responsible for that discharge, and the receiving water results are discussed in Section 15.

1.3.4.3 Groundwater surveys

Groundwater sampling was undertaken in the vicinity of the old Bewley Road landfill and Devon 662, with total of 12 groundwater samples being collected for analysis. Groundwater sampling is conducted independently of the wet weather surface water sampling. A discharge drain and three receiving water sites are sampled in conjunction with the Bewley Road groundwater monitoring, and two receiving water sites are sampled in conjunction with the Devon 662 groundwater monitoring. The location of the sites sampled during the groundwater surveys are shown in Figure 2.

Where possible, a summary of previous monitoring data for a particular site is provided for comparative purposes. Unless specifically stated all metals results are from acid soluble analysis.

1.3.4.4 Streambed sediment sampling

Dry weather sampling of the Mangaone Stream sediments occurred this monitoring period. Samples were tested for current and historical contaminants discharged from the Taranaki Sawmills site. Sediment sampling is carried out triennially and will next be undertaken in the 2024-2025 monitoring year.

1.3.5 Biomonitoring surveys

Biological surveys are used to determine the impacts that discharges may cause over a period of time. This is distinct from chemical surveys, which only give detailed information on the constituents of a discharge at the time of sampling and not previous discharge characteristics. Biological surveys also directly indicate any significant adverse effects of discharges upon in-stream flora and fauna, so that cause-effect relationships do not have to be established as for critical levels of individual chemical parameters. Although, variation in habitat must also be taken into consideration.

1.3.5.1 Macroinvertebrate surveys

Samples of streambed macroinvertebrates and algae are collected from three sampling sites in the Lower Waiwhakaiho River and five sites in the Mangaone Stream on a biannual basis. During the 2021-2022 period, these surveys were conducted on 9 November 2021 and 18 March 2022. The locations of the biomonitoring sites are shown in Figure 19. A summary of the findings is discussed in section 15.2.

1.3.5.2 Fish survey

Fish surveys were originally undertaken at two sites in the Mangaone Stream. In the 2004-2005 fish survey report, it was proposed that future surveys incorporate more sites in an attempt to compare sites with similar habitats. This was to ensure that discharges to the Mangaone Stream are not presenting a barrier to upstream

migration. The last fish survey was conducted during the 2020-2021 monitoring year. As fish surveys are scheduled on a triennial basis, surveys will next be undertaken during the 2023-2024 monitoring year.

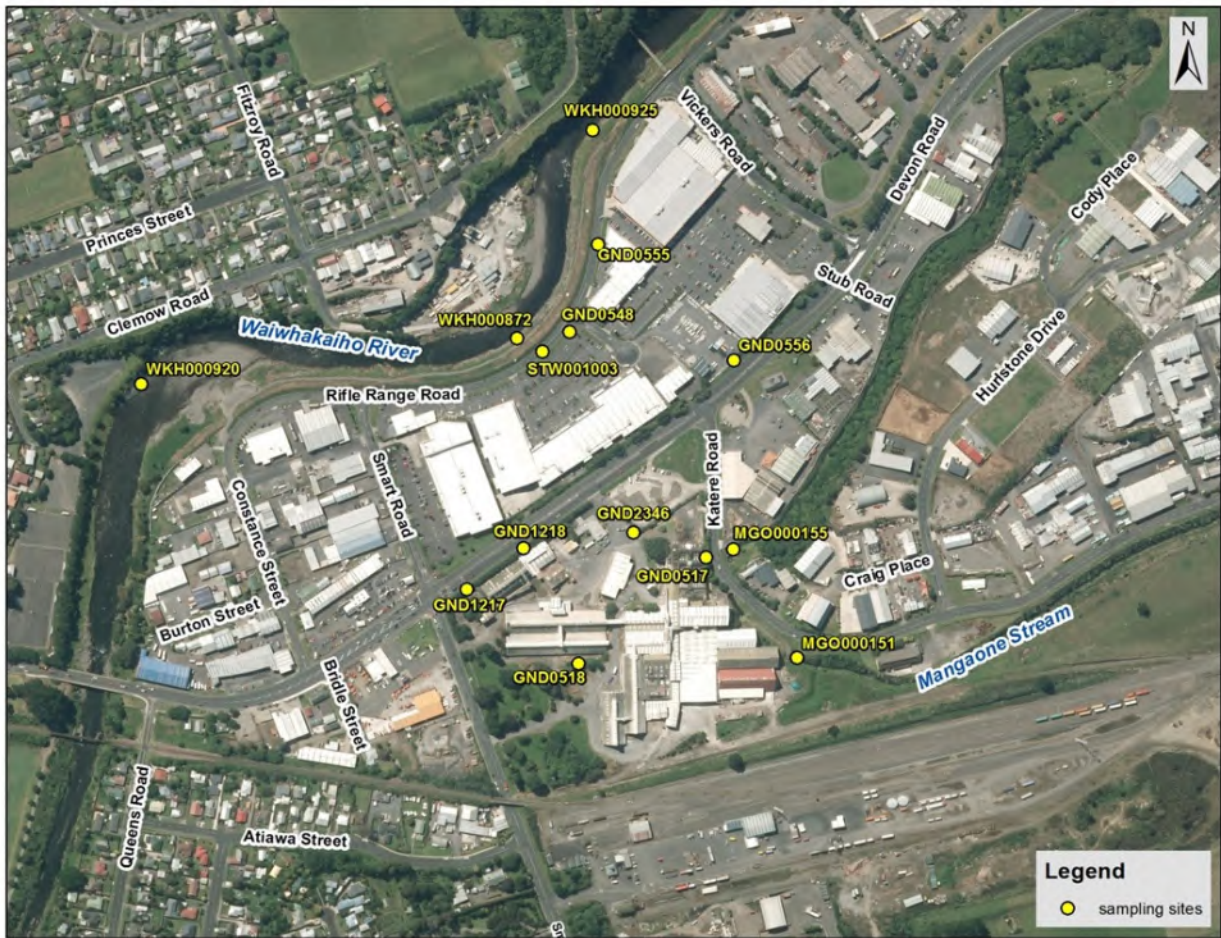


Figure 2 Groundwater monitoring bore locations and associated surface water sampling sites

2 AML Ltd (trading as Allied Concrete)

2.1 Site description

AML Ltd (Allied Concrete) operate a concrete batching plant at 67 Hurlstone Drive (Figure 3), which is one of three such plants the Company operates in the Taranaki region. The main activities are loading of ready-mixed concrete into trucks, and the unloading of concrete raw materials including cement and aggregate into silos and bins.

Stormwater from the majority of the site drains directly to the New Plymouth District Council (NPDC) stormwater system and then to the Mangaone Stream.

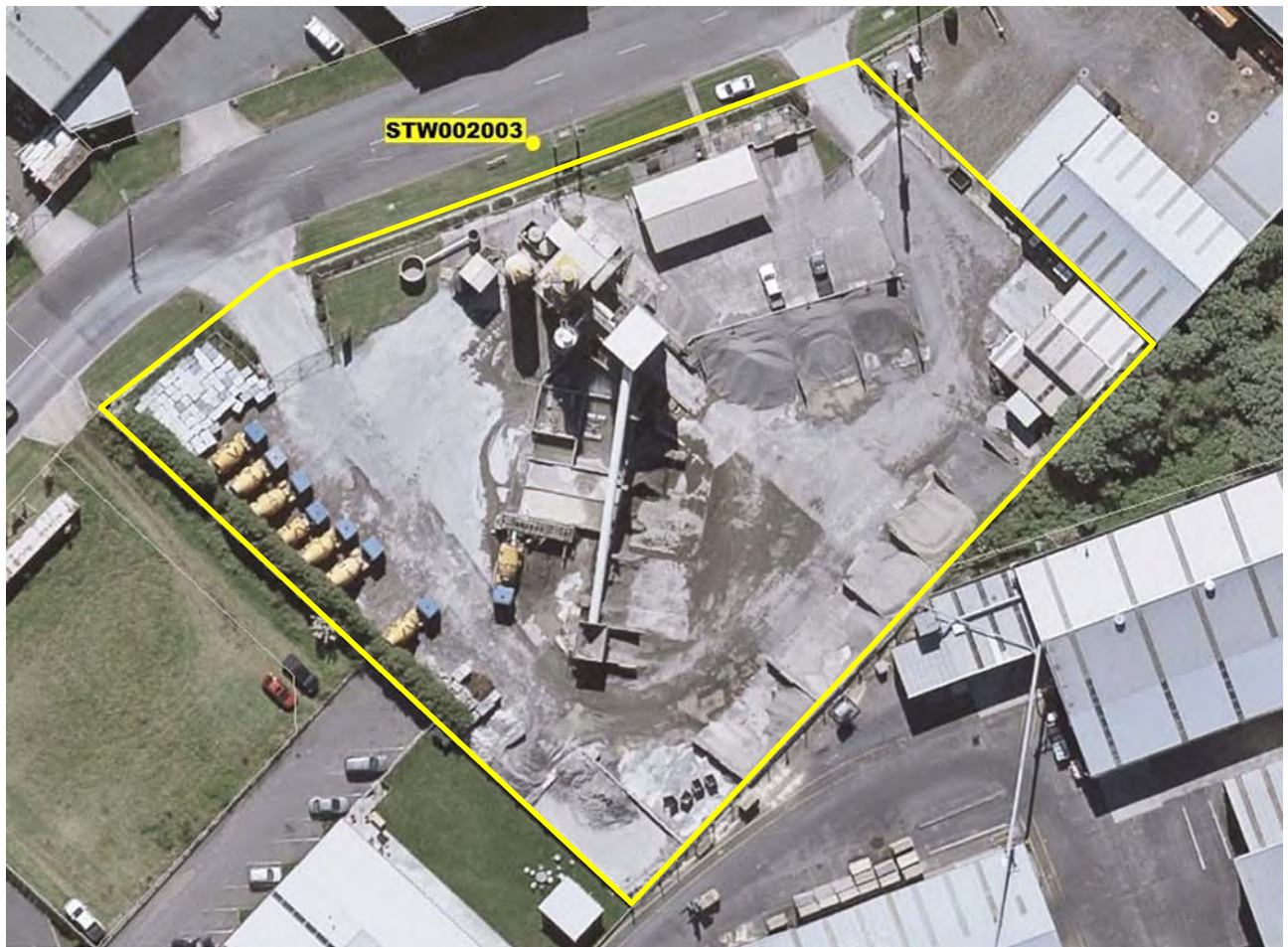


Figure 3 Aerial view of Allied Concrete site location

The wastewater treatment system consists of a series of settlement ponds and pumps for the recycling of process water. The emptied mixing bowls of up to seven concrete trucks are washed out each day using water and a small amount of detergent. This bowl wash water is discharged into two 36 m³ bins and allowed to settle for at least 18 hours before treatment through an additional series of six settlement ponds totalling approximately 360 m³ in volume. Solids from the settlement process are removed from the bins and ponds as required.

Water from the settlement ponds is recycled into the concrete manufacturing process and is also used for bowl washing. The recycled water is supplemented on most days by reticulated supply and no discharge of wastewater occurs to the stormwater drain. However, because the uncovered settlement ponds receive stormwater both directly and as run off from certain areas of the site, an excess of water may enter the

system during heavy or sustained rainfall, or if rainfall occurs when the plant is not operating. This excess is discharged via a sand filter prior to entering the NPDC stormwater system, which discharges to the Mangaone Stream immediately upstream of State Highway 3.

Allied Concrete holds water discharge permit **4539-2** to cover the discharge of stormwater and treated wastewater from truck washing at a concrete batching plant into the Mangaone Stream in the Waiwhakaiho catchment. It contains the standardised special conditions as set out in Section 1.2.

The permit is attached to this report in Appendix I.

2.2 Results

2.2.1 Inspections

Four routine compliance monitoring inspections were conducted at the site during the monitoring period to assess compliance with resource consent conditions. These inspections were conducted on 16/17 August and 8 September 2021, 8 February 2022 and 22 April 2022.

In general, routine inspections found there were no stormwater or dust discharges offsite. There was often no discharge from the sand filter, or the sand filter was in good working order. The site was clean and tidy with no evidence of spills. Often, no other issues were noted.

On 8 February 2022, it was noted there were some IBC containing corrosive substances were stored next to the top vehicle entry/exit. The consent holder was reminded that, as per condition 3, any above ground hazardous substances storage areas shall be bunded with drainage to the wastewater treatment system, and not directly to the stormwater catchment.

While the site was generally compliant at the time of each inspection, the site did not comply with conditions of its consent on 17 August 2021. A sample of stormwater, collected from a non-routine sampling site near AML's driveway on this date, had levels of suspended solids that were above the consented limits. While an inspection on 8 September 2021 noted corroding IBCs were being stored unsafely onsite and water quality results, from site STW002023, indicated pH was above the consented limit.

2.2.2 Results of discharge monitoring

Since 1996, the discharge from the concrete plant has been monitored at a manhole outside the plant, before it enters the stormwater drain along Hurlstone Drive. It is also monitored at a second point, together with contributions from the surrounding industrial area, at the point where the combined NPDC reticulated stormwater drain discharges into the Mangaone Stream (site STW001035).

Discharges from the site were sampled on two occasions during the monitoring period under review and results are displayed in Table 2. Samples were collected during a routine compliance inspection and during a catchment sampling run in wet weather conditions. Suspended solids were just above the consent limit of 100 g/m³ in May 2022, this result is within the margin of error for the test.

Results showed pH was high in samples of the discharge on both sampling occasions. However, the pH limit of 6-8 applies to the receiving waters after allowing a reasonable mixing distance. The results for the stormwater drain at the Mangaone Stream (site STW001035) are given in section 10.2.2.5, whilst the results of the receiving water (i.e. for the purposes of monitoring compliance with consent conditions) are given in Section 15.1.2.

Table 2 Allied Concrete stormwater sampling results, site STW002033

Parameter	pH	Temperature	Conductivity	Suspended Solids	Total Hydrocarbons	Turbidity
Units	pH	°C	mS/m	g/m ³	g/m ³	FNU
8 Sep 2021	9.7	11.8	31.2	77	< 0.7	115
20 May 2022	11.9	14.9	155.6	101	Visual pass	98
<i>Consent limits</i>	6-8*	-	-	100	15	-

*pH consent limits apply to the receiving waters of the Mangaone Stream

2.3 Investigations, interventions, and incidents

Table 3 sets out details of any incidents recorded, additional investigations, or interventions required by the Council in relation to Allied Concrete's activities during the 2021-2022 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
17 Aug 2021	Sediment laden stormwater, in excess of 100 g/m ³ , was discharging from the vehicle driveway where it could enter the Mangaone Stream. This was in contravention of abatement notice EAC-22058, issued as a result of a previous non-compliance.	No	Yes	Infringement notice EAC-24308 issued November 2021. The consent holder was directed to undertake work to prevent unauthorised stormwater discharges from reaching the Mangaone Stream.
6 Sep 2021	A complaint was received regarding dust entering a neighbouring site	Y	No	An inspection found no offensive or objectionable dust at the time. No further action was taken.
8 Sep 2021 and 20 May 2022	Discharge of contaminant laden stormwater (high pH) to water (Mangaone Stream).	No	No	Consent 4539-2 only requires that pH be within the range 6.0 -8.0 or not cause a rise in pH >0.5 in the receiving waters after reasonable mixing.

2.4 Evaluation of performance

A tabular summary of Allied Concrete's compliance record for the year under review is set out in Table 4.

Table 4 Summary of performance for Allied Concrete consent 4539-2

Purpose: To discharge stormwater and treated wastewater from truck washing at a concrete batching plant into the Mangaone Stream in the Waiwhakaiho catchment		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise effects	Observation and discussion at inspection	No Levels of suspended solids and pH continue to be high at STW002033.
2. Limit on stormwater catchment area	Observation and discussion at inspection	No Unauthorised run-off occurring offsite.
3. Bunding of above ground hazardous substance storage	Observation at inspection	Yes
4. Concentration limits upon potential contaminants in discharge	Chemical sampling	No Suspended sediment above consent limits
5. Discharge cannot cause specified general adverse effects beyond mixing zone	Sampling and discharge point inspections	Yes
6. pH limits on receiving water as a result of discharge	Chemical sampling	Yes
7. Maintenance of and adherence to contingency plan	Site inspections	Yes
8. Prepare, maintain and adhere to an operation and management plan.	Site inspections	No Outstanding abatement notice
9. Written notification of changes	Observation and discussion at inspection found no changes requiring notification	N/A
10. Optional review provision re environmental effects	No further provision for review prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		Improvement required
Overall assessment of administrative performance in respect of this consent		Improvement required

N/A = not applicable

During the year, Allied Concrete demonstrated a level of environmental and administrative performance that required improvement as defined in Appendix II. During the review period, compliance inspections and water quality analysis found consent conditions were breached on two separate occasions (for the incorrect storage of IBCs and high levels of suspended solids in the stormwater discharge respectively). Allied Concrete needs to investigate and mitigate the source of suspended solids in stormwater discharges from their site, as per the outstanding Abatement Notice EAC-22058.

3 Devon 662 Ltd Partnership

3.1 Site description

Previously operating as the New Plymouth depot of Ravensdown Fertiliser Co-operative Ltd (Ravensdown), the Devon 662 Partnership (Devon 662) site occupies an area of approximately 7 ha bounded by Devon, Smart and Katere Roads, and the Smart Road rail yard (Figure 4). It is also bordered on the eastern boundary by the Mangaone Stream.

While operating as Ravensdown, the depot previously received, bagged, blended and distributed fertilisers in various forms, namely superphosphate, lime, dolomite and imported high analysis products such as ammonium sulphate, urea, triple super, potassium chloride (potash) and monoammonium and diammonium phosphates (MAP & DAP). Small volumes of trace element fertilisers such as zinc sulphate were also handled through the store. Approximately 250,000 tonnes of fertiliser were distributed per annum.



Figure 4 Aerial view of Devon 662 site and sampling point locations (prior to demolition works in 2021)

Prior to 1 July 1997, Farmers Fertiliser Ltd manufactured super phosphate on the site by acidulation of phosphate rock. Sulphuric acid was manufactured from elemental sulphur. A chrome sulphate plant was run in conjunction with the sulphuric acid plant. Hydrofluorosilicic acid was produced as a by-product of the rock acidulation process. The manufacturing plants were all decommissioned and subsequently removed from site, with the acid plant being the last plant to be removed, which was completed during the 2002-2003 year. After decommissioning, the acid tank was retained for storage of liquid wastes containing high levels of fertiliser.

Stormwater from the site discharges to both the Waiwhakaiho River and the Mangaone Stream.

Drainage from western and northern parts of the site flows to the Waiwhakaiho River, via an underground drain that runs alongside Devon Road to the Smart Road intersection, where it meets a piped tributary of the river. The piped tributary, known as McLeod's Drain, originates in the Queens Road area and runs for approximately 600 m beneath lower Smart Road from the railway. The drain then joins the river 50 m downstream of Smart Road. The mean flow of the tributary is approximately 10 L/s. All of the former manufacturing plants on the Devon 662 site were in this catchment.

Drainage from southern and eastern parts of the site flows to the Mangaone Stream at several points. The catchment area of about 2.8 ha includes the (road and rail) transfer area for fertilisers. Part of the fertiliser transfer area is on land owned by KiwiRail. The main discharge from this catchment is via a short drain that meets the Mangaone Stream about 150 m above the Katere Road Bridge. The Mangamiro Stream, which is a small piped tributary of the Mangaone Stream, exits immediately upstream of the stormwater drain. The other discharge points to the stream are mainly roof drain outlets. Ravensdown ceased operations and vacated the site in November 2018, following the recent purchase by Devon 662.

Devon 662 holds resource consent **3865-4** to discharge stormwater from a fertiliser storage depot onto and into land and into the Mangaone Stream and into the Waiwhakaiho River. This consent combined the activities of the two prior consents **3140-2** and **3865-3**.

It contains the standardised conditions as well as two extra conditions requiring the maintenance of groundwater bores and foot access to water sampling sites.

3.2 Results

3.2.1 Inspections

Three routine compliance monitoring inspections were conducted at the site during the monitoring period to assess compliance with resource consent conditions. These inspections were conducted on 7 September 2021, 9 February 2022 and 9 May 2022.

While the inspection on 7 September 2021 was routine, it was undertaken during an incident investigation for a hydrocarbon spill in the Waiwhakaiho River. There were no substance spills noted on site. Although there was some rainfall during and prior to the inspection, there were no discharges occurring off-site. All drains contained sediment socks and temporary bands. Tree, wood and other debris prevented access to the manhole on Devon Road, so no samples were collected. Inspections on 9 February and 9 May 2022 were undertaken to monitor compliance of earthwork activities. The site was compliant at the time of each inspection.

3.2.2 Results of discharge monitoring

Stormwater discharge samples were collected from two locations on the Devon 662 site, where stormwater discharges to the Waiwhakaiho River and the Mangaone Stream, on 23 September 2021 and 20 May 2022.

Waiwhakaiho River

The discharge to the Waiwhakaiho River is sampled at a manhole on the old effluent line to McLeod's Drain (site IND004002). The results of monitoring for the period under review are presented in Table 5. The consent limits for pH, dissolved reactive phosphorus, and oil and grease were complied with on all occasions. Unionised ammonia was above the consent limit of 0.025 g/m³, however, as noted this is the concentration present in the discharge and not an instream value. The suspended solids limit was exceeded on one occasion, and may be attributed to sediment that was unsettled while the sample was being collected.

Table 5 McLeod's Drain stormwater sampling results, site IND004002

Parameter	Units	23 September 2021	Resource consent limits & ANZECC guideline values
		12:30	
pH	pH	6.7	6-9
Temperature	°C	14.7	-
Conductivity	mS/m	197.4	-
Suspended Solids	g/m ³	400	100
Turbidity	FNU/NTU	200	-
Nutrients			
NH ₃	g/m ³	0.057	0.025*
NH ₄	g/m ³	32	-
NNN	g/m ³	25	-
Total Phosphorus	g/m ³	5.2	-
DRP	g/m ³	<0.004	30
Metals (total)			
Arsenic	g/m ³	0.0059	0.024
Cadmium	g/m ³	0.00090	0.2
Chromium	g/m ³	0.0136	1.0
Copper	g/m ³	0.053	1.4
Lead	g/m ³	0.0123	3.4
Nickel	g/m ³	0.0128	11
Zinc	g/m ³	0.169	8.0
Metals (dissolved)			
Arsenic	g/m ³	<0.0010	-
Cadmium	g/m ³	0.00038	-
Chromium	g/m ³	<0.0005	-
Copper	g/m ³	0.0170	-
Lead	g/m ³	<0.00010	-
Nickel	g/m ³	0.0128	-
Zinc	g/m ³	<0.00010	-

* NH₃ limits apply to instream only (not discharge); ANZECC guidelines apply to metal concentrations.

Mangaone Stream

The main discharge to the Mangaone Stream, made up of stormwater and/or groundwater seepage, is sampled from a small wetland area in the south-eastern corner of the site (site code STW002003). The results of monitoring for the period under review are presented in Table 6. All results were within consented limits. Monitoring for metals was not conducted at this site during the review period.

Table 6 Devon 662 wetland stormwater sampling results, site STW002003

Parameter	Units	20 May 2022	Resource consent limits & ANZECC guideline values
		11:50	
pH	pH	7.0	6-9
Temperature	°C	14.6	-
Conductivity	mS/m	101.8	-
Suspended Solids	g/m ³	4	100
Turbidity	FNU/NTU	3.8	-
BOD	g O ₂ /m ³	-	-
Nutrients			
NH ₃	g/m ³	0.0148	0.025*
NH ₄	g/m ³	5.8	-
NNN	g/m ³	15.9	-
Total Phosphorus	g/m ³	0.92	-
DRP	g/m ³	0.75	30

3.2.3 Results of groundwater monitoring

Since the 2002-2003 period, a full survey of the groundwater in the immediate vicinity of the site has been undertaken at three of the five bores on two occasions during each monitoring year, along with associated receiving water monitoring (two surface water sites). Bores GND0518 and GND1217 are no longer available for sampling. The first round of sampling was carried out during the summer period, on 17 March 2022, while the second was conducted on 21 June 2022 during the autumn sampling season. The locations of the monitoring bores are shown in Figure 2. The results of the sampling are given in Table 7 and Table 8, and compared to the maximum acceptable value (MAV) of the NZ Drinking Water standards (DWSNZ).

March 2022

The results of the March 2022 survey indicate that parameters at most sites were within historical ranges. However, it appeared that the level of dissolved oxygen was slightly lower mean and median levels at all sites. Concentrations of unionised ammonia were slightly above the mean and median but below maximum recorded concentrations at all sites except GND0517. A similar pattern was noted in sulphate concentrations at GND0517 and GND1218. And also for ammoniacal nitrogen concentrations at GND1218 and MGO000155.

The pH level and concentrations of sulphate were outside the DWSNZ MAV for these parameters at GND0517 and GND1218, and for lead at GND1218. However, groundwater from these bores is not used for potable supply.

Table 7 Devon 662 groundwater sampling results, 17 March 2022

Parameter	Units	GND0517	GND1218	GND2346	MGO000151	MGO000155	DWSNZ MAV
		10:55	08:45	09:40	11:45	11:25	
Level	mbsl	4.27	2.468	2.155	-	-	-
pH	pH	6.6	6.3	8.0	7.4	7.4	7.0-8.5
Temperature	°C	18.4	19.2	17.5	16.0	15.9	-
Conductivity	mS/m	415	329	39.3	20.2	20.8	-
DO	mg/L	0.01	0.14	0.0	7.87	8.5	-
	%	0.1	1.5	-1.2	79.4	85.5	-
Fluoride	g/m ³	0.016	0.23	0.17	-	-	1.5
Sulphate	g/m ³	600	1020	0.6	-	-	250
Nutrients							
NH ₃	g/m ³	0.055	0.166	0.035	0.00086	0.00177	-
NH ₄	g/m ³	32	200	0.84	0.106	0.188	-
Total Phosphorus	g/m ³	0.070	0.038	0.189	0.009	0.008	-
DRP	g/m ³	0.047	<0.004	0.180	<0.004	0.004	-
Metals (acid soluble)							
Cadmium	g/m ³	<0.0010	<0.0010	<0.0010	-	-	0.004
Chromium	g/m ³	<0.010	<0.010	<0.010	-	-	0.05
Lead	g/m ³	<0.002	0.002	<0.002	-	-	0.001
Nickel	g/m ³	<0.010	<0.010	<0.010	-	-	0.008
Zinc	g/m ³	<0.02	0.03	<0.02	-	-	-
Metals (other)							
Copper (total)	g/m ³	<0.010	0.020	<0.010	-	-	2
Vanadium (d)	g/m ³	0.0019	<0.0010	<0.0010	-	-	-

June 2022

The June 2022 survey was reduced compared to the summer sampling. While most parameters measured were below their respective DWSNZ MAV, the pH level and sulphate concentrations at groundwater bores GND0517 and GND1218 were outside these limits. Concentrations of sulphate were above the mean and median but below maximum recorded concentrations at GND0517 and GND1218. While results were either at, or set new maximum levels for concentrations of unionised ammonia (GND1218), ammoniacal nitrogen (GND1218 and MGO000155), and for total phosphorus and turbidity (MGO000151 and MGO000155). However, it was noted that the stream level was elevated and the water was flowing swiftly, turbid with elevated water level during the June surface water sampling round.

Table 8 Devon 662 groundwater sampling results, 21 June 2022

Parameter	Units	GND0517	GND1218	GND2346	MGO000151	MGO000155	DWSNZ MAV
		11:00	09:55	10:25	11:30	11:35	
Level	mbsl	4.08	2.29	1.926	-	-	-
pH	pH	6.6	6.3	8.0	7.4	7.1	7.0-8.5
Temperature	°C	16.3	16.4	15.5	11.4	11.4	-
Conductivity	mS/m	382	298	39.4	16.6	17.2	-
Sulphate	g/m ³	580	750	<0.5	-	-	250
Turbidity	FNU	-	-	-	6.2	5.8	-
Nutrients							
NH ₃	g/m ³	0.138	0.61	0.027	0.00037	0.00062	-
NH ₄	g/m ³	45	175	0.79	0.118	0.20	-
Total Phosphorus	g/m ³	0.059	0.012	0.174	0.031	0.035	-
DRP	g/m ³	0.043	<0.004	0.162	<0.004	<0.004	-
Metals (acid soluble)							
Lead	g/m ³	-	-	-	-	-	0.001
Zinc	g/m ³	-	-	-	-	-	-
Metals (other)							
Copper (total)	g/m ³	-	-	-	-	-	2
Vanadium (d)	g/m ³	-	-	-	-	-	-

Results of instream sampling for the Manganone Stream at two sites (MGO000151 and MGO000155) are also shown in Tables 7 and 8. These sites are adjacent to the eastern and south eastern boundary of the site (Figure 2). Both sites continued to show slightly elevated levels of ammoniacal nitrogen and unionised ammonia, although results were still within historical averages. These results show that groundwater from the site continues to influence the stream, however, all results met the guideline values of the NZ Drinking Water Standards.

Elevated levels of nutrients (nitrogen and phosphorus) and sulphates were present in the bores on the site (GND0518) and adjacent to the northern boundary on Devon Road (GND1218), when compared to historical averages. This is consistent with the ongoing disturbance and mobilisation of in situ contaminants as the site is remediated. The predominant hydrogeological flow paths are to the north and northeast of the site, and as such, short-term elevations of contaminants in these bores are not unexpected. It is also expected that these contaminants will re-mobilise offsite and could be detected in groundwater monitoring bores down-gradient of the site. Ongoing monitoring will be required to establish longer-term trends.

There were no significant effects noted in the Waiwhakaiho River or Mangaone Stream during wet weather surveys, as noted in section 15.1.

3.2.4 Results of receiving environment monitoring

Routine sampling is undertaken to assess the condition of the receiving waters throughout the entire catchment and is reported in Section 15. However, separate water quality surveys can be undertaken at various sites to understand the direct impact of individual consented stormwater discharges to the Waiwhakaiho River and Mangaone Stream. The results of one such survey are reported below.

A water quality survey was carried out in September 2021 to assess the impact of the stormwater discharge, at IND004002, on the Waiwhakaiho River (discharge enters the river via McLeod's Drain). Three sites were sampled along the Waiwhakaiho River during a period of wet weather and the results are presented in Table 9.

Table 9 Waiwhakaiho River receiving water sampling results, 23 September 2021

Site		WKH000920	STW001001	WKH000872	WKH000925	Resource consent limits & ANZECC guideline values
Parameter	Unit	Upstream	Discharge from IND004002 enters Waiwhakaiho River via McLeod's Drain	150m downstream	300m downstream	
pH	pH	7.0	6.5	6.8	7.0	6-9
Temperature	°C	12.0	15.1	15.8	11.9	-
Conductivity	mS/m	5.2	47.8	20.6	5.2	-
Suspended Solids	g/m ³	17	39	< 3.0	18	100
Turbidity	FNU	8.0	35	2.2	8.5	-
TBOD ₅ (dissolved)	g O ₂ /m ³	-	4.1	2.6	-	-
Nutrients						
NH ₃	g/m ³	0.00008	0.0064	0.0118	0.00014	0.025*
NH ₄	g/m ³	0.031	6.5	5.2	0.054	-
NNN	g/m ³	0.175	5.1	1.58	0.182	-
DRP	g/m ³	0.010	< 0.004	0.010	0.010	30
Metals (total)						
Arsenic	g/m ³	< 0.0011	0.0022	< 0.0011	< 0.0011	0.024
Cadmium	g/m ³	< 0.000053	0.000186	< 0.000053	< 0.000053	0.2
Chromium	g/m ³	< 0.00053	0.0035	< 0.00053	< 0.00053	1.0
Copper	g/m ³	0.0021	0.0156	0.0023	0.0024	1.4
Lead	g/m ³	0.00014	0.0038	0.00029	0.00016	3.4
Nickel	g/m ³	< 0.00053	0.0036	< 0.00053	< 0.00053	11
Zinc	g/m ³	0.0024	0.084	0.030	0.0046	8.0
Metals (dissolved)						
Arsenic	g/m ³	< 0.0010	< 0.0010	< 0.0010	< 0.0010	-
Cadmium	g/m ³	< 0.00005	0.00011	< 0.00005	< 0.00005	-
Chromium	g/m ³	< 0.0005	< 0.0005	< 0.0005	< 0.0005	-
Copper	g/m ³	0.0012	0.0046	0.0019	0.0013	-

Site		WKH000920	STW001001	WKH000872	WKH000925	Resource consent limits & ANZECC guideline values
Parameter	Unit	Upstream	Discharge from IND004002 enters Waiwhakaiho River via McLeod's Drain	150m downstream	300m downstream	
Lead	g/m ³	< 0.00010	0.00104	0.0012	< 0.00010	-
Nickel	g/m ³	< 0.0005	0.0030	< 0.0005	< 0.0005	-
Zinc	g/m ³	0.0011	0.060	0.028	0.0011	-

Tests results from STW001001 indicated a relatively high contaminant load was entering the Waiwhakaiho River, via McLeod's Drain, during the September 2021 sampling. Concentrations of a number of parameters in the mid river reaches (WKH000872) were considerably higher than respective levels detected at the upstream sampling site (WKH000920). However, overall there was very little change in the water quality between the upstream site and lowest downstream site. This suggests that after reasonable mixing, the discharge is effectively diluted by the Waiwhakaiho River. Only the concentration of total zinc in mid to lower reaches of the Waiwhakaiho River remained at around two times the levels noted upstream. However, the levels of total zinc (and all other parameters tested) were well below their consented limits.

A water quality survey was carried out in May 2022 at two sites in the Mangaone Stream upstream and downstream of the Devon 662 site. The purpose of the survey was to assess any impacts of the site remediation works on the quality of the receiving waters. Of particular interest were the nutrient, metals (dissolved and total), and suspended solids concentrations. The results of the sampling (Table 10) showed that there were no effects in the Mangaone Stream, as a result of groundwater and stormwater discharges during the decommissioning of the Devon 662 site.

Table 10 Mangaone Stream receiving water sampling results, 20 May 2022

Site		MGO000148	MGO000153	Resource consent limits & ANZECC guideline values
Parameter	Unit	Upstream	Downstream	
pH	pH	7.2	7.2	6-9
Temperature	°C	15.2	14.2	-
Conductivity	mS/m	15.5	15.5	-
Suspended Solids	g/m ³	19	36	100
Turbidity	FNU	14.2	23	-
CBOD (dissolved)	g O ₂ /m ³	<1.0	-	-
Nutrients				
NH ₃	g/m ³	-	0.00063	0.025*
NH ₄	g/m ³	-	0.165	-
NNN	g/m ³	0.85	-	-
DRP	g/m ³	0.007	0.008	30
Metals (total)				
Arsenic	g/m ³	-	-	0.024
Cadmium	g/m ³	-	-	0.2
Chromium	g/m ³	-	-	1.0
Copper	g/m ³	-	-	1.4
Lead	g/m ³	-	-	3.4
Nickel	g/m ³	-	-	11
Zinc	g/m ³	-	-	8.0

Site		MGO000148	MGO000153	Resource consent limits & ANZECC guideline values
Parameter	Unit	Upstream	Downstream	
Metals (dissolved)				
Arsenic	g/m ³	-	-	-
Cadmium	g/m ³	-	-	-
Chromium	g/m ³	-	-	-
Copper	g/m ³	0.0012	-	-
Lead	g/m ³	-	-	-
Nickel	g/m ³	-	-	-
Zinc	g/m ³	0.0047	-	-

All results were within both the consented limits and the default guideline protection values for the 95th percentile for highly disturbed systems².

3.3 Investigations, interventions, and incidents

In the 2021-2022 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Devon 662's conditions in resource consents or provisions in Regional Plans.

3.4 Evaluation of performance

A tabular summary of Devon 662's compliance record for the year under review is set out in Table 11.

Table 11 Summary of performance for Devon 662 Ltd Partnership consent 3865-4

Purpose: To discharge stormwater from a fertiliser storage depot onto and into land and into the Manganone Stream and into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practical option	Inspection	Yes
2. Limit on catchment area	Inspection	Yes
3. Limits on discharge contaminant concentrations	Discharge sampling	Yes
4. Limit on effects in receiving water	Inspection and sampling	No Leaching of fertiliser residue into groundwater
5. Provide contingency plan	Plan received	Yes
6. Provide management plan	Plan received	Yes
7. Maintenance of groundwater bores	Inspection and sampling	Yes

² (ANZECC & ARMICANZ, 2000)

Purpose: <i>To discharge stormwater from a fertiliser storage depot onto and into land and into the Mangaone Stream and into the Waiwhakaiho River</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
8. Maintenance of site access	Inspection and sampling	No No access to 2/5 bores
9. Notification of changes	Inspection	Yes
10. Review condition	Next option for review in June 2023, recommendation attached in Section 16.4	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		Improvement required High
Overall assessment of administrative performance in respect of this consent		

N/A = not applicable

During the period under review, Devon 662 Limited Partnership demonstrated a level of environmental performance that required improvement and high level of administrative performance and compliance with their resource consent and RFWP as defined in Appendix II. The monitoring indicates that the site is still leaching fertiliser residue into groundwater and that there may be some effects noted on macroinvertebrate communities in the Mangaone Stream. These results are partially-attributed to ongoing site remediation works, which are expected to be transient in nature and followed by longer-term improvements to environmental conditions. Two of the five monitoring bores were not able to be accessed for sampling (as required by consent conditions). These need to be reinstated.

4 Dialog Fitzroy

4.1 Site description

Dialog Fitzroy Ltd (Dialog) (previously Fitzroy Engineering Group Ltd) operates an engineering business which involves the manufacturing of heavy engineering components and structures. Activities at the site also include abrasive blasting and painting.

The site was previously leased from Technix Group Ltd (Technix), and the stormwater discharges from Dialog's activities were covered under consents held by Technix. In 2013 Dialog purchased the part of the property they operate on from Technix (Figure 5) and resource consent 0021-3 was transferred to Dialog. Resource consent 0291-3 was split into two consents as the northern area covered by this consent was now owned by Dialog, and a new consent number (9853) was assigned to this catchment area.

Dialog holds two consents to discharge stormwater, **0021-4** and **9853-2**. These contain the standardised conditions given in Section 1.2. Two of these have been modified to prohibit the discharge of contaminants from hydrotesting and require the notification of any outdoor hydrotesting being undertaken.

The permits are attached to this report in Appendix I.



Figure 5 Aerial view of Technix Group Ltd and Dialog Fitzroy Ltd subdivided site

The stormwater area for consent 0021 covers the south-west section of Dialog Fitzroy's property. The stormwater drainage system runs from the south and east boundary towards the east boundary, the drainage then runs north towards the Waiwhakaiho River and discharges into the river via a stormwater drain (STW002001, Figure 6). There are multiple sumps along this system to collect stormwater.

The buildings/land use within this area include:

- Staff offices and facilities,
- Workshops (Machining, plate and general),
- Dangerous goods storage,
- Liquid oxygen tanks, and
- Blast and paint storage.

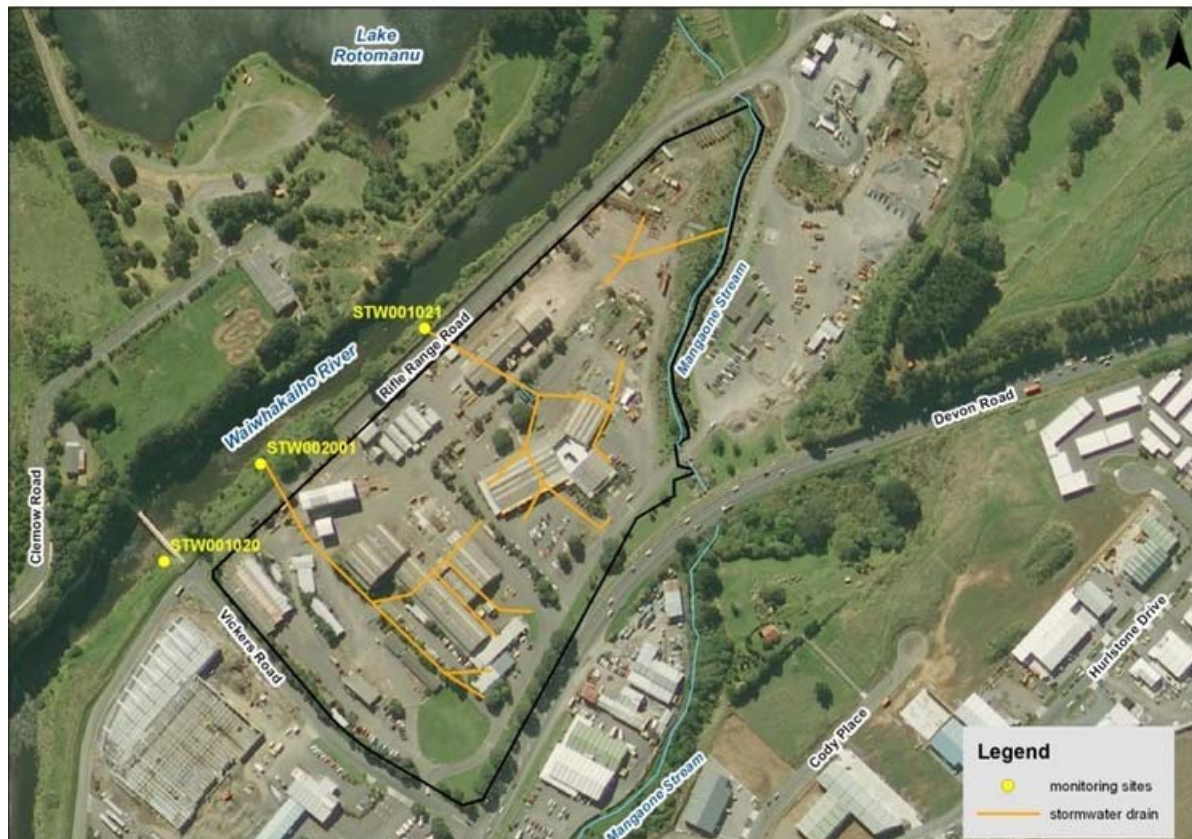


Figure 6 Aerial view of Dialog site and associated stormwater discharge points

The drainage system for the discharge covered by consent **9853** begins in the adjacent Technix property, continues north through Dialog's section, and discharges into the Waiwhakaiho River via a stormwater drain (STW001021). The system has a sump on the southern boundary and another attached to the blast and paint shop. A dangerous goods storage shed is also in this catchment area.

Dialog undertakes infrequent hydrotesting processes on large fabrications, and also operations involving the passivating of stainless steel. These activities produce wastewater that may contain contaminants such as penetrant dye and rust inhibitor, and also can be acidic. These activities sometimes occur outside. As per their operating procedures, the wastewater from these processes is banded using tarpaulin sheets, and any drains are blocked with sandbags. Once that activity is completed the waste is removed by a waste management specialist.

Dialog continue to provide and maintain a stormwater management plan and spill contingency plan.

4.2 Results

4.2.1 Inspections

Three routine compliance monitoring inspections were conducted at the site during the monitoring period to assess compliance with resource consent conditions. These inspections were conducted on 7 September 2021, 10 February 2022 and 10 May 2022.

In general, inspections found the site to be clean and tidy with no evidence of stormwater or air discharges off site, or spills on site. And there were no offensive odours beyond the boundary of the property. The inspection in September commended the large number of improvements to the housekeeping of the lay down areas. And while there were hazardous goods stored outside in drums, it was noted that the drums were sealed and would only be stored outside temporarily. In February, the inspection did note some garnet outside the blast shed and the concreted area around the stormwater drain at the top of the site had accumulated some sand, garnet and paint flakes. The consent holder was informed that some areas would need to be cleaned up. All other stormwater drains contained socks.

4.2.2 Results of discharge monitoring

There are two routine sampling points for monitoring of stormwater discharges from the Dialog Fitzroy site to the Waiwhakaiho River. These sampling points are opposite Dialog Fitzroy's plate shop (consent 0021, site STW001021), and opposite Dialog Fitzroy's blast and paint shop (consent 9853, site STW002001). The blast and paint shop discharge point also contains stormwater from the area covered by the Technix consent 0291. The results of sampling from these locations are presented in Table 12 and Table 13 respectively.

Table 12 Dialog Fitzroy stormwater sampling results, site STW001021

Parameter	Temperature	pH	Conductivity	Suspended Solids	Turbidity	Total hydrocarbons
Unit	°C	pH	mS/m	g/m ³	FNU	g/m ³
8 Sep 2021	12.8	6.7	7	21	39	< 0.7
Consent limits	-	6-9	-	100	-	15*

*Hydrocarbons measured in place of oil & grease

Table 13 Dialog Fitzroy/Technix combined stormwater sampling results, site STW002001

Parameter	Temperature	pH	Conductivity	Suspended Solids	Turbidity	Total hydrocarbons
Unit	°C	pH	mS/m	g/m ³	FNU	g/m ³
08 Sep 2021	12.2	7.2	9.8	50	72	< 0.7
20 May 2022	13.7	7.6	8.4	48	56	< 0.7
Consent limits	-	6-9	-	100	-	15*

*Hydrocarbons measured in place of oil & grease

All results were within consented limits and historical means.

4.3 Investigations, interventions, and incidents

In the 2021-2022 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Dialog's conditions in resource consents or provisions in Regional Plans.

4.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 14 and Table 15.

Table 14 Summary of performance for Dialog Fitzroy consent 0021-4

Purpose: To discharge stormwater from an industrial site into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practicable option to prevent or minimise adverse effects	Inspections, liaison with consent holder	Yes
2. Catchment not to exceed 3.3 ha	Inspections	Yes
3. No discharge of contaminants from hydrotesting activities	Inspections	Yes
4. Notification of outdoor hydrotesting	Notification received	Yes
5. Limits on contaminants in discharge	Sampling	Yes
6. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection, sampling and biomonitoring	Yes
7. Maintain a spill contingency plan	Review of documentation received. Latest version received 2018	Yes
8. Maintain and update and adhere to Stormwater Management Plan	Review of documentation received. Latest version received 2018	Yes
9. Notification prior to significant changes to processes or operations	Inspections and liaison with consent holder – no significant changes during period	N/A
10. Provision for review of consent	Next option for review in June 2026	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 15 Summary of performance for Dialog Fitzroy consent 9853-2

Purpose: To discharge stormwater from an industrial site into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practicable option to prevent or minimise adverse effects	Inspections, liaison with consent holder	Yes
2. Catchment not to exceed 3.3 ha	Inspections	Yes
3. No discharge of contaminants from hydrotesting activities	Inspections, review of sample results	Yes
4. Notification of hydrotesting	Notification received	Yes
5. Limits on pH, suspended solids, oil and grease and chloride in discharge	Sampling	Yes
6. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes
7. Maintain and update a Contingency Plan	Review of documentation received. Latest version received 2018	Yes
8. Site to operate in accordance with a Stormwater Management Plan	Review of documentation received. Latest version received 2018	Yes
9. Notification prior to significant changes to processes or operations	Inspections and liaison with consent holder – no significant changes during period	Yes
10. Provision for review of consent	Next option for review in June 2026	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

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

5 Downer EDI Works Ltd

5.1 Site description

Downer EDI Works Ltd (Downer) operates an asphalt manufacturing plant at a site off Rifle Range Road (Figure 7). A depot for maintenance, parking and storage of equipment and materials used in road-making is also on the site. Ownership of the plant has changed several times, with Works Civil Construction previously taking over the site from Technic Industries Ltd in November 1997.

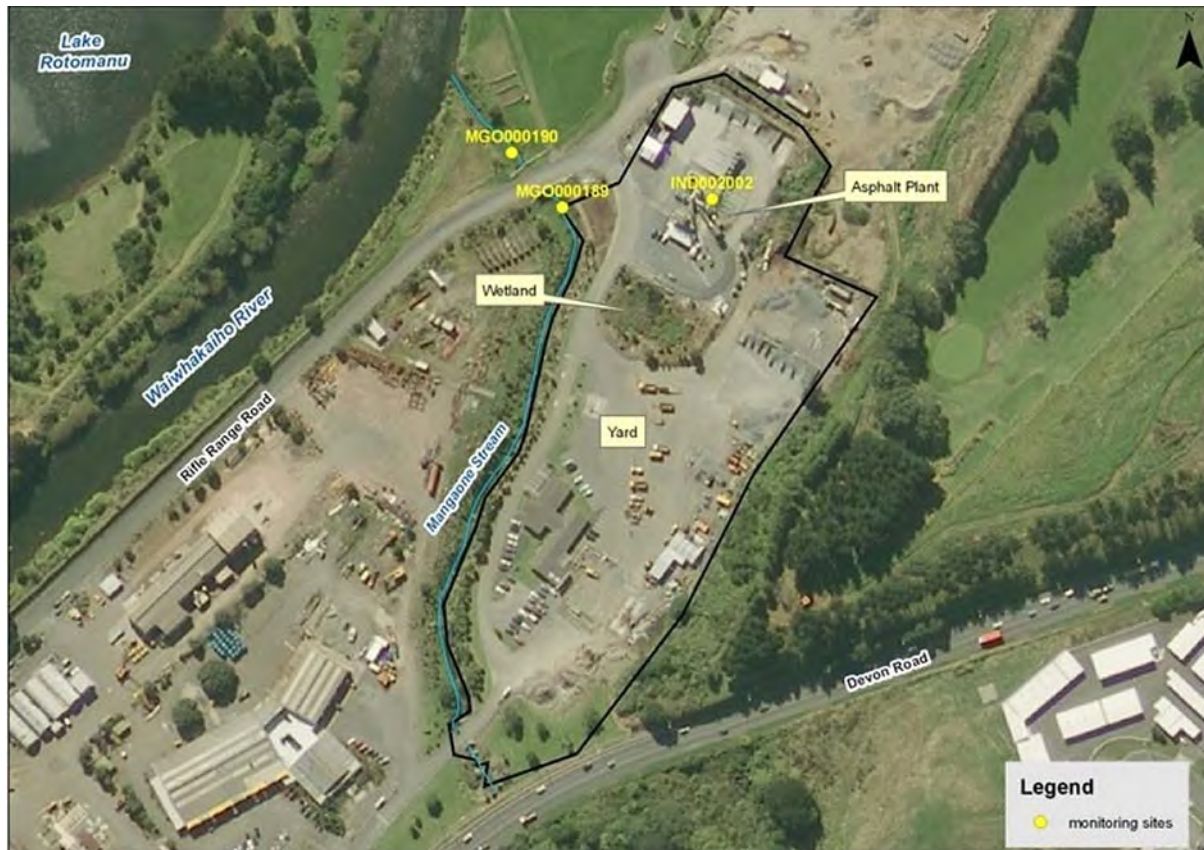


Figure 7 Aerial view of Downer site and sampling point locations

In the manufacturing process, aggregate metal is dried by gas heating and is mixed with heated bitumen to form hot-mix bitumen. Diesel oil and/or kerosene may be added to adjust the consistency of the mix. The product is loaded onto trucks for transport. Dust and gases generated from the process are treated in a wet scrubber. Scrubber effluent is treated in four settling ponds then reused.

The asphalt plant stormwater catchment contains raw materials, comprising various grades of aggregate, static bitumen tanks, bunded emulsion tanks, and stores housing bitumen additives and plant maintenance materials, such as chain oil.

The depot includes an administration building, vehicle and equipment maintenance workshops, aggregate stores, and an area for parking motor vehicles and equipment.

The plant is situated on the right bank of the Mangaone Stream near its confluence with the Waiwhakaiho River. Stormwater from this area drains via a three-stage oil separator to a small constructed wetland that also receives piped water from naturally-occurring springs in the area. Stormwater from the eastern side of the site which contain aggregate storage and the asphalt plant is treated by a three-stage interceptor prior to discharge to the network. There is also a truck wash facility in the depot area, the drainage from which is currently diverted to sewer at all times by means of a locked diversion valve.

Drainage from the asphalt plant settling ponds (which have a baffle installed on the outlet to contain floatables) and the depot both discharge via the small wetland, to the Mangaone Stream immediately above the Rifle Range Road Bridge.

Downer holds consent **3917-3** to discharge treated stormwater from an asphalt manufacturing plant onto land and into the Mangaone Stream. It contains all eight of the standardised special conditions as set out in Section 1.2.

The permit is attached to this report in Appendix I.

5.2 Results

5.2.1 Inspections

Three routine compliance monitoring inspections were conducted at the site during the monitoring period to assess compliance with resource consent conditions. These inspections were conducted on 16 August 2021, 9 February 2022 and 9 May 2022.

In general, inspections found the site was mostly tidy with the exception of a few areas that needed to be swept on occasion. It was also noted in the August inspection, that hazardous substance containers needed to be sealed and relocated to the bunded area, and the stormwater discharge areas need to be kept clear of rubbish and debris. Discharge from the wetland was clear on all inspections, and when the discharge from the settling ponds was turbid, it did not have an impact on receiving waters. There were no offensive or objectionable odours or dust beyond the boundary of the property, and dust was within allowable limits. General housekeeping and site maintenance issues were addressed promptly at the time of inspections.



Photo 1 View of Downer site with scrubber effluent settling ponds in foreground, May 2020

5.2.2 Results of discharge monitoring

Chemical monitoring of discharges from the site of Downer EDI Works Ltd takes place at two points. The scrubber settling pond effluent (Photo 1) discharges to the onsite wetland with a sample of the effluent collected from pond outlet (site IND002002). Discharge from the pond outlet is then combined with stormwater from the depot and is treated in the oil separator and constructed wetland. The combined discharge is sampled at the outlet to the Mangaone Stream (site MGO000189).

The discharge from the scrubber ponds is often highly turbid, however, further “treatment” occurs in the constructed wetland. The discharge to the wetland is usually a grey colour, and contains a high concentration of fine suspended solids.

The results of chemical monitoring of the scrubber pond effluent and combined stormwater flows for the period under review are given in Table 16 and Table 17, and compared to the limits set out in the consent.

Table 16 Downer stormwater sampling results, site IND002002

Parameter	Temperature	pH	Conductivity	Suspended Solids	Turbidity	Total hydrocarbons
Unit	°C	pH	mS/m	g/m ³	NTU/FNU	g/m ³
17 Aug 2021	13.8	7.3	26.9	13	4.7	< 0.7
20 May 2022	18.3	7.8	16.4	163	200	< 4
Consent limits	-	6-9	-	100	-	15*

*Hydrocarbons measured in place of oil & grease

Table 17 Downer stormwater sampling results, site MGO000189

Parameter	Temperature	pH	Conductivity	Suspended Solids	Turbidity	Total HC
Unit	°C	pH	mS/m	g/m ³	FNU	g/m ³
17 Aug 2021	14.4	6.6	26.1	12	-	< 0.7
20 May 2022	16.2	7.1	24.9	44	38	Visual pass
Consent limits	-	6-9	-	100	-	15*

*HC measured in place of oil & grease

In general, results for the monitoring period mostly complied with consented limits and were within expected ranges. The concentration of suspended solids on May 2022 (wet weather sampling event) were slightly elevated. Historically, environmental monitoring has found high levels of suspended sediment in the stormwater discharging from the site. And there is an outstanding Abatement Notice EAC-23612 requiring Downer to address unconsented discharges of sediment to the Mangaone Stream. However, there was no further action or non-compliance issued following the May 2022 results.

5.3 Investigations, interventions, and incidents

Table 18 sets out details of any incidents recorded, additional investigations, or interventions required by the Council in relation to Downer's activities during the 2021-2022 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 18 Incidents, investigations, and interventions summary table

Date	Details	Compliant (Y/N)	Enforcement Action Taken?	Outcome
20 May 2022	Discharge of contaminant laden stormwater (high suspended sediment) to water (Mangaone Stream).	No	No	No enforcement action for May 2022. However, Abatement notice EAC-23612, issued October 2020, still requires the consent holder to undertake work to prevent unauthorised stormwater discharges from reaching the Mangaone Stream.

5.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 19.

Table 19 Summary of performance for Downer EDI consent 3917-3

To discharge treated stormwater and minor amounts of treated air scrubber wastewater from an asphalt manufacturing plant onto land and into the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practical option	Inspection	No Outstanding abatement notice
2. Limit on catchment size	Inspection	Yes
3. Limits on contaminants in discharge	Sampling	No Suspended solids exceeded limits
4. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes
5. Maintain and adhere to a stormwater management plan	Inspection and programme supervision	Yes
6. Maintain and adhere to a spill contingency plan	Inspection and programme supervision	Yes
7. Notify the Council of changes at site	No notification received	N/A
8. Provision for review of consent	Next opportunity for review June 2026	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		Improvement required High
Overall assessment of administrative performance in respect of this consent		

N/A not applicable

During the period under review, Downer EDI Works Ltd demonstrated a level of environmental performance that requires improvement and high level of administrative performance and compliance with their resource consent and RFWP as defined in Appendix II. However, the continued incidence of suspended solids above the consented threshold and the outstanding Abatement Notice EAC-23612 need to be addressed to avoid further enforcement action.

6 Envirowaste Services Ltd

6.1 Site description

Envirowaste Services Ltd (Envirowaste) operates a material recovery facility (MRF) on Colson Road (Figure 8). The site receives and separates recyclable material sourced from district council kerbside collections and transfer stations for the entire Taranaki region.

Stormwater from the site discharges via retention ponds to the Puremu and Mangamiro Streams. Prior to discharge the stormwater is treated in long sediment ponds that discharge via grates to prevent litter being carried with it.



Figure 8 Aerial view of Envirowaste site and sampling locations

Envirowaste holds consent **10109-1** to discharge stormwater from an industrial site into the Puremu Stream and an unnamed tributary of the Mangaone Stream. It has nine of the standardised special conditions as set out in Section 1.2.

The permit is attached to this report in Appendix I.

6.2 Results

6.2.1 Inspections

Three routine compliance monitoring inspections were conducted at the site during the monitoring period to assess compliance with resource consent conditions. These inspections were conducted on 9 September 2021, 9 February 2022, and 9 May 2022.

In general, the inspections found the site to be clean and tidy with no stormwater discharge occurring to the Puremu or Mangamiro streams. At times, it was noted that windblown rubbish needed to be removed from the east side swale or from the bank of the Mangamiro Stream. Earthworks, which were part of the

construction of the new transfer station, were visible at the back of the site on each inspection. The site was compliant at the time of each inspection.

6.2.2 Results of discharge monitoring

Monitoring of discharges from the Envirowaste site takes place at two points. Stormwater discharging to the Puremu Stream is sampled at STW002091 whilst stormwater discharging to the Mangamiro Stream is sampled at STW002092 (Figure 8). The results of the discharge sampling are given in Table 20 and Table 21.

Table 20 Envirowaste stormwater sampling results, site STW002091

Parameter	Temperature	pH	Conductivity	Suspended Solids	Turbidity	Nutrients	
						NH ₃	NH ₄
Unit	°C	pH	mS/m	g/m ³	FNU	g/m ³	g/m ³
20 May 2022	13.2	7.6	8.2	32	33	< 0.00009	< 0.010
Consent limits	-	6-9	-	100	-	-	-

Table 21 Envirowaste stormwater sampling results, site STW002092

Parameter	Temperature	pH	Conductivity	Suspended Solids	Turbidity	Nutrients	
						NH ₃	NH ₄
Unit	°C	pH	mS/m	g/m ³	FNU	g/m ³	g/m ³
20 May 2022	15.0	7.0	17.5	<3	5.1	< 0.00003	< 0.010
Consent limits	-	6-9	-	100	-	-	-

All results were found to be compliant with consent conditions, and within historical ranges for both sites.

Receiving water results indicate no adverse effects were occurring in the Mangamiro or Mangaone Streams during the times Envirowaste was discharging stormwater (see section 15.1.2).

6.3 Investigations, interventions, and incidents

In the 2021-2022 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Envirowaste's conditions in resource consents or provisions in Regional Plans.

6.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 22.

Table 22 Summary of performance for Envirowaste consent 10109-1

Purpose: To discharge stormwater from an industrial site into the Puremu Stream and an unnamed tributary of the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practical option	Inspection	Yes
2. Limit on catchment size	Inspection	Yes

Purpose: To discharge stormwater from an industrial site into the Puremu Stream and an unnamed tributary of the Mangaone Stream

Condition requirement	Means of monitoring during period under review	Compliance achieved?
3. Limits on contaminants in discharge	Sampling	Yes
4. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes
5. Maintain and adhere to a stormwater management plan	Plan provided July 2019	Yes
6. Maintain and adhere to a spill contingency plan	Plan provided July 2018	Yes
7. Notify the Council of changes at site	No notification received	N/A
8. Lapse condition	Consent exercised	N/A
9. Provision for review of consent	Next opportunity for review June 2026	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

During the year, Envirowaste Services Ltd demonstrated a high level of environmental and administrative performance with their resource consent as defined in Appendix II.

7 Firth Industries Ltd (division of Fletcher Concrete & Infrastructure Ltd)

7.1 Site description

Firth Industries Ltd (Firth) operates a concrete batching plant on a 1.19 ha site off Clemow Road, on the true left bank of the Waiwhakaiho River (Figure 9). The plant is situated partly on the flood plain and partly above the escarpment formed by the river. A concrete precast factory operated by Ultimate Engineered Concrete Ltd was previously located on the site, but has since relocated to De Havilland Drive. The precast factory was located on the escarpment above the main site and included a bedding plant that is no longer operational. The stormwater drainage system for this site is still in place.

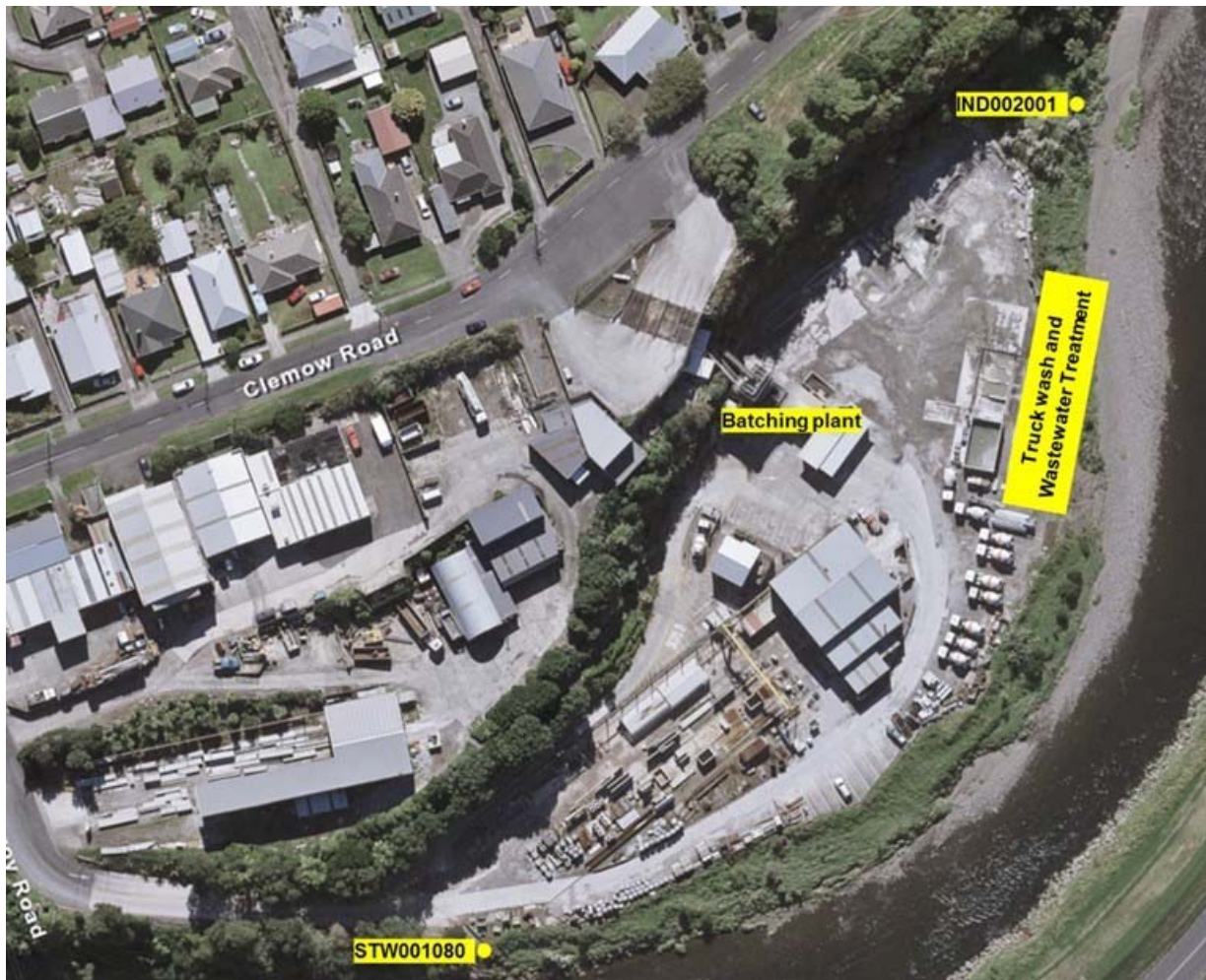


Figure 9 Aerial view of Firth site and sampling locations

Stormwater from the lower part of the site is processed by a purpose-built Siltbuster Ltd stormwater treatment system, before discharging to the Waiwhakaiho River via an old watercourse. This system was installed and began operating in September 2020. Prior to this, stormwater was treated in a four-pond settling system before being pumped to the river. Wastewater from the washing of plant and concrete delivery trucks is discharged to separate wastewater treatment system which treats and recycles the wastewater.

Stormwater from the upper part of the site, where the bedding plant is situated, discharges via two small settling pits to the Waiwhakaiho River at a separate point.

A range of chemicals used in the ready-mix and precast operations are held in the catchment of the main settling system. On the whole, they are either stored indoors or within bunded areas.

Off-specification and surplus concrete, and solids from the settling ponds are deposited along the riverbank. This forms part of the flood protection works for the site. Excess solids are removed from the site periodically.

Firth holds consent **0392-4** to discharge stormwater and treated wastewater into the Waiwhakaiho River. This consent contains the nine standardised special conditions as set out in Section 1.2. It also has one additional condition requiring stormwater and wastewater separation by a certain date.

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

7.2 Results

7.2.1 Inspections

Four routine compliance monitoring inspections were conducted at the site during the monitoring period to assess compliance with resource consent conditions. These inspections were conducted on 17 August 2021, and 9 February, 22 April and 20 May 2022.

All inspections found the site to be clean and tidy with no evidence of spills and no discharge of dust off site. Concrete batching did not take place at the site during April and May's inspections. And although the truck was still in use, the water was recycled on site. Stormwater continues to be successfully treated in settling ponds and silt buster. Visual inspections of the discharge to the Waiwhakaiho River found the discharge was turbid on occasion, but not assessed as having an effect on the receiving water.

7.2.2 Results of discharge monitoring

Runoff from Firth's site is monitored where it enters the Waiwhakaiho River below the former settling ponds and new treatment system (site IND002001). This also includes stormwater runoff from the adjacent property (which is not owned by Firth, but is within the area covered by their resource consent). Discharges from the settling pond at the bedding plant, located above the main plant, are sampled from a flume at the main entrance to the lower yard (STW001080).

Consent conditions require that the discharges do not exceed 15 g/m³ oil and grease or 100 g/m³ suspended solids. Consent conditions also require that discharges do not cause a pH of below 6.0 or above 9.0 and/or an increase of pH of more than 0.5 in the Waiwhakaiho River.

The results for the stormwater drain and the flume discharge are given in Table 23 and Table 24 respectively. The results of monitoring the receiving waters below the site are reported in Section 15.

Table 23 Firth stormwater sampling results, site IND002001

Parameter	Temperature	pH	Conductivity	Suspended Solids	Turbidity
Unit	°C	pH	mS/m	g/m ³	FNU
17 Aug 2021	14	7.3	28.9	<3	1.06
20 May 2022	14.5	10.4	23	134	121
<i>Consent limits</i>	-	6-9	-	100	-

The pH level and concentration of suspended solids in the stormwater drain sample taken on 20 May 2022 exceeded the consented limits. However, no further enforcement action was undertaken as the discharge

was not entering the Waiwhakaiho River. However it should be noted this site has a history of consent breaches due to high levels suspended solids during stormwater discharges.

Table 24 Firth stormwater sampling results, site STW001080

Parameter	Temp	pH	Condy	Suspended Solids	Turbidity	CBOD	DRP	Metals (dissolved)	
								Copper	Zinc
Unit	°C	pH	mS/m	g/m ³	FNU	g/m ³	g/m ³	g/m ³	g/m ³
17 Aug 2021	14	6.8	22.9	25	14.4	-	-	-	-
20 May 2022	13.4	7.3	14.1	7	8.7	< 1.0	0.111	0.0035	0.21
Consent limits	-	6-9	-	100	-	-	-	-	-

All results for the flume discharge were within consented limits and historical averages for the site. The upper site that drains to the flume is now inactive and discharges clear stormwater only. However, there is potential for historical contaminants to be re-mobilised from the yard area.

7.3 Investigations, interventions, and incidents

In the 2021-2022 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Firth's conditions in resource consents or provisions in Regional Plans.

7.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 25.

Table 25 Summary of performance for Firth consent 0392-4

Purpose: To discharge stormwater and treated wastewater into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practical option	Inspection and programme supervision	Yes
2. Stormwater catchment not to exceed 1.618 ha	Inspection	Yes
3. Stormwater treatment system to be used	Inspection	Yes
4. Limits on contaminants in discharge	Sampling	No One exceedance of suspended solids and pH
5. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes
6. Maintain and adhere to a contingency plan	Inspection and programme supervision	Yes
7. Maintain and adhere to a Management Plan	Updated plan received November 2020	Yes

Purpose: <i>To discharge stormwater and treated wastewater into the Waiwhakaiho River</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
8. Undertake improvements as set out in the management plan by 22 February 2016	Inspection	Plant completed
9. Notify Council of any changes at the site	Inspection and liaison with consent holder	Yes
10. Review condition	Next opportunity for review June 2026	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		Good High
Overall assessment of administrative performance in respect of this consent		

N/A not applicable

During the period under review, Firth Industries Ltd demonstrated a good level of environmental and high level of administrative performance and compliance with their resource consent and RFWP as defined in Appendix II. However, the continued incidence of suspended solids above the consented threshold needs to be addressed to avoid further enforcement action.

8 Freight and Bulk Transport Holdings Ltd

8.1 Site description

Freight and Bulk Transport Holdings Ltd (FBT) operate a truck depot that services the rural sector from a 1.77 ha site on Katere Road (Figure 10).

This site was previously monitored under the annual inspection round of truck washes, and was incorporated into the Lower Waiwhakaiho Catchment Monitoring Programme at the start of the 2009-2010 year.



Figure 10 Aerial view of FBT site

FBT stores, blends and distributes dry stock feeds such as crushed meal, palm kernel and grains. Lime, fertiliser and gravel used for farm races are also stored at the site. The lime, stock feeds and fertilisers are stored in the sheds at the northern end of the site; only the gravel is stored outside in the stormwater catchment. Trucks are washed at the site and the wash water was historically (until expiry of consent 0241) discharged to soak holes. During the 2018-2019 monitoring period a truck wash was installed that recycles wash water and discharges contaminants to trade waste (Photo 2).

FBT holds consent **10008-1** to discharge stormwater onto and into land and into the Mangaone Stream. This consent contains nine standard special conditions set out in Section 1.2.

A copy of the consent is attached to this report in Appendix I.



Photo 2 FBT truck wash discharge to trade waste

8.2 Results

8.2.1 Inspections

Three routine compliance monitoring inspections were conducted at the site during the monitoring period to assess compliance with resource consent conditions. These inspections were conducted on 8 September 2021, 8 February 2022, and 22 April 2022.

In general, inspections found the site to be reasonably clean and tidy with no evidence of spills or dust discharge offsite. Often the stormwater drain was not discharging when inspections were conducted. It was noted that some areas of the yard, and the roadside gutter by the site entry, needed to be swept to remove debris and spilt product (potentially lime). The site was compliant at the time of each inspection.

8.2.2 Results of discharge monitoring

Stormwater discharges from FBT's site are collected from a roadside stormwater drain located on the western driveway (site STW001146). This site was sampled on two occasions during the period under review. The results are given in Table 26. The results of all parameters were compliant with consent conditions.

Table 26 FBT stormwater sampling results, site STW001146

Parameter	Temp	pH	Conductivity	Suspended Solids	Turbidity	CBOD	TBOD	Nutrients		
								NH ₃	NH ₄	DRP
Unit	°C	pH	mS/m	g/m ³	NTU	g O ₂ /m ³	g O ₂ /m ³	g/m ³	g/m ³	g/m ³
8 Sept 2021	11.3	7.4	15.9	22	-	4.3	5.5	0.021	3.3	0.46
20 May 2022	13.9	7.5	14.9	42	26	8.7	-	0.0159	2.1	0.79
Consent limits	-	6-9	-	100	-	15	-	0.025*	-	-

*NH₃ limits apply to receiving waters downstream of the discharge

8.3 Investigations, interventions, and incidents

In the 2021-2022 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with FBT's conditions in resource consents or provisions in Regional Plans.

8.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 27.

Table 27 Summary of performance for Freight and Bulk Transport Holdings Ltd consent 10008-1

Purpose: To discharge stormwater onto and into land and into the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practical option	Inspection and programme supervision	Yes
2. Stormwater catchment not to exceed 1.77 ha	Inspection	Yes
3. Limits on contaminants in discharge	Sampling	Yes
4. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes
5. Maintain and adhere to a contingency plan	Inspection and programme supervision	Yes
6. Maintain and adhere to a stormwater plan	Updated plan provided May 2019	Yes
7. Notify the Council of changes at the site	Inspection and programme supervision	N/A
8. Lapse condition	Consent exercised	N/A
9. Review condition	Option for review in June 2026	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

During the period under review, Freight and Bulk Transport Holdings Ltd demonstrated a high level of environmental and administrative performance and compliance with their resource consent as defined in Appendix II.

9 KiwiRail Holdings Ltd/ New Zealand Railways Corporation (KiwiRail)

9.1 Site description

New Zealand Railways Corporation/KiwiRail Holdings Ltd (KiwiRail) own a rail terminal on a site off Smart Road (Figure 11). In addition to transportation of freight, the terminal is utilised as a maintenance depot. The freight receipt and dispatch area and the refuelling and maintenance depots are situated at the Smart Road end of the site.

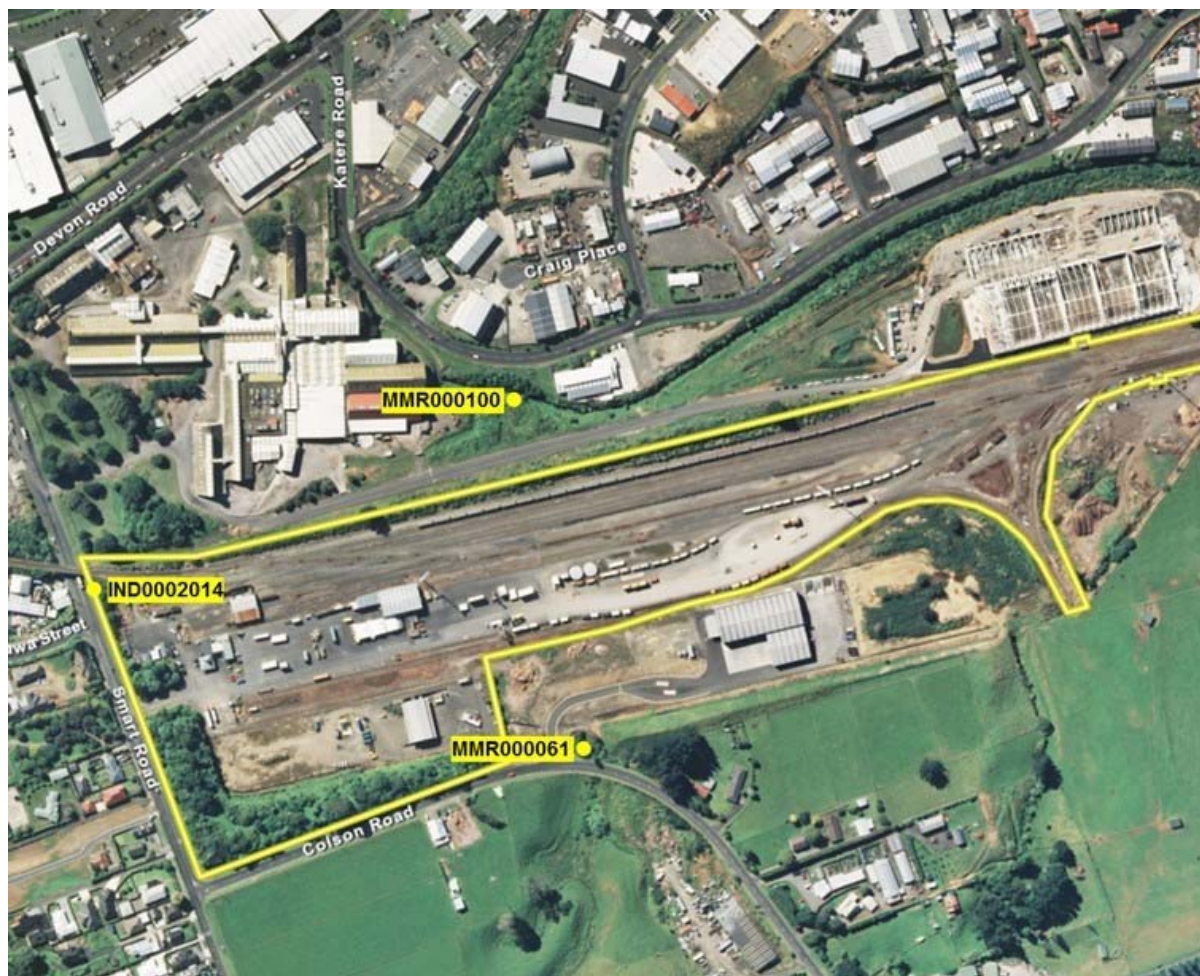


Figure 11 Aerial view of KiwiRail site and sampling locations

Drainage from the area to the west and north of the offices (the refuelling and maintenance areas) flows to the Waiwhakaiho River via McLeod's Drain, an underground pipe that also receives stormwater from Devon 662's former fertiliser depot, other industrial sites, a residential area, and a rural area. Wastewater from washing of wagons, containers and locomotives is treated in a three-stage oil separator before discharge to the river. Liquids from the repair depot and locomotive fuelling point are discharged to an underground holding tank that is emptied by a waste disposal company at two-monthly intervals. The holding tank is also connected to the oil separator via an automatic pump in case of overfilling.

Drainage from the (sealed) freight area and the unsealed areas of the eastern end of the site is to the Mangaone Stream and its tributaries.

Railway wagons carrying containers of hazardous substances and the bulk products including urea, resins, fertilisers, di-ammonium phosphate (DAP), lime, oils, bitumen and carbon dioxide are held temporarily on

the tracks in this area. No loading or unloading of freight takes place in the stormwater catchment that drains to the Mangaone Stream.

KiwiRail hold two consents for the Smart Road railway yard. One consent relates to the discharge of treated wastewater and stormwater to the Waiwhakaiho River which is held by KiwiRail Holdings Ltd, and the other is to discharge of stormwater to the Mangaone Stream which is held by New Zealand Rail Corporation.

KiwiRail holds consent **3528-3** to discharge stormwater into the Waiwhakaiho River. This consent contains the standardised conditions as set out in Section 1.2 as well as limits of 3 g/m³ ammoniacal nitrogen (NH₄) and 1 g/m³ dissolved reactive phosphorus (DRP).

KiwiRail (trading as NZRC) holds consent **1735-3** to discharge stormwater from the Smart Road Rail Terminal into an unnamed tributary of the Mangaone Stream, and into the Mangaone Stream in the Waiwhakaiho catchment. The unnamed tributary of the Mangaone is informally referred to as the Mangamiro Stream. This consent contains the standardised special conditions as set out in Section 1.2.

9.2 Results

9.2.1 Inspections

Three routine compliance monitoring inspections were conducted at the site during the monitoring period to assess compliance with resource consent conditions. These inspections were conducted on 12 August 2021, 9 February 2022, and 9 May 2022.

The inspection on 12 August 2021 assessed compliance with Abatement Notice EAC-24090 and EAC-24135 (Resource Consent 1735-3). The consent holder had made good progress on addressing concerns outlined in the abatement notices, and the date to comply with the notices was extended until 31 December 2021. All inspections generally found the site to be reasonably clean and tidy, with no evidence of spills and no dust discharging off site. Visual inspection of the piped Mangamiro Stream found that the water was running clear. The interceptor, sumps and drain socks were well maintained, while the recommendation to sweep the yard on a quarterly basis had been implemented.

9.2.2 Results of discharge monitoring

The discharge of stormwater from the freight and fuel handling and storage areas is monitored where the stormwater enters the Smart Road stormwater drain, south of the railway overbridge (site IND002014). The results for period under review are given in Table 28.

Table 28 KiwiRail stormwater sampling results, site IND002014

Parameter	Unit	13 August 2021	20 May 2022	Consent limits
Temperature	°C	13.6	15.3	-
pH	pH	6.7	7.1	6-9
Conductivity	mS/m	16.2	16.6	-
Suspended solids	g/m ³	19	17	100
Turbidity	NTU/FNU	16.3	20	-
TBOD	g O ₂ /m ³	1.0	2.8	-
Total hydrocarbons	g/m ³	< 0.7	-	15*
Nutrients				
NH ₃	g/m ³	0.000057	0.00045	-
NH ₄	g/m ³	0.041	0.116	3

Parameter	Unit	13 August 2021	20 May 2022	Consent limits
DRP	g/m ³	0.047	0.045	1

**Hydrocarbons measured in place of oil & grease*

Compliance with consent limits was achieved for all parameters during the period under review.

9.2.3 Results of surface water monitoring

Sampling of the site discharge from the eastern end into the Mangaone Stream is carried out via the Mangamiro Stream, which is culverted for the entire stretch flowing beneath the yard. There are multiple KiwiRail discharges that enter the Mangamiro Stream along this stretch, so it is inferred that any changes in the quality of the stream, where it exits the culvert and enters the Mangaone Stream, were considered to be the effect of activities onsite.

One survey of the surface waters in the Mangamiro Stream was conducted for the period under review, and the results of this monitoring are reported in Table 29.

Table 29 Mangamiro Stream surface water sampling results, 20 May 2022

Site		MMR000061	MMR000100	Consent limits
Parameter	Description	Upstream of yard	Below yard discharge	
Temperature	°C	14.7	14.1	-
pH	pH	7.0	7.2	6-9
Conductivity	mS/m	18.6	15.6	-
Suspended solids	g/m ³	9	42	100
Turbidity	FNU	7.4	27	-
CBOD	g O ₂ /m ³	< 1.0	-	-
Metals (dissolved)				
Copper	g/m ³	0.0007	-	-
Zinc	g/m ³	0.0022	-	-
Nutrients				
NH ₃	g/m ³	0.00046	0.00039	-
NH ₄	g/m ³	0.175	0.105	-
DRP	g/m ³	< 0.004	0.004	-

Compliance with consent limits was achieved for all parameters during the period under review.

9.3 Investigations, interventions, and incidents

In the 2021-2022 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with KiwiRail's conditions in resource consents or provisions in Regional Plans.

9.4 Evaluation of performance

A tabular summary of the KiwiRail's compliance record for the period under review is set out in Table 30 and Table 31.

Table 30 Summary of performance for KiwiRail consent 1735-3

Purpose: To discharge stormwater into the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to prevent or minimise adverse effects	Inspection and receiving water monitoring	Yes
2. Limits stormwater catchment to 11.28 ha	Inspection	Yes
3. Bunding of hazardous substances if on site for more than three days	Inspection	N/A
4. Concentration limits upon potential contaminants in discharge	By inference from chemical sampling of receiving water	Yes
5. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes
6. Prepare and maintain contingency plan	Review of documentation received	Yes
7. Prepare, maintain and adhere to management plan	Inspections	Yes
8. Provision for lapsing of consent	Consent exercised	N/A
9. Provision for review of conditions	No further provision for review prior to expiry	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 31 Summary of performance for KiwiRail consent 3528-3

Purpose: To discharge of stormwater into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practical option	Inspection	Yes
2. Size of catchment area	Inspection	Yes
3. Contaminant limits in discharge	Sampling	Yes
4. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes

Purpose: <i>To discharge of stormwater into the Waiwhakaiho River</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
5. Contingency planning	Plan received	Yes
6. Adhere to Stormwater management plan	Plan received	Yes
7. Notification of changes in site processes	No changes made	N/A
8. Review condition	No further provision for review prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High High
Overall assessment of administrative performance in respect of this consent		

N/A not applicable

During the period under review, KiwiRail Holdings Ltd/New Zealand Railways Corporation Ltd demonstrated a high level of environmental and administrative performance and compliance with their resource consent as defined in Appendix II.

10 New Plymouth District Council

10.1 Site description

New Plymouth District Council (NPDC) holds two resource consents in relation to discharges to the Lower Waiwhakaiho River below State Highway 3, and one consent in relation to discharges to the Mangaone Stream. The results for the stormwater and leachate discharge monitoring are reported on separately.

It has been acknowledged that NPDC has no direct control over the quality of discharges from sites in the catchment. However, road run-off and surface flooding due to poorly maintained drains may contribute to the contamination of stormwater entering the Waiwhakaiho River and Mangaone Stream.

All stormwater screen inlets and outlets in the system are inspected and cleaned regularly by NPDC to ensure that debris is not accumulated in any way that may affect the network capacity. Outfalls with flap gates are serviced every two months. These inspections are usually undertaken following a heavy rainfall event.

During periods of high rainfall, one of the key features of the performance of the stormwater drainage system is its susceptibility to inlet and outlet blockages. The NPDC maintenance plan aims to reduce reactive maintenance and improve the operation and reliability of the system through preventative maintenance. This includes pipeline condition assessment using video inspection.

10.1.1 Water discharge permits

Waiwhakaiho River

NPDC holds consent **5163-2** to discharge stormwater from the Waiwhakaiho industrial area into the Waiwhakaiho River via multiple outfalls between State Highway 3 and the confluence with the Mangaone Stream.

The catchment area and location of stormwater and landfill leachate discharge points are shown in Figure 12.

Conditions on the consent require the consent holder to adopt the best practicable option to prevent or minimise any adverse effects, address erosion, and prohibit some specific effects.

Mangaone Stream

NPDC holds consent **1275-3** to discharge stormwater from the Katere and Waiwhakaiho industrial areas into the Mangaone Stream via multiple outfalls between Egmont Road and the confluence with the Waiwhakaiho River.

The catchment area and location of stormwater and landfill leachate discharge points are shown in Figure 13.

Conditions on the consent require the consent holder to adopt the best practicable option to prevent or minimise any adverse effects, address erosion, and prohibit some specific effects.



Figure 12 Aerial view of NPDC stormwater and leachate discharge locations in the Waiwhakaiho Catchment



Figure 13 Aerial view of NPDC stormwater discharges to the Mangaone Stream

10.1.2 Bewley Road closed landfill

The old Taranaki County Council (TCC) depot site was quarried at the end of its life, and was then infilled, becoming the Bewley Road landfill. The former Bewley Road landfill extended for about 740 m along the Waiwhakaiho River bank between Constance Street and Vickers Road, and back to Devon Road. In 2006 the closed landfill area was developed and is now the site of the Valley Mega Centre retail outlet and car park. Leachate from the site discharges to groundwater which seeps into both the stormwater network, and the Waiwhakaiho River, along the river bank between Constance Street and Vickers Road. There is no treatment of the leachate generated from this closed landfill. Leachate is discharged continuously to the river at very low levels and low volumes.

NPDC holds consent **4984-2** to discharge landfill leachate to groundwater and the Waiwhakaiho River from an industrial development off Bewley Road.

The consent has conditions that set limits for contaminant concentrations in the discharge, limit effects on receiving water, require the maintenance of monitoring bores, and provide for the review. The results of compliance monitoring for consent **4984-2** are detailed in Section 10.2.3 and 10.2.4.

Copies of all NPDC permits are attached to this report in Appendix I.

10.2 Results

10.2.1 Inspections

Five routine compliance monitoring inspections were conducted during the monitoring period to assess the compliance of NPDC's stormwater and landfill leachate discharges with their respective resource consent conditions. These inspections were conducted on 13 August and 16 August 2021, and 10 February, 9 May and 23 May 2022.

In general, visual inspections of discharge points and receiving waters found that most discharge points only contained a small volume of clear discharge with no sheen present in the discharge or receiving waters. No issues were noted on any of the inspections.

10.2.2 Results of discharge monitoring

Discharge monitoring is carried out at six public stormwater drain outlets, three of which also discharge wastewater or stormwater from consented industrial sites. These are McLeod's Drain at the bottom of Smart Road, the "mid Katere Road" storm drain to the Mangaone Stream and the storm drain to the Mangaone Stream that services the Hurlstone Drive area.

No contaminant concentration limits have been incorporated into the NPDC consents as it is acknowledged that, for the most part, the District Council has no direct control over the quality of the discharges from the industrial and commercial sites. However, the quality of the discharges are still required to meet requirement of the RFWP permitted activity rules for stormwater discharge to water. Therefore, discharges are monitored, as road run-off and surface flooding due to poorly maintained drains may contribute to the contamination of stormwater entering the receiving waters.

10.2.2.1 Discharge to Waiwhakaiho River from Burton Street

The sampling site that monitors the discharge of stormwater from the Burton Street area as it enters the Waiwhakaiho River was introduced during the 1999-2000 monitoring period. The drain carries stormwater from a number of small commercial sites that are located along Burton Street. The discharge is monitored to determine influences on water quality occurring upstream of other larger discharge sources (such as Firth's or McLeod's Drain).

The results of routine chemical monitoring for the period under review are presented in Table 32.

Table 32 Stormwater sampling results for Burton Street, site STW001081

Parameter	Unit	13 Aug 2021	20 May 2022	RFWP Guideline
Temperature	°C	13.5	12.7	-
pH	pH	6.6	6.8	6-9
Conductivity	mS/m	6.2	8.5	-
Suspended solids	g/m ³	3	8	100
Turbidity	NTU/FNU	2.5	7	-
Hydrocarbons	g/m ³	< 0.7	< 0.7	15*

**Hydrocarbons measured in place of oil & grease*

The pH, suspended solids, and oil and grease concentrations were determined to be within the standards expected for permitted activities within this stormwater catchment.

10.2.2.2 Discharge to Waiwhakaiho River from McLeod's Drain

The discharge from McLeod's Drain enters the Waiwhakaiho River about 50 m downstream of the lower end of Smart Road. The drain carries stormwater from the Devon 662 site, other industrial sites including the railyard on Smart Road, the residential area of Glen Avon, and a rural area to the south. The discharge is monitored to determine influences on water quality in addition to those of the former fertiliser storage depot and railyard.

Although Devon 662's former fertiliser depot is no longer in use, there is likely to still be some inputs of phosphorus and ammonia due to dissolution of existing fertiliser particles carried by wind or water into storm drains at and around the site. The results of routine chemical monitoring for the period under review are presented in Table 33.

Table 33 Stormwater sampling results for McLeod's Drain, site STW001001

Parameter	Unit	16 Aug 2021	23 Sep 2021	20 May 2022	RFWP Guideline
Temperature	°C	15.5	15.1	13.5	-
pH	pH	7.7	6.5	7.7	6-9
Conductivity	mS/m	48.3	47.8	31.7	-
Suspended solids	g/m ³	< 3	39	196	100
Turbidity	NTU/FNU	4.5	35	138	-
Hydrocarbons	g/m ³	< 0.7	< 0.7	< 0.7	15*
Nutrients					
NH ₃	g/m ³	0.143	0.0064	0.0137	0.025
NH ₄	g/m ³	9.2	6.5	1.2	-
DRP	g/m ³	< 0.004	< 0.004	0.05	

**Hydrocarbons measured in place of oil & grease*

The pH, unionised ammonia (NH₃), and hydrocarbon concentrations were all determined to be well within the standards expected for a permitted activity and within the prescribed "standardised" limits for the consent holders contributing to this discharge. Suspended solids were recorded above RFWP limits for a

permitted stormwater discharge under Rule 23 on one occasion on 20 May 2022. However, this sample was collected during wet weather conditions.

10.2.2.3 Discharge to Waiwhakaiho River from Vickers Road

This catchment drains the area on both sides of Vickers Road along with a section of Devon Road, to the west of the Katere Road junction. The results for the period under review are given in Table 34.

Table 34 Stormwater sampling results for Vickers Road, site STW001020

Parameter	Unit	10 Feb 2022	20 May 2022	RFWP Guideline
Temperature	°C	22.5	14.1	-
pH	pH	7.5	7.1	6-9
Conductivity	mS/m	19.3	11.7	-
Suspended solids	g/m ³	4	17	100
Turbidity	NTU/FNU	8.8	26	-
Hydrocarbons	g/m ³	< 0.7	< 0.7	15*

**Hydrocarbons measured in place of oil & grease*

Sampling showed that the suspended solids, pH, and hydrocarbon concentrations were within the standards expected for the permitted activities within this stormwater catchment on all monitoring occasions.

10.2.2.4 Discharge to Mangaone Stream from mid Katere Road

Stormwater from the mid-section of Katere Road discharges to the Mangaone Stream upstream of the discharge from Taranaki Sawmill's timber treatment plant site, and carries stormwater from a number of permitted activities on the northern side of Katere Road, and from the Freight and Bulk Transport site.

Monitoring of this discharge commenced in 2007. The results for the period under review are presented in Table 35.

Table 35 Stormwater sampling results for mid Katere Road, site STW001116

Parameter	Unit	13 Aug 2021	20 May 2022	RFWP Guideline
Temperature	°C	13.0	14.3	-
pH	pH	6.6	7.3	6-9
Conductivity	mS/m	10.6	11.4	-
Suspended solids	g/m ³	23	27	100
Turbidity	NTU/FNU	10.2	16.5	-
TBOD	g O ₂ /m ³	3.9	5	5
Hydrocarbons	g/m ³	< 0.7	< 4	15*
Nutrients				
NH ₃	g/m ³	0.00092	0.0049	0.025
NH ₄	g/m ³	0.86	0.91	-
DRP	g/m ³	0.134	0.32	-

**Hydrocarbons measured in place of oil & grease*

The consent held by NPDC for discharges into the Mangaone Stream has no conditions relating to the quality of the discharge. However, all results for the monitoring period met the RFWP limits for a permitted stormwater discharge to water and were within expected ranges. The detection limit for total hydrocarbons

was higher than usual on the 20 May 2022. The samples were collected during a wet weather event and were slightly turbid at the time of sampling. Turbidity can affect the accuracy at which laboratory tests can detect hydrocarbons in water.

10.2.2.5 Discharge to Mangaone Stream from Hurlstone Drive

Stormwater from the industrial area along Hurlstone Drive discharges to the Mangaone Stream immediately upstream of State Highway 3. This discharge contains stormwater and wastewater from Allied Concrete's batching plant as well as roadside runoff.

The results of routine chemical monitoring for the period under review are presented in Table 36.

Table 36 Stormwater sampling results for Hurlstone Drive, site STW001035

Parameter	Unit	13 Aug 2021	20 May 2022	RFWP Guideline
Temperature	°C	13.5	15.0	-
pH	pH	7.3	7.4	6-9
Conductivity	mS/m	15.1	34.5	-
Suspended solids	g/m ³	9	24	100
Turbidity	NTU/FNU	3.5	22	-
Hydrocarbons	g/m ³	< 0.7	< 0.7	15*
Nutrients				
NH ₃	g/m ³	< 0.00007	0.00027	0.025
NH ₄	g/m ³	< 0.01	0.042	-

*Hydrocarbons measured in place of oil & grease

The pH, suspended solids, and hydrocarbon concentrations complied with standards expected for a permitted activity, and were within the prescribed limits for consent holders discharging via this outlet.

10.2.3 Results of groundwater monitoring

There are three groundwater bores located around the periphery of the area, which NPDC is required to maintain for the purpose of consent compliance monitoring with consent **4984-2** to discharge landfill leachate to groundwater. There is also a leachate discharge monitoring point at the outlet of the main drain which carries the groundwater to the river. The locations of the four sites are shown on Figure 2 as GND0548, GND0555, GND0556, and WKH000872. Stormwater from the retail area between Struthers Place and Constance Street, the commercial area of Struthers Place, and part of Rifle Range Road and a small unnamed tributary that once discharged at this location are also piped to the Waiwhakaiho via this leachate discharge point.

10.2.3.1 Bore GND0556

Groundwater monitoring bore GND0556 is drilled into natural alluvial deposits beside Devon Road and acts as a control bore for the area. This bore was affected by the raising of the ground surface around it by approximately 0.5 m which may affect the chemical results. The results for this site are shown in Table 37.

Table 37 NPDC groundwater sampling results, site GND0556

Parameter	Unit	17 Mar 2022	21 Jun 2022	Consent limits
Level	m	2.197	1.989	-
Temperature	°C	21.2	18.0	-
pH	pH	6.3	6.0	6.5-8.5

Parameter	Unit	17 Mar 2022	21 Jun 2022	Consent limits
Conductivity	mS/m	143.3	127.0	-
DO	mg/L	0.03	0.06	-
	%	0.4	0.7	-
Alkalinity (as CaCO ₃)	g/m ³ as CaCO ₃	86	47	-
Bicarbonate	g/m ³	105	57	-
COD	g O ₂ /m ³	< 6	< 6	-
Potassium	g/m ³	45	37	-
Zinc	g/m ³	0.0057	0.0159	-
Nutrients				
NH ₃	g/m ³	0.0087	0.00155	-
NH ₄	g/m ³	8.5	3.6	25
NNN	g/m ³	0.004	2.5	-
DRP	g/m ³	0.005	< 0.004	0.065

The levels recorded for each of the parameters analysed were similar to previously observed values. Unionised ammonia and ammoniacal nitrogen continue to be at elevated levels when compared to pre-2017 results. Potassium and sulphate concentrations, which also spiked in 2017, are still at elevated levels compared to pre-2017. The exact cause of increases in these parameters at this bore are not known. However, the bores around the old Ravensdown site (up gradient and to the west) do contain elevated levels of sulphate and ammoniacal nitrogen and are known have some connectivity to the bores in the Bewley Road area. On both sampling occasions, pH was recorded outside of consent limits at 6.3 and 6.0 pH units. The total oxidised nitrogen concentration recorded in June 2022 was uncharacteristically high, setting a new maximum for the parameter at this site.

10.2.3.2 Bore GND0555

Groundwater monitoring bore GND0555 is on Rifle Range Road between Struthers Place and Vickers Road. This bore was affected by stop-bank construction in a previous review period and had to be re-drilled as a result. During the 2001-2002 monitoring period it was found that this bore had collapsed internally and NPDC was requested to clear the bore or re-drill as necessary. The bore was subsequently re-drilled (prior to the sampling run undertaken in June 2002) and a bore log was provided to the Council. During the 2007-2008 monitoring period the bore was again destroyed by development activities in the area. NPDC replaced the bore at the request of the Council. The number of times this bore has been re-drilled needs to be considered in interpreting the results and in particular median values for parameters. The results for GND0555 are shown in Table 38.

Table 38 NPDC groundwater sampling results, site GND0555

Parameter	Unit	17 Mar 2022	21 Jun 2022	Consent limits
Level	m	2.77	2.55	-
Temperature	°C	20.0	16.1	-
pH	pH	6.5	6.8	6.5-8.5
Conductivity	mS/m	54.1	48.2	-
DO	mg/L	0.53	1.01	-
	%	5.8	11.3	-
Alkalinity (as CaCO ₃)	g/m ³ as CaCO ₃	220	220	-
Bicarbonate	g/m ³	270	260	-

Parameter	Unit	17 Mar 2022	21 Jun 2022	Consent limits
COD	g O ₂ /m ³	9	13	-
Potassium	g/m ³	9.6	8.9	-
Zinc	g/m ³	0.0035	0.0037	-
Sulphate	g/m ³	< 0.5	< 0.5	-
Nutrients				
NH ₃	g/m ³	0.0094	0.0141	-
NH ₄	g/m ³	6.7	5.6	25
NNN	g/m ³	0.014	0.018	-
DRP	g/m ³	< 0.004	< 0.004	0.065

Ammoniacal nitrogen, dissolved reactive phosphorus, and pH complied with all consent limits, and all parameters were either similar to the median of all results and/or were below the maximum.

10.2.3.3 Bore GND0548

Groundwater bore GND0548 is located near the corner of Struthers Place and Rifle Range Road. This is also a replacement bore as the first bore sunk in this area was destroyed during stop-bank construction in 1997. The replacement bore was itself destroyed during landscaping in front of what was then the Hookers site, and a new bore was installed prior to the sampling survey undertaken in October 2002. Care needs to be taken when interpreting the results, and in particular the median values for parameters. The results for GND0548 are shown in Table 39.

Table 39 NPDC groundwater sampling results, site GND0548

Parameter	Unit	17 Mar 2022	21 Jun 2022	Consent limits
Level	m	1.594	1.45	-
Temperature	°C	20.6	17.7	-
pH	pH	6.9	6.9	6.5-8.5
Conductivity	mS/m	67.9	76.5	-
DO	mg/L	0.0	0.03	-
	%	-0.5	0.3	-
Alkalinity (as CaCO ₃)	g/m ³ as CaCO ₃	290	320	-
Bicarbonate	g/m ³	350	390	-
COD	g O ₂ /m ³	10	29	-
Potassium	g/m ³	21	27	-
Zinc	g/m ³	0.0057	0.0012	-
Sulphate	g/m ³	< 0.5	< 0.5	-
Nutrients				
NH ₃	g/m ³	0.028	0.053	-
NH ₄	g/m ³	7.2	16.4	25
NNN	g/m ³	0.015	0.032	-
DRP	g/m ³	< 0.004	0.130	0.065

Consent limits for ammoniacal nitrogen, dissolved reactive phosphorus, and pH were complied with. Unionised ammonia and ammoniacal nitrogen concentrations recorded in June 2022 were new maximums at this site. All other parameters tested had concentrations that were in line with historic results.

Overall, it is noted that elevated levels of potassium and ammoniacal nitrogen continue to be observed in all bores. However, the actual values being recorded either comply with consent conditions (for ammoniacal nitrogen) or are within acceptable ranges.

10.2.4 Results of surface water monitoring

The former Bewley Road landfill is situated on the right bank of the Waiwhakaiho River and extends about 740 m between Constance Street to a point near Vickers Road. The area has been substantially developed and now contains a retail park and a number of commercial operators. Combined discharge from stormwater, and landfill leachate to groundwater from this area enters the Waiwhakaiho River about site WKH000872 (Figure 2).

The Waiwhakaiho River is sampled at three points in relation to the landfill leachate discharge. The first is above the leachate discharge point (WKH000920), the second is adjacent to the discharge (WKH000925), and a third below the mixing zone (WKH000942). The results from these sites are used to assess any potential impacts of the leachate.

The leachate and associated river sites were sampled twice during the period under review, and results are shown in Table 40 and Table 41.

Table 40 NPDC landfill leachate and surface water sampling results, 17 March 2022

Site		WKH000920	WKH000872	WKH000925	WKH000942	<i>Consent limits for discharge</i>
	Description	Upstream	Leachate discharge	Adjacent to leachate discharge	Below mixing zone	
Parameter	Time	14:25	14:45	15:00	15:20	
Temperature	°C	18.2	21.4	18.5	19.0	-
pH	pH	8.3	7.6	8.1	8.4	6.5-8.5
DO	mg/L	9.67	5.85	8.37	8.76	-
	%	102.4	66.3	89.2	95.2	-
Conductivity	mS/m	15.6	122.7	15.1	15.9	-
Sulphate	g/m ³	-	177	-	-	-
Turbidity	NTU	0.69	-	0.57	0.44	-
Total Alkalinity	g/m ³ as CaCO ₃	-	220	-	-	-
COD	g O ₂ /m ³	-	9	-	-	-
Potassium	g/m ³	-	29	-	-	-
Zinc	g/m ³	-	0.0055	-	-	-
Nutrients						
NH ₃	g/m ³	< 0.0008	0.83	0.0013	< 0.0011	-
NH ₄	g/m ³	< 0.010	42	0.025	< 0.010	25
NNN	g/m ³	-	10	-	-	-
DRP	g/m ³	< 0.004	< 0.004	< 0.004	< 0.004	0.065

Table 41 NPDC landfill leachate and surface water sampling results, 21 June 2022

Site		WKH000920	WKH000872	WKH000925	WKH000942	Consent limits
	Description	Upstream	Leachate discharge	Adjacent to leachate discharge	Below mixing zone	
Parameter	Time	12:55	13:15	13:30	13:50	
Temperature	°C	9.8	16.4	9.9	10.2	-
pH	pH	7.7	7.9	7.6	7.5	6.5-8.5
DO	mg/L	12.75	7.73	12.76	12.0	-
	%	119	80	112	108	-
Conductivity	mS/m	10.6	130.3	10.8	10.8	-
Sulphate	g/m ³	-	220	-	-	-
Turbidity	FNU/NTU	0.74	8.0	0.44	1.47	-
Total Alkalinity	g/m ³ as CaCO ₃	-	181	-	-	-
COD	g O ₂ /m ³	-	11	-	-	-
Potassium	g/m ³	-	28	-	-	-
Zinc	g/m ³	-	0.034	-	-	-
Nutrients						
NH ₃	g/m ³	0.00017	1.12	0.00028	0.00011	-
NH ₄	g/m ³	0.017	43	0.030	0.016	25
NNN	g/m ³	-	12.3	-	-	-
DRP	g/m ³	0.008	<0.004	0.008	0.007	0.065

Ammoniacal nitrogen concentrations in the leachate discharge from site WKH000872 exceeded the consent limit of 25 g/m³ in March and June 2022. Unionised ammonia was also above the RFWP limit for permitted effects in receiving waters (0.025 g/m³) at the same site on both sampling occasions. While, ammoniacal nitrogen is dominant component of landfill leachate, it is unknown why ammoniacal nitrogen and unionised ammonia were so high at the time of sampling. Further to this, concentrations of unionised ammonia at WKH000872 appear to be increasing year on year. A similar pattern is noted in levels of ammoniacal nitrogen at the same site and may need exploring further.

Water samples from the downstream sampling point (WKH000942) indicated that unionised ammonia levels were below the RFWP limit for permitted effects in receiving waters (0.025 g/m³ NH₃). And results show only a slight increase ammoniacal nitrogen concentrations between the leachate discharge point and the downstream sample site. Given the extremely low levels found, there is unlikely to be any environmental effects associated with this contaminant concentration. All other results were within consented limits and historical averages for each site.

Disturbance of contaminated soil and removal of hardstand areas had increased infiltration and very likely resulted in down-gradient mobilisation of nitrogen and phosphorus into the Bewley Road area (section 3.2.3) about Devon 662 Ltd.

10.3 Investigations, interventions, and incidents

In the 2021-2022 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with NPDC's conditions in resource consents or provisions in Regional Plans.

10.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 42, Table 43, and Table 44.

Table 42 Summary of performance for NPDC consent 1275-3

Purpose: To discharge stormwater discharge from the Katere Industrial area into the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise adverse effects	Inspection and receiving water monitoring	Yes
2. Prevention of erosion	Visual assessment at inspection and receiving water sampling	Yes
3. Discharge cannot cause specified adverse effects in Mangaone Stream	Inspection and receiving water monitoring	Yes
4. Optional review provision re environmental effects	No further provision for review prior to expiry	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 43 Summary of performance for NPDC consent 5163-2

Purpose: To discharge stormwater discharge from an industrial subdivision into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise adverse effects	Inspection and receiving water monitoring	Yes
2. Prevention of erosion	Visual assessment at inspection and receiving water sampling	Yes
3. Discharge cannot cause specified adverse effects in Mangaone Stream	Inspection and receiving water monitoring	Yes
4. Optional review provision re environmental effects	No further provision for review prior to expiry	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 44 Summary of performance for NPDC consent 4984-2

Purpose: To discharge leachate from a former landfill site into groundwater, adjacent to the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limits on chemical composition of discharge	Inspection and sampling of discharge	No pH below and NH ₄ above consented limits on at GND0556 and WKH000872 respectively
2. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling	Yes
3. Maintenance of monitoring bores	Inspection and accessibility at sampling	Yes
4. Optional review provision re environmental effects	No further provision for review prior to expiry	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

During the period under review, New Plymouth District Council demonstrated a good level of environmental performance and high level of administrative performance and compliance with its resource consents as defined in Appendix II. Further work may be required to understand the chemical fluctuations, and subsequent breaches of consent limits, in leachate discharge to groundwater and surface water in the area.

11 Ravensdown Fertiliser Co-operative Ltd

11.1 Site description

The New Plymouth depot of Ravensdown Fertiliser Co-operative Ltd (Ravensdown) occupies an area of about 8 Ha of land adjacent to the KiwiRail yard (Figure 14). The depot receives, bags, blends and distributes fertilisers in various forms, namely superphosphate, lime, dolomite and imported high analysis products such as ammonium sulphate, urea, triple super, potassium chloride (potash) and monoammonium and diammonium phosphates (MAP & DAP). Small volumes of trace element fertilisers such as zinc sulphate are also handled through the store.

Stormwater from the roof and the area immediately surrounding the main building is directed through a planted wetland prior to discharge to the Mangaone Stream. Stormwater from the upper end entrance road is diverted to setting ponds and discharged to the Mangaone further downstream. Stormwater from the lower part of the access road is diverted to the Waiwhakaiho River via MacLeod's drain on Smart Road.



Figure 14 Aerial view of Ravensdown site (building construction since completed)

Ravensdown holds consent **10513-1** to discharge stormwater from a fertiliser storage site onto and into land and water. This consent contains eight of the nine standard special conditions as set out in Section 1.2. As the activity had already commenced when the consent was granted, the standard lapse condition was omitted.

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

11.2 Results

11.2.1 Inspections

Two routine compliance monitoring inspections were conducted at the site during the monitoring period to assess compliance with resource consent conditions. These inspections were conducted on 7 September 2021 and 9 May 2022.

Both inspections found the site clean and tidy, with no evidence of spills or tracking. However, the inspection in September 2021 observed that a number of IBCs, containing chemicals, were stored outside. The consent holder was reminded that all chemicals needed to be stored in a bunded area. The wetland was discharging on both occasions with the discharge observed as being clear and colourless.

The Council also met with the consent holder on 11 January 2022 discuss factors that were contributing to ongoing non-compliance issues at the site. Subsequently, consent holder submitted to the Council a list of improvements which would make the site compliant with consent conditions.

11.2.2 Results of discharge monitoring

The discharge from the pond that treats stormwater from the roof and operation areas was sampled twice during the monitoring period. Results are displayed in Table 45.

Table 45 Ravensdown stormwater sampling results, site STW002097

Parameter	Unit	8 Sept 2021	20 May 2022	Consent limits
Temperature	°C	12.5	15.4	-
pH	pH	7.5	7.0	6-9
Conductivity	mS/m	22.2	12.5	-
Suspended solids	g/m ³	7	<3	100
Turbidity	FNU	5.4	2.7	-
CBOD	g O ₂ /m ³	4.5	1.2	10
TBOD	g O ₂ /m ³	6.2	1.9	-
Metals (dissolved)				
Copper	g/m ³	-	0.0013	-
Zinc	g/m ³	-	0.0026	-
Nutrients				
NH ₃	g/m ³	0.112	0.0161	0.025*
NH ₄	g/m ³	12.1	5.7	5
NNN	g/m ³	-	0.95	-
DRP	g/m ³	1.83	0.70	5

*NH₃ limit applies in-stream

While most sample results generally complied with limits set by the resource consent on both sampling occasions, levels of ammoniacal nitrogen (NH₄) were above the consented limit of 5 g/m³ on both sampling occasions. And the concentrations of unionised ammonia was above the consent limit of 0.025 g/m³ during September 2021. It should be noted that this concentration of unionised ammonia concentration is present in the discharge and is not an instream value. All other parameters were within range of past results.

The consent holder submitted results of their own sampling of STW002097 on 10 May 2022.

Concentrations for carbonaceous biological oxygen demand, and oil and grease were above their respective

consented limits of 10 g/m³ and 15 g/m³. This resulted in a non-compliance for the site and subsequently, Abatement Notice EAC-24575 as issued (see Section 11.3).

Ravensdown continue to make upgrades to the onsite wetland system to increase nutrient uptake and retention in the pond. During this monitoring period, bull rush was planted to help improve the quality of stormwater discharge. And measures have been taken to prevent Pukeko from de-vegetating the swale area which should also help with water treatment.

11.3 Investigations, interventions, and incidents

Table 46 sets out details of any incidents recorded, additional investigations, or interventions required by the Council in relation to Ravensdown's activities during the 2021-2022 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 46 Ravensdown's incidents, investigations, and interventions summary table

Date	Details	Compliant (Y/N)	Enforcement Action Taken?	Outcome
8 September 2021	Sampling of stormwater retention pond found an unauthorised discharge of contaminated stormwater. Breach of Abatement Notice EAS-22667, issued June 2019.	N	Y	Infringement notice (EAC-24311) issued November 2021.
10 May 2022	Sampling of stormwater retention pond by the consent holder found an unauthorised discharge of contaminated stormwater.	N	Y	Abatement Notice EAC-24575 issued September 2022. Ravensdown is continuing to make improvements resolve non-compliance issues. Abatement Notice extended to 31 December 2022.

11.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 47.

Table 47 Summary of performance for Ravensdown consent 10513-1

Purpose: <i>To discharge stormwater from a fertiliser storage site onto and into land and into the Mangaone Stream</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practicable option to avoid, remedy or mitigate effects	Inspection and consultation with site operators	Yes
2. Catchment to be limited to a certain size	Inspection and consultation with site operators	Yes
3. Limits on chemical composition of discharge	Observation during inspection and discharge sampling	No Levels of NH ₃ and NH ₄ -N in breach of consent conditions
4. Limit on effects in receiving water	Observation during inspection, macroinvertebrate sampling and receiving water sampling	Yes – instream effects may not be directly attributed to Ravensdown site
5. Maintain contingency plan	Document received	Yes
6. Maintain stormwater management plan	Document received	Yes
7. Notification of changes at the site	Inspection and consultation with site operators	Yes
8. Review conditions	Next option for review in June 2026	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		Improvement required High
Overall assessment of administrative performance in respect of this consent		

N/A = not applicable

During the period under review, Ravensdown Fertiliser Co-operative Ltd demonstrated that some improvement is required in the area of environmental performance and compliance. While a high level of administrative performance and compliance was achieved its resource consent as defined in Appendix II.

12 Taranaki Sawmills Ltd

12.1 Site description

Taranaki Sawmills Ltd (TSM) has operated a timber treatment plant on Katere Road since 1956 (Figure 15). In 1997, an adjoining site was purchased and developed for painting and packaging, packaging componentry, and a domestic despatch yard, some of which has now been on-sold. About 30 persons are employed at the site.

Timber is treated at two plants. At one plant, timber is treated with copper, chromium and arsenic (CCA), and with boron. At the other plant, light organic solvent preservatives (LOSP) are used.



Figure 15 Aerial view of Taranaki Sawmills Katere Road site and sampling locations.

At the CCA and boron treatment plant, all chemical storage tanks and treatment vessels were historically situated outside of the buildings, within areas that were sealed and bunded for containment of spillage. Contaminated stormwater from bunded and drip pad areas was collected in sumps and recycled back through the treatment process. The CCA process was changed in February 1999 by the addition of a steam fixation step after CCA treatment, known as the CCA Dry process. This resulted in the elimination of drippage after treatment. Previously, CCA treated timber had to be left on the drip pad for seven days, now the timber only needs to be left on the drip pad for 24 hours to ensure that there is no drippage once the wood is removed from the treatment area. There is no discharge to water as a result of the CCA dry process, as blowdown from this process is recycled. During the 2002-2003 year, a roof was constructed over the drip pad, treatment vessels and chemical storage area, thus eliminating the potential for contaminants to be entrained in the stormwater from these areas.

Some timber is pre-treated by steaming to improve the penetration of the CCA solution. After each steam cycle, the vessel is cooled via an external water heat exchanger to reduce turnaround time. The sludge generated in the steamer vessel, and blowdown from the boiler, was discharged to a settling pit at a rate of about 1,000 L/day. The settled wastewater, and about 15,000 L/day of cooling water, was discharged to the Mangaone Stream via a stormwater drain. Sludge that accumulated in the pit was disposed of by a local contractor. During the 2005-2006 year, the condensate from this "steam cracking" of the timber was diverted to sewer. The discharge of cooling water to the Mangaone Stream continued until the 2008-2009 year, during which the cooling water was also diverted to trade waste. No further discharges of process/wastewater from the site to the Mangaone Stream occur following this diversion.

In boron treatment, a vacuum is applied to improve chemical diffusion. The boron treated timber was left under tarpaulins on the drip pad for 14 days for diffusion to complete. An improvement in the boron treatment process was introduced in March 2007. Taranaki Sawmills now employ a dry treatment process using 'Framepro'. The process for 'Framepro' is that the timber is kiln dried before it is sent to the treatment plant. After treatment it dries in a shed on a drip pad until being shipped out.

A new light organic solvent preservative (LOSP) plant was commissioned in February 1999. The treatment chemicals used in the LOSP process are a range of blends containing one or more of the following, in a white spirit solvent; 3-Iodo-2-propynyl-n-butylcarbamate (IPBC), permethrin, Propiconazole (PRCA) and Tebuconazole (TEBA) depending on end use of the timber. At the old LOSP plant, chemical storage tanks were located outside at the northern end of the site in an area that was bunded. The drippage area, which drained to a recycle sump, was also outside. At the new plant, the process is carried out entirely within a building with internal bunds, under computer control to optimise treatment and minimise chemical use. There is no wastewater discharge.

The use of tributyltin oxide at the site ceased in April 2010. Residual tributyltin and CCA have been found in the site surfaces from historical practices. This has been mapped and managed by progressively concreting the affected areas, as discussed in previous Annual/Biennial Reports.

Uncontaminated stormwater, from outside of bunded areas and from roofs, is channelled into two drains that join prior to exiting the site at Katere Road and discharging to the Mangaone Stream.

TSM holds discharge permit **3491-3** to cover discharge of cooling water and wastewater from a timber drying plant and stormwater from a timber treatment site into the Mangaone Stream in the Waiwhakaiho catchment. This consent has 17 special conditions, including the standardised sampling requirements.

A copy of the permit is attached in Appendix I.

12.2 Results

12.2.1 Inspections

Three routine compliance monitoring inspections were conducted at the site during the monitoring period to assess compliance with resource consent conditions. These inspections were conducted on 8 September 2021, 8 February 2022, and 9 May 2022.

In general, inspections found the site to be clean and tidy with very little offsite odour occurring. It was noted that there was only a small volume of clear discharge occurring to road side drains. Samples were collected during the September 2021 inspection from two designated sampling points on the road side. These samples were slightly turbid as it was raining at the time sampling occurred. There was a paint spill prior to the May 2022 inspections, however, the spill was promptly cleaned up. Drain socks had recently been replaced prior to each inspection.

12.2.2 Results of discharge monitoring

Historically, the primary sampling point for this site was a combined discharge point on the opposite side of Katere Road (site IND001006). However it was identified by the consent holder that this site could potentially be contaminated with stormwater from Katere Road.

Subsequently, two additional sampling sites were established (IND001068 and IND001069) to sample stormwater from TSM at the point of discharge into NPDC's stormwater network. These sites were each sampled twice during the monitoring period with the results presented in Table 48 and Table 49.

Table 48 TSM stormwater sampling results, site IND001068

Parameter	Unit	8 Sep 2021	20 May 2022	Consent limits
Temperature	°C	11.2	12.6	25
pH	pH	6.7	6.7	6-9
Conductivity	mS/m	8.3	6.1	-
Suspended solids	g/m ³	43	9	100
Turbidity	FNU	80	10.5	-
TBOD	g O ₂ /m ³	3.8	2.4	-
COD	g O ₂ /m ³	37	15	-
Metals (total)				
Arsenic	g/m ³	0.062	0.0147	0.24
Boron	g/m ³	0.022	0.023	3.7
Chromium	g/m ³	0.051	0.0079	0.4
Copper	g/m ³	0.036	0.0108	-
Tin	g/m ³	0.0021	0.00101	-
Zinc	g/m ³	0.76	0.65	-
Metals (dissolved)				
Copper	g/m ³	0.0193	0.0125	0.088
Zinc	g/m ³	0.69	0.63	0.64
Treatment chemicals				
Dibutyltin	g/m ³	0.00016	< 0.00006	-
Tributyltin	g/m ³	0.00008	< 0.00005	0.0046
Triphenyltin	g/m ³	< 0.00004	< 0.00004	-
Hydrocarbons				
C7 - C9	g/m ³	< 0.10	-	-
C10 - C14	g/m ³	< 0.2	-	-
C15 - C36	g/m ³	< 0.4	-	-
Total HC	g/m ³	< 0.7	-	15*

*HC measured in place of oil & grease

Table 49 TSM stormwater sampling results, site IND001069

Parameter	Unit	8 Sep 2021	20 May 2022	Consent limits
Temperature	°C	11.8	12.9	25
pH	pH	7.0	7.1	6-9
Conductivity	mS/m	9.8	7.8	-
Suspended solids	g/m ³	169	33	100
Turbidity	FNU	350	60	-
TBOD	g O ₂ /m ³	3.4	2.2	-
COD	g O ₂ /m ³	32	10	-
Metals (total)				
Arsenic	g/m ³	0.024	0.0108	0.24

Parameter	Unit	8 Sep 2021	20 May 2022	Consent limits
Boron	g/m ³	0.044	0.042	3.7
Chromium	g/m ³	0.0173	0.0046	0.4
Copper	g/m ³	0.050	0.0113	-
Tin	g/m ³	0.0023	0.0119	-
Zinc	g/m ³	0.51	0.27	-
Metals (dissolved)				
Copper	g/m ³	0.0079	0.0067	0.088
Zinc	g/m ³	0.170	0.21	0.64
Treatment chemicals				
Dibutyltin	g/m ³	0.00010	0.00011	-
Tributyltin	g/m ³	0.00006	0.00007	0.0046
Triphenyltin	g/m ³	< 0.00004	< 0.00004	-
Hydrocarbons				
C7 - C9	g/m ³	< 0.10	-	-
C10 - C14	g/m ³	< 0.2	-	-
C15 - C36	g/m ³	< 0.4	-	-
Total HC	g/m ³	< 0.7	-	15*

*HC measured in place of oil & grease

On most occasions, samples taken from both of the sites generally complied with consent conditions for all parameters. However, concentrations of zinc and suspended solids were slightly elevated during the September 2021 sampling event at sites IND001068 and IND001069 respectively. While slightly elevated levels of zinc in the stormwater discharge from both sites continue to be present. It is noted that TSM undertook work in the 2019 monitoring year to reduce contaminant loading in their stormwater discharge and overall zinc concentrations are lower than levels noted historically.

Monitoring of the light organic solvent pesticides (LOSP) treatment chemicals IPBC, permethrin, PRCA and TEBA was initiated in the 2010-2011 year after TSM changed to using these chemicals rather than tributyltin. Levels of these contaminants have been known to fluctuate over time with the latest results being similar to the median of historical results from TSM discharges. Concentrations of LOSP treatment chemicals in the TSM discharge were sampled on two occasions during the year under review, and on one occasion, samples were also collected from the receiving waters of the Mangaone Stream. The results of both sampling surveys are shown in Table 50.

Table 50 LOSP treatment chemicals detected in TSM stormwater and Mangaone Stream below discharge

Date		8 Sep 2021		20 May 2022		
Parameter	Site	IND001068	IND001069	IND001068	IND001069	MGO000145
IPBC	g/m ³	< 0.0010	< 0.0010	< 0.002	< 0.002	< 0.0002
Permethrin	g/m ³	0.0070	0.0033	0.0006	0.0007	< 0.00002
PRCA	g/m ³	0.056	0.039	0.0134	0.0136	0.00007
TEBA	g/m ³	0.056	0.043	0.0131	0.0147	0.00006

PRCA and TEBA were detected in the receiving waters, at levels similar to the historical concentrations for the site downstream of TSM. Permethrin was detected in the discharge but was below the laboratory

detection limit in the receiving waters. IPBC levels were below laboratory detection limits at all sites sampled.

12.2.3 Results of surface water monitoring

Samples were collected from the receiving waters of the Mangaone Stream below the TSM site on one occasion. The results of this sampling were used to assess the impact of the discharge from the sawmill on the stream (Table 51). Residual levels of tributyltin are frequently detected in the stream below the discharge points, and are associated with historical contamination events. No new discharges of tributyltin have occurred from the TSM site since 2011.

Table 51 Surface water sampling results below TSM discharge, site MGO000145

Parameter	Unit	20 May 2022	Consent limits
Temperature	°C	14.1	25
pH	pH	7.1	6-9
Conductivity	mS/m	14.6	-
Suspended solids	g/m ³	41	100
Turbidity	FNU	24	-
CBOD	g O ₂ /m ³	< 1.0	2
Metals (total)			
Arsenic	g/m ³	< 0.0011	0.24
Boron	g/m ³	0.021	3.7
Chromium	g/m ³	0.00106	0.4
Copper	g/m ³	0.0046	-
Zinc	g/m ³	0.0153	-
Metals (dissolved)			
Copper	g/m ³	0.0014	0.088
Zinc	g/m ³	0.0047	0.64
Treatment chemicals			
Dibutyltin	g/m ³	< 0.00006	-
Tributyltin	g/m ³	< 0.00005	0.0046
Triphenyltin	g/m ³	< 0.00004	-

Tributyltin was not detected in the Mangaone Stream, and all consented parameters that apply to instream sites (pH, temperature, and CBOD) were within acceptable limits.

12.2.4 Sediment sampling

During the period under review Council undertook its triennial sediment sampling in the Mangaone Stream on 18 March 2022. These samples were analysed for LOSP residues, organo-tin residues, and, copper, chromium and arsenic. The results are given in Table 52. Sampling of sediment is next due 2024-2025 monitoring year.

Table 52 Results of sediment sampling in the Mangaone Stream

Parameter	Units	MGO000054 u/s TSM	MGO000145 immediately downstream TSM	MGO000150 300 m d/s TSM	ANZSECC sediment guidelines (low-trigger)
IPBC	mg/kg	< 1.2	< 1.0	< 0.6	-
Arsenic Total	mg/kg	< 2	10	2	20
Chromium	mg/kg	13	22	9	80
Copper	mg/kg	30	61	90	65
Dibutyltin	mg/kg	<0.005	0.031	< 0.005	-
Monobutyltin	mg/kg	< 0.007	< 0.007	< 0.007	-
Permethrin	mg/kg	< 0.07	1.65	< 0.04	-
PRCA	mg/kg	< 0.17	< 1.0	< 0.08	-
TEBA	mg/kg	< 0.03	< 0.2	< 0.11	-
Tributyltin	mg/kg	< 0.004	0.015	< 0.004	0.005
Triphenyltin	mg/kg	< 0.003	< 0.003	< 0.003	-
Zinc	mg/kg	91	310	62	200

Concentrations of zinc at MGO000145 and copper at MGO000150 were above the ANZSECC low-trigger guideline. While concentrations of other metals were detected in sediment samples, these were at levels below the ANZSECC sediment guidelines. Dibutyltin, permethrin and tributyltin were detected in the sediment at MGO000145 which is immediately down-gradient of the TSM discharge to the Mangaone Stream. While concentrations of other LOSP residues and organo-tin residues were below laboratory detection limits, there were a few instances where detection limits varied for the same parameter test.

12.3 Investigations, interventions, and incidents

In the 2021-2022 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with TSM's conditions in resource consents or provisions in Regional Plans.

12.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 53.

Table 53 Summary of performance for TSM consent 3491-3

Purpose: To discharge stormwater from a timber treatment site into the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option	Inspection and discussion with consent holder	Yes
2. Exercise of consent in accordance with application information	Inspection and discussion with consent holder	Yes
3. Limits stormwater catchment area	Site inspections	Yes
4. Concentration limits upon potential contaminants in discharge	Chemical sampling	No Slightly elevated levels of zinc and suspended solids September 2021
5. Maintenance of site access	Inspection and sampling	Yes
6. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling, and biomonitoring	Yes
7. Limit on pH and temperature effects and filtered carbonaceous biochemical oxygen demand (CBOD) beyond mix zone	Chemical sampling of the discharge and receiving water, and recording the temperatures at the time of sampling	Yes
8. Maintain and adhere to contingency plan	Reviewed plan received 2018	Yes
9. Maintain and adhere to management plan	Reviewed plan received 2018	Yes
10. Notification of changes at the site	Inspection and consultation with site operators	Yes
11. Provision for review re effects	Next option for review in June 2026	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

During the period under review, Taranaki Sawmills Ltd demonstrated a good level of environmental performance and high level of administrative performance and compliance with its resource consent as defined in Appendix II.

13 Technix Group Ltd

13.1 Site description

The engineering complex of Technix Group Ltd (Technix) is the largest industrial site along the lower Waiwhakaiho River (Figure 16). Situated on the true right bank of the river immediately above its confluence with the Mangaone Stream, the 8.4 ha area of land is bounded by Rifle Range Road, Vickers Road, State Highway 3, and the Mangaone Stream. The development comprises several building complexes, roading and drainage systems.

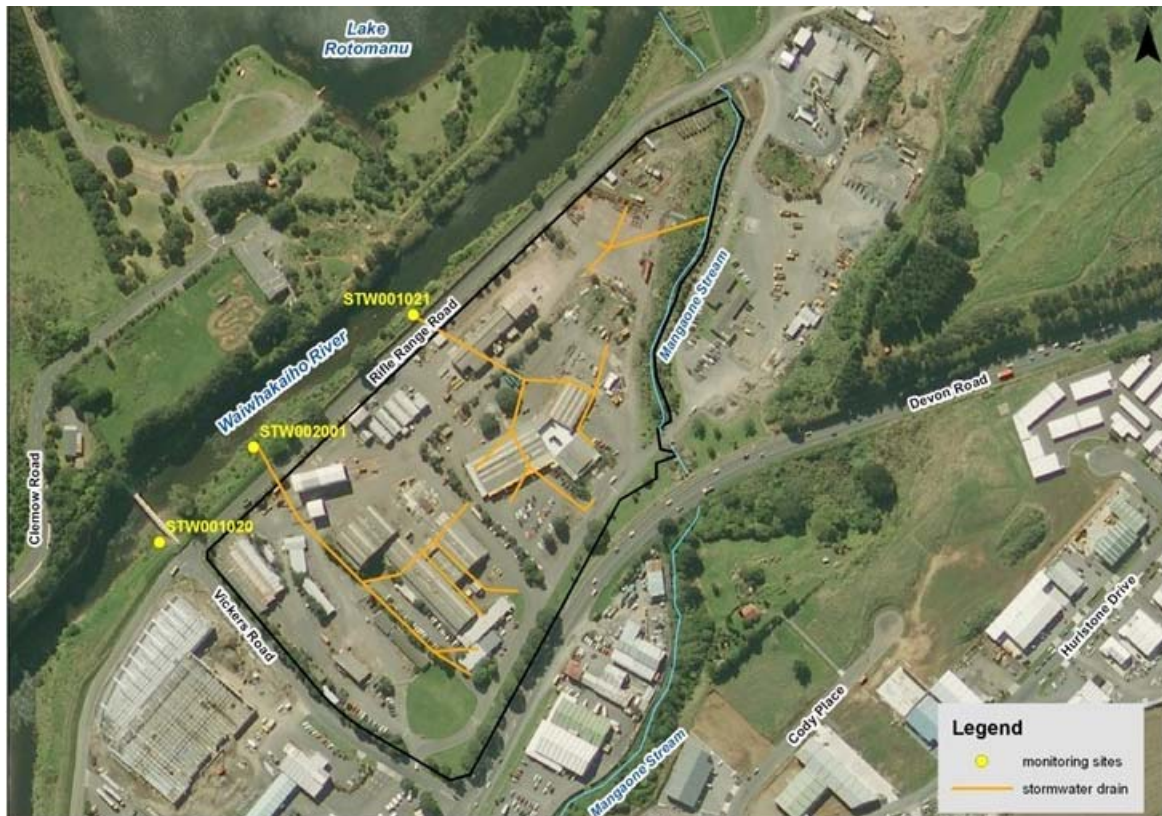


Figure 16 Aerial view of Technix site, drainage system, and sampling locations

The stormwater network under the Technix site is extensive with multiple collection and discharge points throughout the property (Figure 16). In the mid-section of the site, stormwater is diverted from the perimeter of the main buildings and directed under Dialog Fitzroy into the Waiwhakaiho River, via a stormwater drain (STW001021). Multiple sumps along this system collect and divert stormwater into this network. Feed pipes have an internal diameter of 150 mm, while the discharge pipe has an internal diameter of 225 mm.

The south-western area of the site collects stormwater in a series of pipes ranging between 100 mm and 200 mm in diameter. These pipes discharge onto either Vickers or Rifle Range Road, where discharges then enter the NPDC stormwater network and are subsequently discharged into the Waiwhakaiho River. The northern area of the site is primarily used as a storage yard. Any stormwater collected in this area is discharged into the Mangaone Stream, via a 375 mm concrete stormwater pipe (Figure 16).

Technix Group leases buildings on the site to several tenant companies carrying out a range of activities. Dialog Fitzroy own and operate a significant part of the yard in the centre of the property owned by Technix (Figure 17). See Section 4 for activities and compliance reporting relating to Dialog Fitzroy.



Figure 17 View of extent of Technix property (in yellow). Stormwater discharge from Dialog Fitzroy, which leases part of the property from Technix, is shown in Stormwater Area 1 and 2)

The buildings and land-use in the areas owned by Technix include:

- Staff offices and facilities;
- Workshops (machining, plate and general);
- Dangerous goods storage;
- Liquid oxygen tanks;
- Blast and paint storage and
- Blasting and painting sheds (until February 2014).

Contaminants that may be present on the site include:

- Grease and oils (e.g. diesel, petrol, lubricants & hydraulic oils);
- Metals (ferrous and non-ferrous);
- Paint;
- General workshop contaminants (e.g. welding, cuttings and grinding).

Land cover at the site varies between bitumen seal, gravel and grass, and there is a large sealed bitumen area in the northern part of the site that was once used as a truck wash bay. General day to day activities at the site may result in contaminants being discharged to land. These contaminants may enter water when wash water (from cleaning equipment in the yard) enters stormwater drains, or where contaminants on land become entrained in stormwater during rainfall events. Stormwater is then discharged to the Waiwhakaiho River or Mangaone Stream at four main points, three to the Waiwhakaiho River and one to the Mangaone Stream.

Technix hold consents **9981-1**, **9982-1** and **0291-3** to discharge stormwater from an industrial site into the Waiwhakaiho River and Mangaone Stream. All consents have the standard special conditions as set out in

Section 1.2. Consent **0291-3** also has a condition prohibiting discharges from the truck wash to the stormwater network. Copies of each of the consents are attached in Appendix I.

As Technix leases sections within the multiple areas of the site, the specific type of contaminants can change depending on which business leases the section. Technix ensures all tenants are aware of the stormwater resource consent, the conditions of the consent, and have been provided with the spill contingency plan.

The original consented discharges were two discharges to the Waiwhakaiho River from the central areas of the site, and the one to the Mangaone Stream from the eastern area of the site. The other, previously unlicensed, discharge occurs from the western area of the site to the Waiwhakaiho River down Vickers Road, which also serves commercial properties on the opposite side of the road. This discharge point was included in NPDC's consent **5163-2** when it was renewed on 20 November 2007. Technix also held a consent to discharge treated stormwater to the Mangaone Stream (consent **2230-2**), which was due to expire mid-2008. During the 2007-2008 monitoring year, the Council concluded this activity was permitted activity under the RFWP (which became operative in 2001) provided the discharge met conditions of Rule 23. Therefore, the Council did not require that this consent was renewed.

13.2 Results

13.2.1 Inspections

Three routine compliance monitoring inspections were conducted at the site during the monitoring period to assess compliance with resource consent conditions. These inspections were conducted on 11 November 2021, 10 February and 10 May 2022.

All inspections found the site to be clean and tidy with no evidence of spills. There was no odour or discharge of dust off site.

13.2.2 Results of discharge monitoring

There are three routine sampling points for monitoring of stormwater discharges from Technix's site. Two are in relation to the Waiwhakaiho River, and the third is in relation to the Mangaone Stream. Samples were collected from each site on two occasions during the period under review.

13.2.2.1 Discharge to Waiwhakaiho River opposite Dialog Fitzroy

This discharge contains stormwater from both the Technix and Dialog Fitzroy sites. Up until 20 February 2014, this combined discharge was covered solely by consent 0291 held by Technix. The partial transfer of consent to Dialog Fitzroy resulted in the Dialog Fitzroy's stormwater being covered by their own consent, 9853 (Section 4). The results of sampling are presented in Table 54.

Table 54 Combined Technix/Dialog Fitzroy stormwater sampling results, site STW002001

Parameter	Unit	8 September 2021	20 May 2022	Consent limits
Temperature	°C	12.2	13.7	-
pH	pH	7.2	7.6	6-9
Conductivity	mS/m	9.8	8.4	-
Suspended Solids	g/m ³	50	48	100
Turbidity	FNU	72	56	-
Total hydrocarbons	g/m ³	< 0.7	< 0.7	15*

*Hydrocarbons measured in place of oil & grease

13.2.2.2 Discharge to Waiwhakaiho River from Vickers Road

This discharge contains stormwater from the south-western end of the Technix site (consent 9881) that discharges via NPDC's stormwater reticulation running along Vickers Road (NPDC consent 5163). The discharge also contains stormwater from Vickers Road itself as reported in Section 10. The results of sampling are presented in Table 55.

Table 55 Combined Technix/NPDC stormwater sampling results, site STW001020

Parameter	Unit	10 Feb 2022	20 May 2022	RFWP Guideline
Temperature	°C	22.5	14.1	-
pH	pH	7.5	7.1	6-9
Conductivity	mS/m	19.3	11.7	-
Suspended solids	g/m ³	4	17	100
Turbidity	NTU/FNU	8.8	26	-
Total hydrocarbons	g/m ³	< 0.7	< 0.7	15*

*Hydrocarbons measured in place of oil & grease

13.2.2.3 Discharge to Mangaone Stream from Technix

This discharge contains stormwater from the north eastern end of the Technix site (consent 9882) which is discharged to the Mangaone Stream. The results of sampling of this area are shown in Table 56.

Table 56 Technix stormwater discharge sampling results, site STW001154

Parameter	Unit	10 Feb 2022	Consent limits
Temperature	°C	21.1	-
pH	pH	7.4	6-9
Conductivity	mS/m	18.9	-
Suspended solids	g/m ³	5	100
Total hydrocarbons	g/m ³	< 0.7	15*
Nutrients			
NH ₃	g/m ³	0.0024	-
NH ₄	g/m ³	0.186	-
DRP	g/m ³	0.005	-

*Hydrocarbons measured in place of oil & grease

Levels of suspended solids, hydrocarbons, and pH at all sites were found to be compliant with consent conditions. There were no effects noted in either the Waiwhakaiho River or Mangaone Stream associated with any of the discharges for the period under review.

13.3 Investigations, interventions, and incidents

In the 2021-2022 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Technix's conditions in resource consents or provisions in Regional Plans.

13.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 57, Table 58, and Table 59.

Table 57 Summary of performance for Technix consent 0291-3

Purpose: To discharge stormwater from an industrial site into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Best practicable option to prevent or minimise effects	Inspections	Yes
2. Catchment area not to exceed 2.2 ha	Inspections	Yes
3. No discharge to stormwater from truck wash after 31 December 2015	Inspections and liaison with consent holder	Yes
4. Concentration limits upon potential contaminants in discharge	Chemical sampling	Yes
5. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes
6. Prepare and maintain Contingency Plan	Up to date as of April 2018	Yes
7. Preparation of Stormwater Management Plan	Up to date as of April 2018	Yes
8. Consent holder to notify Council of significant changes to processes or operations	Inspections and liaison with consent holder	Yes
9. Provision for review of consent	Next option for review in June 2026	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 58 Summary of performance for Technix consent 9981-1

Purpose: To discharge stormwater from an industrial site into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Best practicable option to prevent or minimise adverse effects	Inspections	Yes
2. Catchment area not to exceed 3. 1.8 ha	Inspections	Yes
4. Concentration limits upon potential contaminants in discharge	Chemical sampling	Yes
5. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection, receiving water sampling and biomonitoring	Yes

Purpose: To discharge stormwater from an industrial site into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
6. Prepare and maintain Contingency Plan	Up to date as of April 2018	Yes
7. Preparation of Stormwater Management Plan	Up to date as of April 2018	Yes
8. Consent holder to notify Council of significant changes to processes or operations	Liaison with consent holder	Yes
9. Provision for review of consent	Next option for review in June 2026	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 59 Summary of performance for Technix consent 9982-1

Purpose: To discharge stormwater from an industrial site into the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Best practicable option to prevent or minimise adverse effects	Inspections	Yes
2. Catchment area not to exceed 1.3 ha	Inspections	Yes
3. Concentration limits upon potential contaminants in discharge	Sampling	Yes
4. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes
5. Prepare and maintain Contingency Plan	Up to date as of April 2018	Yes
6. Preparation of Stormwater Management Plan	Up to date as of April 2018	Yes
7. Consent holder to notify Council of significant changes to processes or operations	Liaison with consent holder	Yes
8. Provision for review of consent	Next option for review in June 2026	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

During the period under review, Technix Group Ltd demonstrated a high level of environmental performance and high level of administrative performance and compliance with their resource consents as defined in Appendix II.

14 Waste Management NZ Ltd

14.1 Site description

Waste Management NZ Ltd (Waste Management) operate a refuse transfer depot on Katere Road, New Plymouth (Figure 18). Activities on the site include the receipt and temporary storage of general refuse (non-hazardous solid waste). The site does not use or store any hazardous substances. Refuse is deposited onto a transfer pad on site by truck or from smaller bins. Sorting takes place into recyclables-glass cardboard and plastic. Most refuse is loaded onto a truck and driven to a landfill near Marton.

The refuse storage area is usually cleared at the commencement of each day's activities, but on occasions there is excess refuse left within the storage area over night. This is the first refuse to be loaded the next morning. Empty used bins are stored on the wash pad which is connected to the New Plymouth District Council (NPDC) trade waste system. These bins are then washed with a water blaster and the runoff is directed to the trade waste system. Washed bins are then generally moved to the yard where they are stored until required in the future.



Figure 18 Aerial view of Waste Management site and sampling location

Waste Management holds consent **10430-1** to discharge stormwater from a waste depot into an unnamed tributary of the Mangaone Stream. This consent contains nine conditions, eight of which are the standard special conditions as set out in Section 1.2. Condition four sets out the discharge contaminant limits, including carbonaceous biochemical oxygen demand.

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

14.2 Results

14.2.1 Inspections

Three routine compliance monitoring inspections were conducted at the site during the monitoring period to assess compliance with resource consent conditions. These inspections were conducted on 9 September 2021, 8 February 2022, and 9 May 2022.

While all inspections found the site to be reasonably clean and tidy, on occasion drains and fences required a small amount of work to remove debris and rubbish. During the inspection undertaken in February 2022 it was noted that drains adjacent the transfer pit needed to be cleared of sediment and chemicals were being stored outside the designated bunded area or wash pad. These issues were addressed promptly by the consent holder.

14.2.2 Results of discharge monitoring

Sampling of the Waste Management stormwater discharge was undertaken two occasions at site STW002098. The results are given in Table 60.

Table 60 Waste Management stormwater sampling results, site STW002098

Parameter	Unit	9 Sept 2021	20 May 2022	Consent limits
Temperature	°C	12.8	13.4	-
pH	pH	6.8	6.9	6-9
Conductivity	mS/m	18.1	11.0	-
Suspended solids	g/m ³	4	29	-
Turbidity	NTU	9.7	26	-
CBOD	g O ₂ /m ³	1.2	4.2	20*
TBOD	g O ₂ /m ³	1.4	3.4	-
Total hydrocarbons	g/m ³	< 0.7	< 0.7	15*
Nutrients				
NH ₃	g/m ³	0.00045	< 0.000018	0.025
NH ₄	g/m ³	0.27	< 0.010	-
DRP	g/m ³	< 0.004	0.004	-

*CBOD limit of 2 g/m³ applies in-stream. Hydrocarbons measured in place of oil & grease

The samples collected complied with the carbonaceous biochemical oxygen demand limit, oil and grease limit, and pH limits set by the consent, and were within historical ranges for the site.

14.3 Investigations, interventions, and incidents

In the 2021-2022 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Waste Management's conditions in resource consents or provisions in Regional Plans.

14.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 61.

Table 61 Summary of performance for Waste Management consent 10430-1

Purpose: <i>To discharge stormwater from a waste depot into an unnamed tributary of the Mangaone Stream</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practicable option to avoid, remedy or mitigate effects	Inspection and consultation with site operators	Yes
2. Leachate to be diverted from stormwater by certain date	Inspection and consultation with site operators	Yes
3. Limit on catchment size	Inspection and consultation with site operators	Yes
4. Limits on chemical composition of discharge	Observation during inspection and discharge sampling	Yes
5. Limit on effects in receiving water	Observation during inspection and sampling	Yes
6. Maintain contingency plan	Document received	Yes
7. Operate site in accordance with Management Plan	Document received	Yes
8. Notification of changes at the site	Inspection and consultation with site operators	Yes
9. Review conditions	Next option for review in June 2023, recommendation attached in Section 16.4	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High High
Overall assessment of administrative performance in respect of this consent		

N/A = not applicable

During the period under review, Waste Management NZ Ltd demonstrated a high level of environmental performance and high level of administrative performance and compliance with its resource consent as defined in Appendix II.

15 Surface water quality

15.1 Chemical sampling surveys

The results of chemical analysis of the receiving water for the period under review given in the subsections below. Refer to Section 1.3.4 for the sampling strategy. Monitoring locations are shown in Figure 1.

15.1.1 Waiwhakaiho River wet weather survey

The lower Waiwhakaiho River was sampled at four points (see below) under wet weather discharge monitoring conditions in May 2022, with results provided in Table 61:

Merrilands Domain (site code WKH000800): At the riffle just upstream of the swimming area in the Waiwhakaiho River at the Merrilands Domain, about 5.4 km from the coast. This is the upstream, or control site with respect to NPDC's Burton Street stormwater discharge.

Constance Street (site code WKH000920): At the first bend below Devon Road bridge, about 2.6 km from the river mouth. This is the upstream, or control site, with respect to monitoring discharges to the lower Waiwhakaiho River from New Plymouth industrial area including the groundwater discharge from the Bewley Road landfill.

Opposite Firth's (site code WKH000925): On the eastern side, upstream of the site of the old concrete ford opposite Firth Industries, about 540 m below Constance Street and 280 m below the confluence with McLeod's Drain. This was effectively the lower mixing zone boundary for the discharge from McLeod's Drain (consent 3138), which serves the largest catchment in the Fitzroy area, including the fertiliser depot (consent 3140) and rail yard (consent 1735). The ford was removed in April 1997 as part of flood protection works.

Above Mangaone (site code WKH000942): Immediately above the confluence with the Mangaone Stream and any tidal saline influence, beside the eastern bank opposite Lake Rotomanu, about 1,300 m from the river mouth. This is the downstream monitoring site for discharges from Firth (consent 0392), Dialog Fitzroy (consent 0021 and 9853), and the Technix operations along Rifle Range Road (consents 0291, 9981).

Table 62 Results of wet weather monitoring of lower Waiwhakaiho River, 20 May 2022

		WKH000800	WKH000920	WKH000925	WKH000942
Parameter	Unit	08:05	08:30	08:55	09:45
Temperature	°C	13.9	14.0	13.9	14.0
pH	pH	7.5	7.6	7.6	7.5
Conductivity	mS/m	9.7	9.5	9.7	9.6
Suspended solids	g/m ³	6	5	< 3	< 3
Turbidity	FNU	3.8	3.3	2.8	2.1
Fluoride	g/m ³	-	< 0.05	<0.05	< 0.05
Nutrients					
NH ₃	g/m ³	0.00034	0.00022	0.00025	0.00021
NH ₄	g/m ³	0.039	0.024	0.027	0.026
NNN	g/m ³	-	0.60	-	0.62
DRP	g/m ³	0.018	0.018	0.022	0.018
Hydrocarbons					
C7 - C9	g/m ³	-	< 0.10	-	-
C10 - C14	g/m ³	-	< 0.2	-	-

		WKH000800	WKH000920	WKH000925	WKH000942
Parameter	Unit	08:05	08:30	08:55	09:45
C15 - C36	g/m ³	-	< 0.4	-	-
Total HC	g/m ³	-	< 0.7	-	-

Concentrations of ammoniacal nitrogen (NH₄) and unionised ammonia (NH₃) were below the respective ANZECC trigger guideline of 0.9 g/m³ and the RFWP guideline of 0.025 g/m³. Instream levels of dissolved reactive phosphorus (DRP) downstream of the industrial area were found to be below the 0.03-0.15 g/m³ range that may support algal growth. This is in comparison to the previous monitoring year, where DRP was at a level which could encourage algal growth. Overall, there was no discernible trend of increasing contaminant concentrations between the up and downstream receiving waters (Table 62).

15.1.2 Mangaone Stream wet weather survey

The Mangaone Stream was sampled at five points (see below) under wet weather discharge monitoring conditions in May 2022, with results provided in Table 63.

Egmont Road (site code MGO000050): the uppermost site at Egmont Road Bridge.

Downstream of NPDC mid Katere Road (site code MGO000075): a site established in 2007 approximately 10 m downstream of the NPDC mid Katere Road stormwater discharge. This site also acts as an upstream "control site" for TSM's timber treatment site.

Above old Ravensdown (site code MGO000148): a site established in 1996 immediately above the main stormwater drain of the Devon 662 depot (and also above the confluence of the Mangamiro Stream). This site was primarily established to enable differentiation of the influence of major tributaries below Egmont Road, particularly the Puremu and Manganaha Streams which flow through Colson Road landfill, from that of discharges from the Devon 662 (old Ravensdown) site.

Katere Road bridge (site code MGO000153): below the discharge from Devon 662 site, and at the end of the mixing zone specified in the company's consent 3865.

Rifle Range Road (site code MGO000190): the bottom site at the Rifle Range Road Bridge, immediately above the Waiwhakaiho confluence and about 50 m below the discharge point of Downer's site.

Table 63 Results of wet weather monitoring of Mangaone Stream, 20 May 2022

		MGO000050	MGO000075	MGO000148	MGO000153	MGO000190
Parameter	Unit	08:35	09:40	12:05	10:25	09:50
Temperature	°C	13.8	13.9	15.2	14.2	14.7
pH	pH	7.1	7.1	7.2	7.2	7.2
Conductivity	mS/m	14.9	14.7	15.5	15.5	16.7
Suspended solids	g/m ³	95	56	19	36	48
Turbidity	FNU	49	34	14.2	23	33
CBOD (dissolved)	g/m ³	-	< 1.0	< 1.0	-	-
Metals (dissolved)						
Copper	g/m ³	0.0012	0.0013	0.0012	-	0.0018
Zinc	g/m ³	0.0032	0.0043	0.0047	-	0.0120
Nutrients						
NH ₃	g/m ³	-	0.00026	-	0.00063	-
NH ₄	g/m ³	-	0.080	-	0.165	-

		MGO000050	MGO000075	MGO000148	MGO000153	MGO000190
Parameter	Unit	08:35	09:40	12:05	10:25	09:50
NNN	g/m ³	-	-	0.85	-	-
DRP	g/m ³	-	0.004	0.007	0.008	-

Although, nutrient levels were below the ANZECC trigger guideline of 0.9 g/m³ (NH₄), the RFWP guideline of 0.025 g/m³ (NH₃) and nuisance algal growth 0.03-0.15 g/m³ (DRP) during sampling in May 2022. Nutrient levels did show an increase, by around two fold, between the up-gradient site MGO000075 and the down-gradient site MGO000153. This suggests there is some nutrient input to the Mangaone Stream from local activities in the area. However, DRP concentrations were lower than historic levels noted at site MGO000153. This may be the result of ongoing remediation works at the Devon 662 site.

CBOD concentrations (where measured) during the monitoring year were also found to be low and within RFWP guideline limits (2 g/m³).

Metal and metalloid concentrations are monitored in the Mangaone Stream to determine what, if any, effects may be occurring due to the discharges from TSM and other industrial discharges. Sources of these contaminants include (to varying extents), the industrial sites and other non-point sources such as run-off from roads.

Low level analyses for zinc and copper were also performed on samples taken at the Egmont Road site (MGO000050) to monitor the effects of stormwater discharged upstream of the industries monitored under this programme. This site is also monitored for McKechnie Aluminium Solutions Ltd as part of their compliance monitoring programme as historically, copper and brass were processed at this site. There was a marginal difference in copper concentrations between the up-gradient and down-gradient sites sampled in May 2022. And while levels of zinc had increased by two and a half times between sites located in the upper and mid catchment, and at the down-gradient site MGO000190. Overall, the concentration of zinc in the Mangaone Stream was low.

Tributyltin was not detected in the water column downstream of the TSM discharge during the monitoring period. However, three of the replacement treatment chemicals now in use, TEBA, PRCA, and permethrin, were detected in the stream (Section 12.2.3). However, levels of these chemicals detected over the monitoring period were similar to the historical concentrations recorded at the site downstream. IPBC levels were below laboratory detection limits at sites sampled.

15.2 Freshwater biomonitoring

15.2.1 Macroinvertebrate surveys

The Council collected streambed macroinvertebrates at five sites in the Mangaone Stream and three sites in the Waiwhakaiho River on 9 November 2021 and 18 March 2022, in order to assess whether discharges from the Lower Waiwhakaiho Industrial area had had any adverse effects on the macroinvertebrate communities of these streams (Figure 19). Macroinvertebrates were identified and the number of different types of taxa counted (taxa richness), and MCI and SQMCI scores were calculated for each site.

The MCI is a measure of the overall sensitivity of the macroinvertebrate community to the effects of nutrient pollution in streams. It is based on the presence/absence of taxa with varying degrees of sensitivity to pollution. The SQMCI takes into account taxa abundance as well as sensitivity to pollution, and may reveal more subtle changes in communities. Significant differences in either the MCI or the SQMCI between sites indicate the degree of adverse effects (if any) of the discharges being monitored and enable the overall health of the macroinvertebrate communities to be determined.

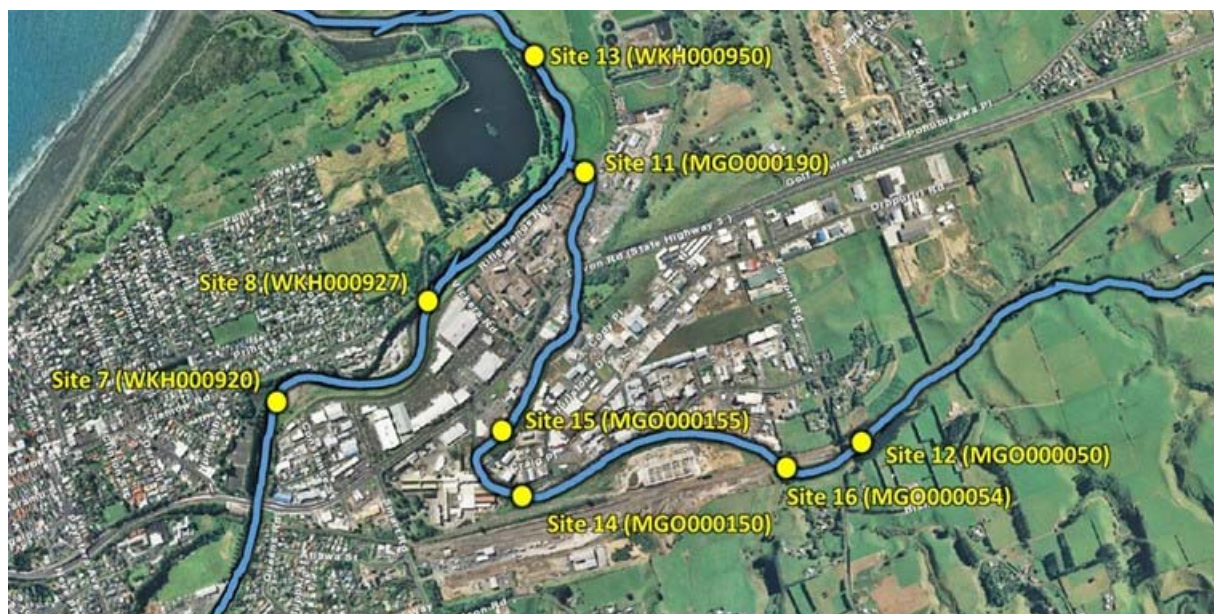


Figure 19 Biomonitoring sites in the Lower Waiwhakaiho Catchment

15.2.1.1 Macroinvertebrate survey 9 November 2021

MCI scores at all three sites in the Waiwhakaiho River indicated 'fair' macroinvertebrate community health. MCI scores increased significantly in a downstream direction. MCI scores were not significantly different to historic medians at sites 7 and 8, while site 13 recorded a significantly higher score. SQMCI scores were not significantly different between the three Waiwhakaiho River sites, ranging between 3.4 and 4.1 units. Taxa richness was moderate at all three sites and similar to site medians. Overall, these results indicated that discharges from the industrial area were not having a significant negative effect on the macroinvertebrate communities of the lower Waiwhakaiho River.

Taxa richness was low to moderate in the Mangaone Stream. 'Control' site 12 recorded 13 taxa which was slightly lower than the median for the site and that recorded in the previous survey. Taxa richness then increased slightly at site 16, then decreased at the three downstream sites, with sites 14, 15 and 11 recording a low eight, nine and seven taxa respectively. These results suggest that a deleterious discharge has possibly entered the Mangaone Stream between sites 16 and 14 contributing to lowered taxa richness at the three downstream sites.

MCI scores in the Mangaone Stream were reflective of 'poor' macroinvertebrate community health. 'Control' site 12 and nearby downstream site 16, together with downstream site 15 recorded the highest MCI scores of 77, 75 and 78 units respectively. These scores were not significantly different to one another, while the MCI score recorded at site 14 was significantly lower than those recorded at both 'control' site 12 and site 15. This result may again point to a deleterious discharge entering the stream upstream of site 14, which has had possibly had a localised impact. Site 11 recorded the lowest MCI score (60 units) of the Mangaone Stream sites, and together with low taxa richness may be indicative of a deleterious discharge impacting the site. These results indicate that there have been localised impacts at sites 14 and 11 in the Mangaone Stream, which may be due in part to chronic pollution from historic sites, but may also indicate that a recent discharge has contributed to lowered water quality.

SQMCI scores ranged between 2.8 and 4.1 units and decreased in a downstream direction. 'Control' site 12 and adjacent site 16 recorded 'fair' SQMCI scores of 4.1 and 4.0 units respectively, while the downstream sites all recorded SQMCI scores reflective of 'poor' macroinvertebrate community health. Downstream sites 15 and 11 both recorded SQMCI scores that were significantly lower than that recorded at 'control' site 12, while the remaining scores were not significantly different from one another.

Overall, the results indicated that discharges from the industrial area were not having a significant negative effect on the macroinvertebrate communities in the lower Waiwhakaiho River. The Mangaone Stream at sites 14 and 11 recorded a significant decline in MCI and taxa richness, which may be due in part to chronic pollution from historic sites but may also indicate a localised deleterious discharge.

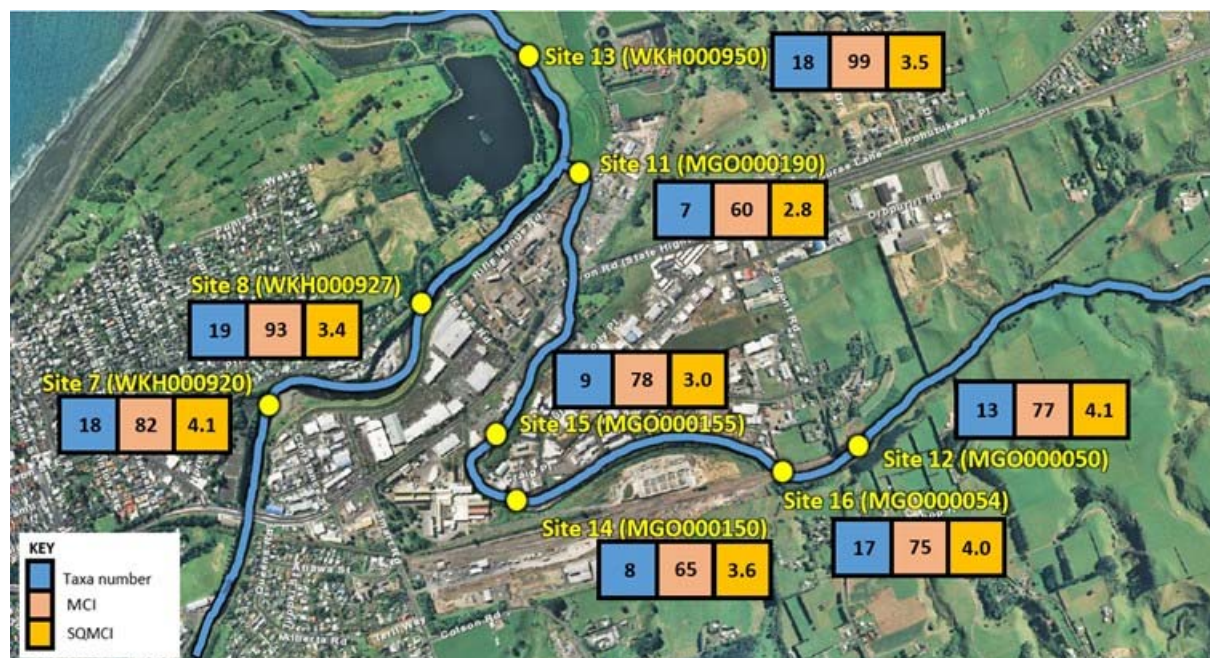


Figure 20 Biomonitoring sites in the Waiwhakaiho River Catchment with taxa number, MCI scores and SQMCI scores for each site, 9 November 2021

15.2.1.2 Macroinvertebrate survey 18 March 2022

The current survey results of the Waiwhakaiho River gave no indication of a toxic discharge, which would dramatically lower taxa richness. Taxa richness was similar between sites 7, 8 and 13. MCI scores in the Waiwhakaiho River decreased significantly in a downstream direction and were reflective of 'good', 'fair' and 'poor' health at sites 7, 8 and 13 respectively. SQMCI scores were similar at sites 7 and 8 and were reflective of 'poor' health, while site 13 recorded a 'very poor' SQMCI score, which was significantly lower than those recorded upstream at sites 7 and 8. Overall, these results indicated that discharges from the industrial area have likely contributed to a deterioration in water quality in a downstream direction in the lower Waiwhakaiho River, particularly below the Mangaone Stream confluence at site 13.

Taxa richness was moderate in the Mangaone Stream ranging from 15 to 17 taxa. MCI scores were reflective of 'poor' to 'fair' macroinvertebrate community health. Sites 12 and 15 both recorded 'fair' health, while sites 16 and 14 recorded 'poor' health. Despite the change in 'health' category, there were no significant differences in MCI scores between sites 12, 16, 14 and 15. However, site 11, the furthestmost downstream site on the Mangaone Stream recorded a 'poor' MCI score of 64 units. This score was the lowest of the five Mangaone Stream sites and was significantly lower than that recorded at 'control' site 12 and the nearby upstream site, site 15. SQMCI scores ranged between 3.4 and 4.3 units. Site 16 recorded a 'fair' SQMCI score, while the remaining sites recorded SQMCI scores reflective of 'poor' health. The SQMCI scores recorded at downstream sites 14, 15 and 11 were similar to that recorded at 'control' site 12.

Overall, the results indicated that discharges from the industrial area have contributed to a deterioration in macroinvertebrate community health in a downstream direction in the lower Waiwhakaiho River, including below the Mangaone Stream confluence. The Mangaone Stream at site 11 also recorded a significant decline in MCI score, which may be due in part to chronic pollution from historic sites, but may also indicate that a recent discharge has contributed to lowered water quality at this site.

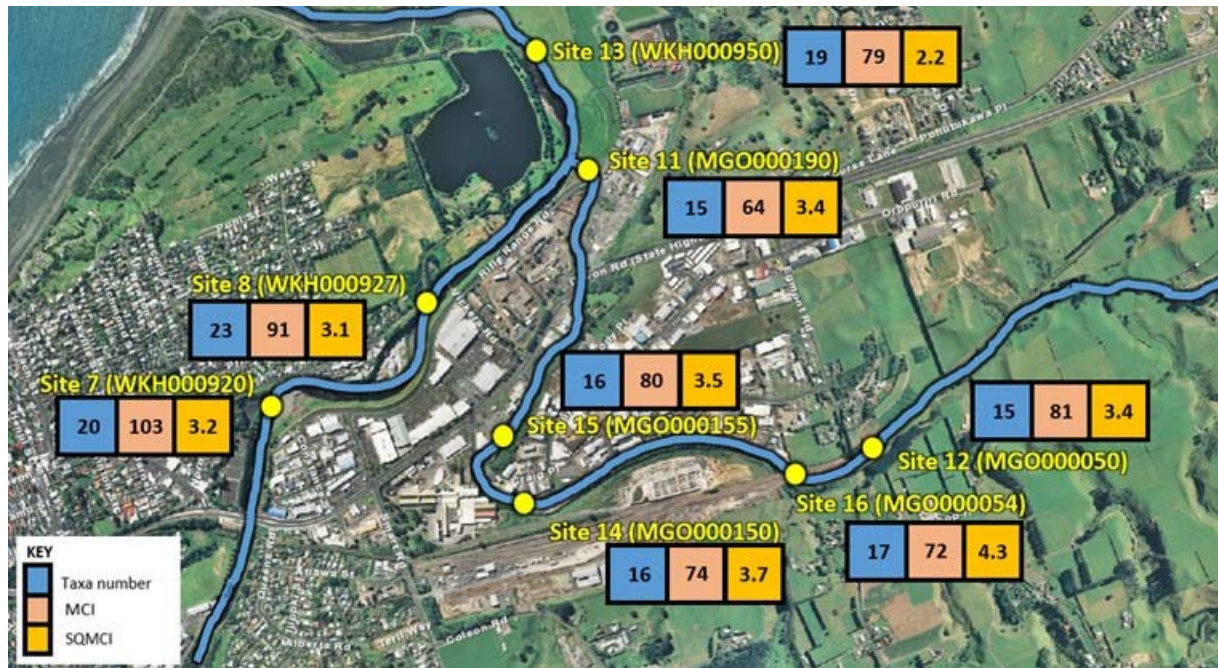


Figure 21 Biomonitoring sites in the Waiwhakaiho River Catchment with taxa number, MCI scores and SQMCI scores for each site, 18 March 2022

Copies of biomonitoring reports for this site are available from the Council upon request.

16 Discussion

16.1 Discussion of site performance

A total of 43 site visits were made to consent holders in the Lower Waiwhakaiho Catchment during the monitoring year under review:

- 42 routine compliance monitoring inspections
- One visit to provide advice and information

Three of the routine site inspections (4.9 %) resulted in non-compliances and further enforcement action.

In general, sites were found to be relatively clean and well-maintained. General housekeeping, site sweeping, windblown refuse, drain cleaning and sediment controls were the most frequently mentioned areas requiring attention as noted by Inspecting Officers. Staff onsite were generally compliant and carried out required works in appropriate timeframes. Spills, sheens, and leaks noted onsite were dealt with at the time of each visit, and multiple consent holders undertook significant upgrades and/or repairs to equipment and plant on each site as required. These works included installation of new sediment treatment systems, resurfacing and yard sealing, and regular updating of site stormwater management and spill contingency plans.

With one exception, the site performance for each of the consent holders during the year was of an acceptable standard. This is reflected in the low number of public complaints and incidents recorded for this catchment with only one complaint received over the 12-month monitoring period.

16.2 Environmental effects of exercise of consents

Council water quality surveys of both the Mangaone Stream and the lower Waiwhakaiho River showed that the concentrations of contaminants were generally relatively stable throughout the length of the catchment. The primary contaminants of concern were metals and metalloids, nutrients (nitrogen and phosphorus), sulphates, suspended sediment, and both chemical and biological oxygen demand. Of these, the nutrient values and zinc levels showed slight increases between upstream and downstream sites in the Mangaone Stream. The source of these slight increases is well discussed in previous monitoring reports.

Metals and metalloid concentrations fluctuated throughout the catchment, and in-stream values were closely related to proximity to the source (site stormwater discharges). All results for the period under review were within ANZECC and Regional Fresh Water Plan (RFP) guidelines.

Suspended solids were the most frequently found contaminant of concern in site stormwater discharges. Samples collected from surface water sites, however, did not show any significant visual or chemical effects related to these discharges, indicating they were not having any measureable impact on the waterways.

All other contaminants in both surface and groundwater were generally within consented limits and New Zealand Drinking Water Standards guidelines. The exception of pH levels and sulphate concentrations in two groundwater bores at the Devon 662 site. However, results were within the expected range for these contaminants at this site.

Results of triennial sediment sampling in the Mangaone Stream found levels of zinc and copper were above the ANZECC low-trigger guideline at both down-gradient monitoring sites. These results were in line with historic values noted at these locations.

The results from macroinvertebrate surveys indicate discharges from the Fitzroy industrial areas were not having a significant effect on the macroinvertebrate communities in the Waiwhakaiho River. However, the taxa richness and MCI scores indicate that a pollution event had likely occurred upstream of the industrial area prior to the surveys. The Mangaone Stream sites showed a highly significant decline in MCI and taxa

richness in the middle reaches, which may due in part to chronic pollution from historic sites but also indicates that a more recent discharge lowering water quality has also occurred.

16.3 Evaluation of performance

Tabular summaries of each consent holders' compliance record for the period under review are set out in their individual sections of this report.

16.4 Exercise of option to review consent

Resource consents **3865-4.1** and **10430-1** provides for an optional review of the consent in June 2023. Condition 11 allows the Council to review the consent, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment.

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.

17 Recommendations

17.1 Recommendations from the 2020-2021 Annual Report

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

1. THAT in monitoring of consented activities at AML Limited in the 2021-2022 year continue at the same level as in 2020-2021.
2. THAT for 2021-2022, the programme for Devon 662 Limited Partnership remains similar to that programmed for the 2020-2021 period.
3. THAT monitoring of discharges from Dialog Fitzroy Ltd in the 2021-2022 year continue at the same level as in 2020-2021.
4. THAT monitoring of consented activities at Downer EDI Works Ltd in the 2021-2022 year remain similar to that in 2020-2021.
5. THAT monitoring of consented activities at Envirowaste Services Ltd in the 2021-2022 year remain similar to that in 2020-2021.
6. THAT monitoring of discharges from Firth Industries Ltd in the 2021-2022 year remain similar to that programmed in 2020-2021.
7. THAT monitoring of discharges from Freight and Bulk Transport Holdings Ltd in the 2021-2022 year remain similar to that programmed in 2020-2021.
8. THAT monitoring of discharges covered by consents held by New Plymouth District Council in the 2021-2022 period continues at similar a level to that undertaken in the 2020-2021 period.
9. THAT monitoring of discharges from KiwiRail Holding Ltd and New Zealand Railways Corporation Ltd in the 2021-2022 period remain similar to that programmed in the 2020-2021 period.
10. THAT monitoring of discharges from Ravensdown Fertiliser Co-operative Ltd in the 2021-2022 period continue at a similar level as that undertaken in the 2020-2021 period.
11. THAT monitoring programme for discharges from Taranaki Sawmills Ltd in the 2021-2022 period continue at a similar level as that undertaken in the 2020-2021 period.
12. THAT monitoring of discharges from Technix Group Ltd in the 2021-2022 period continue at a similar level as that undertaken in the 2020-2021 period.
13. THAT monitoring of discharges from Waste Management NZ Ltd's site during 2021-2022 remains similar to that programmed for the 2020-2021 period.
14. THAT should there be issues with environmental or administrative performance with any of the consent holders in 2021-2022, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.
15. THAT the option for a review of resource consent 3865-4.1 in June 2023, as set out in condition 11 of the consent, not be exercised, on the grounds that the current conditions are adequate.

These recommendations were subsequently implemented.

17.2 Alterations to monitoring programmes for 2022-2023

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 the monitoring programmed for all consented discharges in the lower Waiwhakaiho catchment in the 2022-2023 year continues at a similar level to that programmed for 2021-2022.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the sites 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 2022-2023.

17.3 Recommendations

1. THAT in monitoring of consented activities at AML/Allied Concrete in the 2022-2023 year continue at the same level as in 2021-2022.
2. THAT AML /Allied Concrete investigates and mitigates the source of suspended solids in stormwater discharges from their site, as per the outstanding Abatement Notice EAC-22058.
3. THAT for 2022-2023, the programme for Devon 662 Limited Partnership remains similar to that programmed for the 2021-2022 period.
4. THAT Devon 662 Limited Partnership reinstate the two monitoring bores that have been damaged/removed.
5. THAT monitoring of discharges from Dialog Fitzroy Ltd in the 2022-2023 year continue at the same level as in 2021-2022.
6. THAT monitoring of consented activities at Downer EDI Works Ltd in the 2022-2023 year remain similar to that in 2021-2022.
7. THAT Downer EDI Works Ltd address the continued incidence of suspended solids above the consented threshold in accordance with Abatement Notice EAC-23612.
8. THAT monitoring of consented activities at Envirowaste Services Ltd in the 2022-2023 year remain similar to that in 2021-2022.
9. THAT monitoring of discharges from Firth Industries Ltd in the 2022-2023 year remain similar to that programmed in 2021-2022.
10. THAT Firth Industries Ltd address the continued incidence of suspended solids above the consented threshold needs to be addressed to avoid further enforcement action.
11. THAT monitoring of discharges from Freight and Bulk Transport Holdings Ltd in the 2022-2023 year remain similar to that programmed in 2021-2022.
12. THAT monitoring of discharges covered by consents held by New Plymouth District Council in the 2022-2023 period continues at similar a level to that undertaken in the 2021-2022 period.
13. THAT monitoring of discharges from KiwiRail Holding Ltd and New Zealand Railways Corporation Ltd in the 2022-2023 period remain similar to that programmed in the 2021-2022 period.
14. THAT monitoring of discharges from Ravensdown Fertiliser Co-operative Ltd in the 2022-2023 period continue at a similar level as that undertaken in the 2021-2022 period.
15. THAT Ravensdown Fertiliser Co-operative Ltd continue to make improvements to the site to resolve non-compliance issues as per abatement notice EAC-24575.

16. THAT monitoring programme for discharges from Taranaki Sawmills Ltd in the 2022-2023 period continue at a similar level as that undertaken in the 2021-2022 period.
17. THAT monitoring of discharges from Technix Group Ltd in the 2022-2023 period continue at a similar level as that undertaken in the 2021-2022 period.
18. THAT monitoring of discharges from Waste Management NZ Ltd's site during 2022-2023 remains similar to that programmed for the 2021-2022 period.
19. THAT further investigation is undertaken in relation to a possible deleterious discharge which may be having adverse effects on downstream aquatic life as indicated by the results of both macroinvertebrate surveys undertaken during the 2021-2022 period.
20. THAT should there be issues with environmental or administrative performance with any of the consent holders in 2022-2023, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.

Glossary of common terms and abbreviations

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

ANZECC	Australia New Zealand Environment and Conservation Council.
As*	Arsenic.
Biomonitoring	Assessing the health of the environment using aquatic organisms.
BOD	Biochemical oxygen demand. A measure of the presence of degradable organic matter, taking into account the biological conversion of ammonia to nitrate.
BODF	Biochemical oxygen demand of a filtered sample.
Bund	A wall around a tank to contain its contents in the case of a leak.
CBOD	Carbonaceous biochemical oxygen demand. A measure of the presence of degradable organic matter, excluding the biological conversion of ammonia to nitrate.
COD	Chemical oxygen demand. A measure of the oxygen required to oxidise all matter in a sample by chemical reaction.
Conductivity	Conductivity, an indication of the level of dissolved salts in a sample, measured at 25°C and expressed in mS/m.
Cu*	Copper.
DO	Dissolved oxygen.
DRP	Dissolved reactive phosphorus.
DWSNZ	Drinking Water Standards New Zealand.
EEL	An environmental exposure limit (EEL) establishes the maximum concentration of an ecotoxic substance that is allowable in a particular environmental medium (for example, water, soil or sediment). This includes the deposition of a substance onto surfaces (for example via spray drift).
F	Fluoride.
FNU	Formazin nephelometric units, a measure of the turbidity of water.
Fresh	Elevated flow in a stream, such as after heavy rainfall.
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.
HC	Hydrocarbon. Also expressed as the relevant solvent e.g. C7-C9, C10-C14, C15-C36
IBC	Intermediate bulk container, a square 1000L plastic tank, generally encased in a steel cage.
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.
IPBC	Iodopropynyl Butyl Carbamate– carbamate based fungicide used for treating timber.
LOSP	Light organic solvent preservative- a class of wood treatment compounds that include PRCA, TEBA and IPBC.
L/s	Litres per second.
m ²	Square Metres.
MCI	Macroinvertebrate community index; a numerical indication of the state of biological life in a stream that takes into account the sensitivity of the taxa present to organic pollution in stony habitats.
Mixing zone	The zone below a discharge point where the discharge is not fully mixed with the receiving environment. For a stream, conventionally taken as a length equivalent to 7 times the width of the stream at the discharge point.
mS/m	Millisiemens per metre.
NH ₄	Ammonium, normally expressed in terms of the mass of nitrogen (N).
NH ₃	Unionised ammonia, normally expressed in terms of the mass of nitrogen (N).
NNN	Nitrate-nitrite nitrogen, normally expressed in terms of the mass of nitrogen (N).
NTU	Nephelometric Turbidity Unit, a measure of the turbidity of water.
O&G	Oil and grease, defined as anything that will dissolve into a particular organic solvent (e.g. hexane). May include both animal material (fats) and mineral matter (hydrocarbons).
pH	A numerical system for measuring acidity in solutions, with 7 as neutral. Numbers lower than 7 are increasingly acidic and higher than 7 are increasingly alkaline. The scale is logarithmic i.e. a change of 1 represents a ten-fold change in strength. For example, a pH of 4 is ten times more acidic than a pH of 5.
Physicochemical	Measurement of both physical properties (e.g. temperature, clarity, density) and chemical determinants (e.g. metals and nutrients) to characterise the state of an environment.
PRCA	Propiconazole- A triazole fungicide used to treat timber.
Resource consent	Refer Section 87 of the RMA. Resource consents include land use consents (refer Sections 9 and 13 of the RMA), coastal permits (Sections 12, 14 and 15), water permits (Section 14) and discharge permits (Section 15).
RMA	<i>Resource Management Act 1991</i> and including all subsequent amendments.
SS	Suspended solids.
SQMCI	Semi quantitative macroinvertebrate community index.
TEBA	Tebuconazole- A triazole fungicide used to treat timber.
Temp	Temperature, measured in °C (degrees Celsius).
Turb	Turbidity, expressed in NTU or FNU.
TP	Total Phosphorus.
Zn*	Zinc.

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

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Appendix I

Resource consents held by Companies in the Lower Waiwhakaiho River and Mangaone Stream catchments

(in alphabetical order)

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

Water abstraction permits

Section 14 of the RMA stipulates that no person may take, use, dam or divert any water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or it falls within some particular categories set out in Section 14. Permits authorising the abstraction of water are issued by the Council under Section 87(d) of the RMA.

Water discharge permits

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations. Permits authorising discharges to water are issued by the Council under Section 87(e) of the RMA.

Air discharge permits

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations. Permits authorising discharges to air are issued by the Council under Section 87(e) of the RMA.

Discharges of wastes to land

Sections 15(1)(b) and (d) of the RMA stipulate that no person may discharge any contaminant onto land if it may then enter water, or from any industrial or trade premises onto land under any circumstances, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations. Permits authorising the discharge of wastes to land are issued by the Council under Section 87(e) of the RMA.

Land use permits

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

Coastal permits

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

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

Name of
Consent Holder: AML Limited [Trading as Allied Concrete]
P O Box 3318
NEW PLYMOUTH

Consent Granted
Date: 30 July 2008

Conditions of Consent

Consent Granted: To discharge stormwater and treated wastewater from truck washing at a concrete batching plant into the Mangaone Stream in the Waiwhakaiho catchment at or about (NZTM) 1696910E-5677375N

Expiry Date: 1 June 2026

Review Date(s): June 2014, June 2020 and/or within 3 months of receiving a notification under special condition 9

Site Location: 67 Hurlstone Drive, Bell Block

Legal Description: Lot 1 DP 17583 Blk II Paritutu SD

Catchment: Waiwhakaiho

Tributary: Mangaone

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council 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. Notwithstanding any conditions within this consent, 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 maximum stormwater catchment area shall be no more than 5880 m².
3. Any above ground hazardous substances storage areas shall be bunded with drainage to the wastewater treatment system, and not directly to the stormwater catchment.
4. Concentrations of the following components shall not be exceeded in the discharge:

Component	Concentration
suspended solids	100 g/m ³
oil and grease	15 g/m ³

This condition shall apply prior to the entry of the stormwater and wastewater 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 50 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 Mangaone Stream:
 - 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. After allowing for reasonable mixing, within a mixing zone extending 50 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to an increase in pH of greater than 0.5, or a pH outside the range of 6.0 to 8.0 within the receiving waters of the Mangaone Stream.
7. The consent holder shall maintain, and adhere to, a contingency plan detailing measures and procedures to be undertaken to prevent spillage or accidental discharge of contaminants not licensed by this consent, and measures to avoid, remedy or mitigate the environmental effects of such a spillage or discharge.
8. Within three months of the granting of this consent, the consent holder shall prepare and maintain an operation and 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, unloading and storage of materials;
 - b) maintenance of conveyance systems;
 - c) general housekeeping; and
 - d) management of the wastewater treatment system.
9. The consent holder shall notify the Chief Executive, Taranaki Regional Council, prior to making any changes in the processes undertaken at the site, or the chemicals used or stored on site, which could alter the nature of the discharge. 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.
10. 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 2014 and/or June 2020; and/or
 - b) within 3 months of receiving a notification under special condition 9 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 30 July 2008

For and on behalf of
Taranaki Regional Council

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: Devon 662 Limited Partnership
PO Box 11057
Palm Beach
Papamoa 3151

Decision Date (Review): 6 August 2020

Commencement Date 6 August 2020 (Granted Date: 3 May 2017)
(Review):

Conditions of Consent

Consent Granted: To discharge stormwater from a fertiliser storage depot onto
and into land and into the Mangaone Stream and into the
Waiwhakaiho River

Expiry Date: 1 June 2026

Review Date(s): June 2021, June 2022, June 2023, June 2024, June 2025
and in accordance with special condition 11

Site Location: Corner of Devon Road & Smart Road, Glen Avon

Grid Reference (NZTM) 1696554E-5676954N *discharge point 1 (Mangaone Stream)*
1696112E-5677289N *discharge point 2 (Waiwhakaiho River)*

Catchment: Waiwhakaiho

Tributary: Mangaone

*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 a catchment area not exceeding 7.5 hectares located on land within the yellow boundary as indicated in Appendix 1 of this consent.
3. Constituents of the discharge shall meet the standards shown in the following table.

<u>Constituent</u>	<u>Standard</u>
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
dissolved reactive phosphorus	Concentration not greater than 30 gm ⁻³

This condition shall apply at sampling sites IND004002 (NZTM 1696241E-5677096N) and site STW002003 (NZTM1696554E-5676954N).

4. From 1 April 2021 the consent holder shall ensure that there is always clear and safe all-weather access to a point where the discharge can be sampled to check compliance with condition 3 above.
5. After allowing for reasonable mixing, within a mixing zone extending; 10 metres downstream of sampling site STW002003 and 200 metres downstream of site IND004002's final discharge point (at NZTM 1696277E-56773387N), each 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; and
 - f) an unionised ammonia concentration exceeding 0.025 g/m³.

Consent 3865-4.1

6. 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.
7. The site shall be operated in accordance with a 'Management Plan' prepared by the consent holder and approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity. The plan shall detail how the site is to be managed to minimise the contaminants that become entrained in the stormwater and shall include as minimum:
 - a) the loading and unloading of materials;
 - b) general housekeeping; and
 - c) management of any stormwater treatment systems.

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 maintain groundwater bores listed in the table below in a manner that allows access and sampling.

TRC site code	Easting	Northing
GND1217	1696177	5677046
GND1218	1696238	5677091
GND2346	1696356	5677108
GND0517	1696412	5677149
GND0518	1696297	5676965

9. The consent holder shall maintain reasonable and safe foot access to the following stormwater sampling sites.

TRC site code	Easting	Northing
STW002003	1696554	1696554
IND004002	5676954	5676954

10. 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, the chemicals used or stored on site, or any development and/or remediation 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.

Consent 3865-4.1

11. 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) annually during the month of June until 2025;
- b) within 3 months of receiving a notification under special condition 10 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 6 August 2020

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management



Appendix 1. Area showing stormwater catchment area permitted by this consent

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

Name of
Consent Holder: Dialog Fitzroy Limited
Private Bag 2053
New Plymouth 4342

Decision Date: 12 March 2015

Commencement Date: 12 March 2015

Conditions of Consent

Consent Granted: To discharge stormwater from an industrial site into the
Waiwhakaiho River

Expiry Date: 1 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 10

Site Location: 691 Devon Road, Bell Block

Legal Description: Lot 2 DP 470783 (Discharge source & site)

Grid Reference (NZTM) 1696451E-5677694N

Catchment: Waiwhakaiho

*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 a catchment area not exceeding 3.3 ha.

Note: For the purpose of this condition the catchment area defined in this condition is a total for resource consent 0021-4.0 and 9853-2.0.

3. There shall be no discharge of contaminants from hydrotesting activities into the stormwater network.
4. The consent holder shall notify the Chief Executive, Taranaki Regional Council in writing at least 24 hours prior to undertaking any hydrotesting activities outside of the workshop. Notification shall include the location and date of the proposed discharge, and shall be emailed to worknotification@trc.govt.nz.
5. 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.

6. After allowing for reasonable mixing, within a mixing zone extending 50 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.
7. The consent holder shall maintain and regularly update a 'Contingency Plan' that details measures and procedures to be undertaken to prevent spillage or any discharge of contaminants not authorised by this consent. The plan shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity as being adequate to avoid, remedy or mitigate the environmental effects of such an event.

8. The site shall be operated in accordance with a 'Stormwater 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 will be managed to achieve compliance with the conditions of this consent and shall include but not be limited to:
 - a) Identification of sources of contaminants,
 - b) Methods that will be practised to ensure contaminants entering stormwater is at a practical minimum,
 - c) Methods that will be practised to ensure contaminants from hydrotesting activities will be prevented from entering stormwater;
 - d) the loading and unloading of materials;
 - e) maintenance of conveyance systems;
 - f) general housekeeping; and
 - g) management of any interceptor system.
9. The consent holder shall notify the Chief Executive, Taranaki Regional Council, prior to making any changes to the processes or operations undertaken at the site, or the chemicals used or stored on site that could alter the nature of the discharge. Any such change shall then only occur following receipt of any necessary approval under the Resource Management Act. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to consents@trc.govt.nz.
10. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review:
 - a) during the month of June 2020 and/or June 2026 and/or
 - b) within 3 months of receiving a notification under special condition 9 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.

Transferred at Stratford on 30 August 2019

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management

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

Name of
Consent Holder: Dialog Fitzroy Limited
Private Bag 2053
New Plymouth 4342

Decision Date: 12 March 2015

Commencement Date: 12 March 2015

Conditions of Consent

Consent Granted: To discharge stormwater from an industrial site into the
Waiwhakaiho River

Expiry Date: 1 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 10

Site Location: 691 Devon Road, Bell Block

Legal Description: Lot 2 DP 470783 (Discharge source & site)

Grid Reference (NZTM) 1696577E-5677800N

Catchment: Waiwhakaiho

*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 a catchment area not exceeding 3.3 ha.

Note: For the purpose of this condition the catchment area defined in this condition is a total for resource consent 0021-4.0 and 9853-2.0.

3. There shall be no discharge of contaminants from hydrotesting activities into the stormwater network.
4. The consent holder shall notify the Chief Executive, Taranaki Regional Council in writing at least 24 hours prior to undertaking any hydrotesting activities outside of the workshop. Notification shall include the location and date of the proposed discharge, and shall be emailed to worknotification@trc.govt.nz.
5. 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.

6. After allowing for reasonable mixing, within a mixing zone extending 50 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.
7. The consent holder shall maintain and regularly update a 'Contingency Plan' that details measures and procedures to be undertaken to prevent spillage or any discharge of contaminants not authorised by this consent. The plan shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity as being adequate to avoid, remedy or mitigate the environmental effects of such an event.

8. The site shall be operated in accordance with a 'Stormwater 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 will be managed to achieve compliance with the conditions of this consent and shall include but not be limited to:
 - a) Identification of sources of contaminants,
 - b) Methods that will be practised to ensure contaminants entering stormwater is at a practical minimum,
 - c) Methods that will be practised to ensure contaminants from hydrotesting activities will be prevented from entering stormwater;
 - d) the loading and unloading of materials;
 - e) maintenance of conveyance systems;
 - f) general housekeeping; and
 - g) management of any interceptor system.
9. The consent holder shall notify the Chief Executive, Taranaki Regional Council, prior to making any changes to the processes or operations undertaken at the site, or the chemicals used or stored on site that could alter the nature of the discharge. Any such change shall then only occur following receipt of any necessary approval under the Resource Management Act. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to consents@trc.govt.nz.
10. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review:
 - a) during the month of June 2020 and/or June 2026 and/or
 - b) within 3 months of receiving a notification under special condition 9 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.

Transferred at Stratford on 30 August 2019

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management

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

Name of
Consent Holder: Downer EDI Works Limited
PO Box 272
New Plymouth 4340

Decision Date: 20 May 2015

Commencement Date: 20 May 2015

Conditions of Consent

Consent Granted: To discharge treated stormwater and minor amounts of treated air scrubber waste water from an asphalt manufacturing plant onto land and into the Mangaone Stream

Expiry Date: 1 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special condition 8

Site Location: Rifle Range Road, New Plymouth

Legal Description: Sec 4 SO 436795 (Discharge source & site)

Grid Reference (NZTM) 1696712E-5677949N

Catchment: Waiwhakaiho

Tributary: Mangaone

*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 a catchment area not exceeding 6.5 Ha.
3. Constituents of the discharge shall meet the standards shown in the following table.

<u>Constituent</u>	<u>Standard</u>
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

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.

4. After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to any or all of the following effects in the receiving water:
 - a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - b) any conspicuous change in the colour or visual clarity;
 - c) any emission of objectionable odour;
 - d) the rendering of fresh water unsuitable for consumption by farm animals;
 - e) any significant adverse effects on aquatic life.
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 shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity.
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 a minimum:
 - a) the loading and unloading of materials;
 - b) general housekeeping; and
 - c) management of the treatment systems.

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. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to consents@trc.govt.nz.
8. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review:
 - a) during the month of June 2020 and/or June 2026; 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 20 May 2015

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: Envirowaste Services Limited
Private Bag 92810
Penrose
Auckland 1642

Decision Date: 6 May 2015

Commencement Date: 6 May 2015

Conditions of Consent

Consent Granted: To discharge stormwater from an industrial site into the
Puremu Stream and an unnamed tributary of the Mangaone
Stream

Expiry Date: 1 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 9

Site Location: 31 Colson Road, New Plymouth

Legal Description: Lot 1 DP 3582, Pt Sections 144 and 145 Hua District, Pt Lot 1 DP
2210, Pt Purakau A2 2B, Pt Lot DP 8654, Pt Sections 19 Blk VI
Paritutu SD (Discharge source & site)

Grid Reference (NZTM) 1696639E-5676673N (Discharge point 1)
1696993E-5676758N (Discharge point 2)

Catchment: Waiwhakaiho

Tributary: Puremu
Mangaone

*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 4.93 ha and as shown in the attached plan.
3. Constituents of the discharge shall meet the standards shown in the following table.

<u>Constituent</u>	<u>Standard</u>
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 100 gm ⁻³
oil and grease	Concentration not greater than 15 gm ⁻³

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

4. At the point at which the discharge enters the Mangaone Stream, 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 shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity.
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) general housekeeping; and
 - c) management of the stormwater system.

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. 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. This consent shall lapse on 30 June 2020, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
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 2020 and/or June 2026 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 6 May 2015

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management

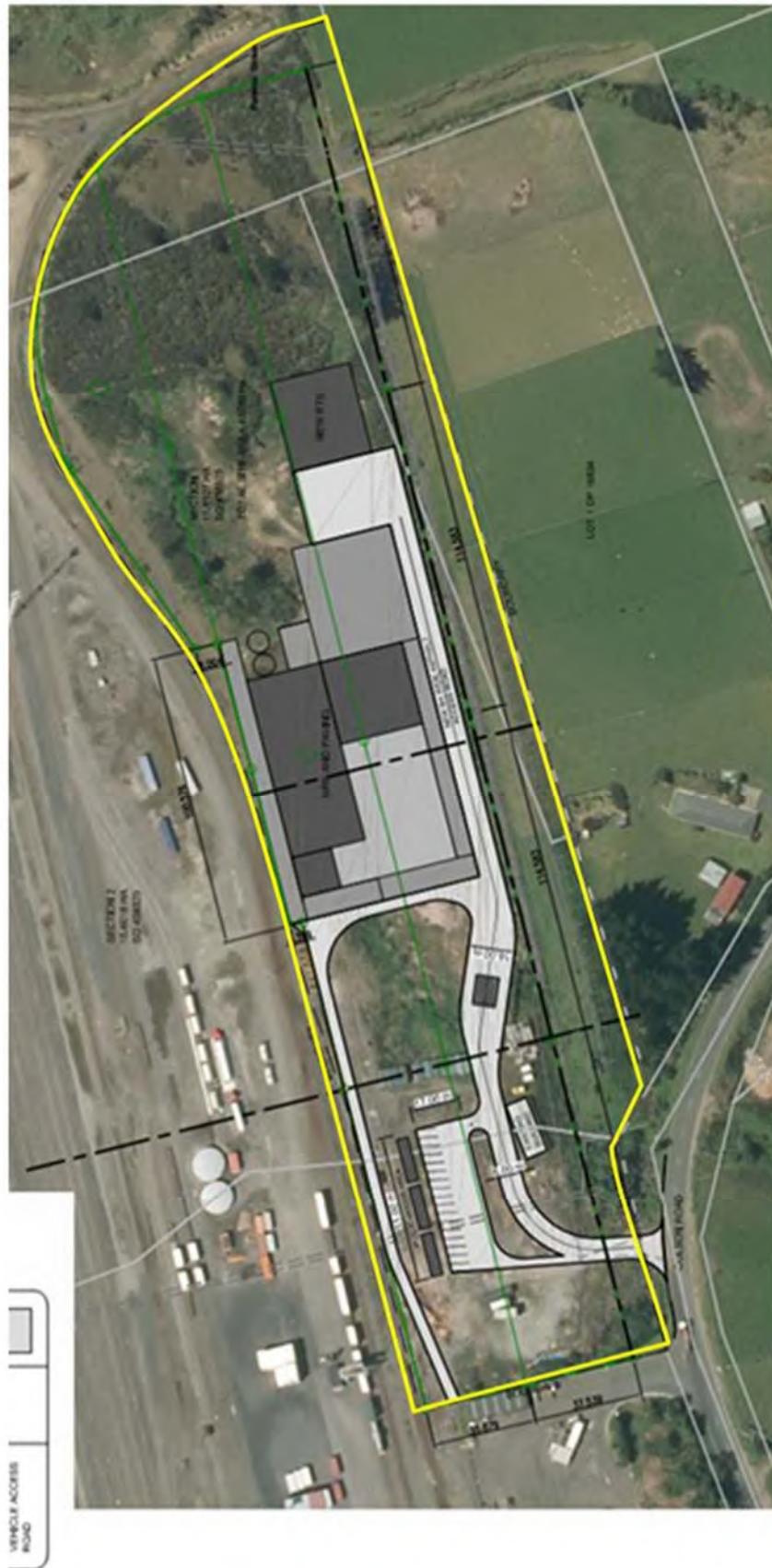


Figure 1 - Stormwater catchment area permitted by this consent (in yellow)

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

Name of
Consent Holder: Firth Industries Limited
PO Box 3122
New Plymouth 4341

Decision Date: 21 July 2015

Commencement Date: 21 July 2015

Conditions of Consent

Consent Granted: To discharge stormwater and treated wastewater into the
Waiwhakaiho River

Expiry Date: 1 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 10

Site Location: Clemow Road, Fitzroy

Legal Description: Lot 1 DP 10146 Lot 2 DP 15134 & Sec 219 Hua Dist
(Discharge source & site)

Grid Reference (NZTM) 1696258E-5677519N

Catchment: Waiwhakaiho

*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 1.618 Ha.
3. All stormwater shall be directed for treatment through the stormwater treatment system for discharge in accordance with the special conditions of this permit.
4. Constituents of the discharge shall meet the standards shown in the following table.

Constituent	Standard
suspended solids	Concentration not greater than 100 gm ⁻³
oil and grease	Concentration not greater than 15 gm ⁻³

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

5. After allowing for reasonable mixing, within a mixing zone extending 50 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) many significant adverse effects on aquatic life;
 - f) a pH of less than 6.0 or greater than 9.0;
 - g) a increase of pH greater than 0.5.
6. 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 shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity.

Consent 0392-4.0

7. By 21 October 2015 the consent holder shall prepare an updated 'Management Plan' to be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity. The plan shall detail how the site is to be managed to minimise the contaminants that become entrained in the stormwater and shall include as minimum:
 - a) the loading and unloading of materials;
 - b) general housekeeping;
 - c) design drawings and specifications for proposed upgrades to the wastewater treatment system and site improvements as set out in pre-design documents submitted in support of application 0392-4.0 by Firth Industries Limited on 3rd and 4th March 2015;
 - d) a schedule of time frames for the construction and commissioning of proposed wastewater treatment system and site improvements;
 - e) a schedule of inspections and maintenance of wastewater and stormwater treatment systems; and
 - f) any extra silt controls and stormwater management to be undertaken during construction of the upgrades.
8. By 22 February 2016 the consent holder shall undertake site improvements and upgrades to the wastewater treatment system as set out in the management plan required by condition seven. After 22 February 2016 wastewater shall not be included in the stormwater discharge.
9. 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, site improvement construction, and or change in treatment systems. 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.
10. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review:
 - a) during the month of June 2020 and/or June 2026;
 - b) within 3 months of receiving a notification under special condition 9 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 21 July 2015

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: Freight & Bulk Transport Limited
PO Box 472
New Plymouth 4340

Decision Date: 5 June 2015

Commencement Date: 5 June 2015

Conditions of Consent

Consent Granted: To discharge stormwater onto and into land and into the
Mangaone Stream

Expiry Date: 1 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 9

Site Location: 69 Katere Road, New Plymouth

Legal Description: Lot 1 DP 13577 Lot 2 DP 17884 & Sec 184 Hua Dist Blk VI
& Paritutu SD & Lot 2 DP 9418 Pt Lot 1 DP 9418
(Discharge source & site)

Grid Reference (NZTM) 1697103E – 5677252N
1697061E – 5677209N
1697033E – 5677144N

Catchment: Waiwhakaiho

Tributary: Mangaone

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

<u>Constituent</u>	<u>Standard</u>
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
carbonaceous biochemical oxygen demand	Concentration not greater than 15 gm ⁻³

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

4. After allowing for reasonable mixing, within a mixing zone extending 30 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 Mangaone Stream:
 - 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; and
 - f) an unionised ammonia concentration of greater than 0.025 g/m³-N.
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 shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity.

6. The site shall be operated in accordance with an up to date 'Management Plan' prepared by the consent holder and approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity. The plan shall detail how the site is to be managed to minimise the contaminants that become entrained in the stormwater and shall include as minimum:
- a) the loading and unloading of materials;
 - b) general housekeeping;
 - c) management of the treatment systems; and
 - d) timeframes for any proposed improvements.

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. 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. This consent shall lapse on 30 June 2020 unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
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 2020 and/or June 2026
 - 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 5 June 2015

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: KiwiRail Holdings Limited
 PO Box 593
 Wellington 6140

Decision Date: 31 March 2017

Commencement Date: 31 March 2017

Conditions of Consent

Consent Granted: To discharge stormwater into the Waiwhakaiho River

Expiry Date: 1 June 2026

Review Date(s): June 2020 and in accordance with special condition 8

Site Location: Smart Road, New Plymouth

Grid Reference (NZTM) 1696090E-5677290N

Catchment: Waiwhakaiho

*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 4.8 hectares.
3. Constituents in 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
Ammoniacal nitrogen	Concentration not greater than 3 gm ⁻³
Dissolved reactive phosphate	Concentration not greater than 1 gm ⁻³

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

4. That after allowing for reasonable mixing, within a mixing zone extending 100 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to any of the following effects in the receiving waters:
 - 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, habitats or ecology.
5. That the consent holder shall maintain a contingency plan, to the satisfaction of the Chief Executive, Taranaki Regional Council, outlining measures and procedures to be undertaken to prevent spillage or accidental discharge of contaminants, and the procedures to be carried out should such a spillage occur.

6. The consent holder shall operate 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 leased property;
 - c) general housekeeping; and
 - d) management of the interceptor system.

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 that could alter the nature of the discharge. Any such change shall then only occur following receipt of any necessary approval under the Resource Management Act 1991. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to consents@trc.govt.nz.
8. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review:
- a) during the month of June 2020;
 - 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 31 March 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: New Zealand Railways Corporation
P O Box 593
WELLINGTON 6140

Consent Granted
Date: 31 July 2009

Conditions of Consent

Consent Granted: To discharge stormwater from the Smart Road Rail Terminal into an unnamed tributary of the Mangaone Stream, and into the Mangaone Stream in the Waiwhakaiho catchment at or about (NZTM) 1696529E-5676921N

Expiry Date: 1 June 2026

Review Date(s): June 2014, June 2020

Site Location: Smart Road, New Plymouth

Legal Description: Pt Sec 144 & 145 Hua Dist, Pt Lot 1 DP 2210 & Pt Lot 2 DP 8654

Catchment: Waiwhakaiho

Tributary: Mangaone

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council 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. Notwithstanding any other condition of this consent, 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 11.28ha.
3. By 30 September 2009, where goods are on site in excess of 3 days, any above ground hazardous substances storage areas shall be bunded with drainage to sumps, or discharged via a three stage interceptor and stop valve such that the flow can be isolated in the event of a spill.
4. Constituents of the discharge shall meet the standards shown in the following table.

<u>Constituent</u>	<u>Standard</u>
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 100 gm ⁻³
Oil and Grease	Concentration not greater than 15 gm ⁻³

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

5. After allowing for reasonable mixing, within a mixing zone extending to the Katere Road Bridge (NZTM 1696444E-5676696N) 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.

Consent 1735-3

6. The consent holder shall maintain a contingency plan, which shall be reviewed at not more than 2 yearly intervals. 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. By 30 September 2009, the consent holder shall prepare and 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;and shall be reviewed at not more than 2 yearly intervals.
8. This consent shall lapse on 30 September 2014, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
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 during the month of June 2014 and/or June 2020, 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 31 July 2009

For and on behalf of
Taranaki Regional Council

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: New Plymouth District Council
Private Bag 2025
NEW PLYMOUTH 4342

Consent Granted
Date: 10 June 2008

Conditions of Consent

Consent Granted: To discharge stormwater from the Katere and Waiwhakaiho industrial areas into the Mangaone Stream via multiple outfalls between Egmont Road and the confluence with the Waiwhakaiho River at or about (NZTM) 1697233E-5677145N, 1697032E-5677145N, 1696882E-5677087N, 1696734E-5676990N, 1696545E-5677175N, 1696755E-5677622N, 1696757E-5677671N, 1696771E-5677957N, and 1696777E-5677965N

Expiry Date: 1 June 2026

Review Date(s): June 2010, June 2014, June 2020

Site Location: Katere Road, New Plymouth

Legal Description: Various

Catchment: Waiwhakaiho

Tributary: Mangaone

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

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council 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 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 consent holder shall prevent, where possible, or mitigate any erosion occurring as a result of the exercise of this consent.
- 3. After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to any or all of the following effects in the Mangaone Stream:
 - 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.

Consent 1275-3

4. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2010 and/or June 2014 and/or June 2020, 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 10 June 2008

For and on behalf of
Taranaki Regional Council

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: New Plymouth District Council
Private Bag 2025
New Plymouth 4342

Decision Date: 16 March 2016

Commencement Date: 16 March 2016

Conditions of Consent

Consent Granted: To discharge leachate from a former landfill site into groundwater, adjacent to the Waiwhakaiho River

Expiry Date: 1 June 2032

Review Date(s): June 2020, June 2026

Site Location: Devon Road, Constance Street/Vickers Road,
New Plymouth

Grid Reference (NZTM) 1696236E-5677324N

Catchment: Waiwhakaiho

*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 discharge shall not cause groundwater to breach the standards shown in the following table.

<u>Constituent</u>	<u>Standard</u>
Total Ammonia	Concentration not greater than 25 mg/L
Dissolved reactive phosphorus	Concentration not greater than 0.065 mg/L
pH	Within the range 6.5 to 8.5

2. 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 Waiwhakaiho downstream of the sampling site WKH000925:
 - a. the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - b. any conspicuous change in the colour or visual clarity;
 - c. any emission of objectionable odour;
 - d. the rendering of fresh water unsuitable for consumption by farm animals;
 - e. any significant adverse effects on aquatic life;
 - f. a concentration of unionised ammonia greater than 0.0025 g/m³ -N.
3. The consent holder shall ensure that the three piezometers situated at the Bewley Road site are maintained for monitoring purposes (sites GND0548, GND0555, GND0556).
4. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2020 and/or June 2026, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 16 March 2016

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: New Plymouth District Council
Private Bag 2025
NEW PLYMOUTH 4342

Consent Granted 10 June 2008
Date:

Conditions of Consent

Consent Granted: To discharge stormwater from the Waiwhakaiho industrial
area into the Waiwhakaiho River via multiple outfalls
between the State Highway 3 bridge and the confluence
with the Mangaone Stream at or about (NZTM)
1695807E-5676977N, 1695902E-5677235N,
1696113E-5677288N, 1696233E-5677323N,
1696377E-5677616N, 1696472E-5677706N,
1696539E-5677767N, 1696573E-5677800N,
1696611E-5677837N, and 1696683E-5677904N

Expiry Date: 1 June 2026

Review Date(s): June 2010, June 2014, June 2020

Site Location: Rifle Range Road, New Plymouth

Legal Description: Various

Catchment: Waiwhakaiho

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

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council 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 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 consent holder shall prevent, where possible, or mitigate any erosion occurring as a result of the exercise of this consent.
- 3. After allowing for reasonable mixing, within a mixing zone extending 50 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 Waiwhakaiho River:
 - 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.

Consent 5163-2

4. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2010 and/or June 2014 and/or June 2020, 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 10 June 2008

For and on behalf of
Taranaki Regional Council

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: Ravensdown Limited
PO Box 16921
Hornby
Christchurch 8441

Decision Date (Review): 6 August 2020

Commencement Date 6 August 2020 (Granted Date: 2 February 2018)
(Review):

Conditions of Consent

Consent Granted: To discharge stormwater from a fertiliser storage site onto
and into land and into the Mangaone Stream

Expiry Date: 1 June 2032

Review Date(s): June 2026 and in accordance with special condition 9

Site Location: Katere Road, Avon, New Plymouth

Grid Reference (NZTM) 1697034E-5677049N

Catchment: Waiwhakaiho

Tributary: Mangaone

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

General condition

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

Special conditions

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.
2. The stormwater discharged shall only be from the area shown on the plan attached as Appendix 1.
3. Constituents of any discharges to the Mangaone Stream or MacLeod's Drain that arise as a result of the exercise of this consent shall meet the standards shown in the following table.

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

4. From 1 April 2021 the consent holder shall ensure that there is always clear and safe all-weather access to a point where the discharge can be sampled to check compliance with condition 3 above.
5. After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to any or all of the following effects in the receiving water:
 - a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - b) any conspicuous change in the colour or visual clarity;
 - c) any emission of objectionable odour;
 - d) the rendering of fresh water unsuitable for consumption by farm animals;
 - e) any significant adverse effects on aquatic life;
 - f) a rise in dissolved carbonaceous biochemical oxygen of greater than 2.0 g/m³; and
 - g) un-ionised ammonia exceeding 0.025 g/m³.
6. Within 3 months of the consent being granted the consent holder shall submit and regularly update a 'Contingency Plan' that details measures and procedures that will be undertaken to prevent, and to avoid environmental effects from, a spillage or any discharge of contaminants not authorised by this consent. The plan and any amended versions shall be provided to the Chief Executive of the Taranaki Regional Council.

7. Within 3 months of the consent being granted the site shall be operated in accordance with a 'Management Plan' prepared by the consent holder and approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity. The plan shall detail how the site is to be managed to minimise the contaminants that become entrained in the stormwater and shall include as minimum:

- a) the loading and unloading of materials;
- b) general housekeeping; and
- c) management of the interceptor systems and trade waste catchment areas.

Note: 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, 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.
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 2020 and/or June 2026;
 - b) within 3 months of receiving a notification under special condition 8 above; and/or
 - c) for the purposes of reviewing the discharge standards, contaminant limits and sampling points once development on the site has been completed.

for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 6 August 2020

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management

Appendix 1: Stormwater discharged shall be from the area shown in yellow



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 Sawmills Limited
PO Box 7145
Fitzroy
New Plymouth 4341

Decision Date 12 March 2021

Commencement Date 12 March 2021

Conditions of Consent

Consent Granted: To discharge stormwater from a timber treatment site into the Mangaone Stream

Expiry Date: 1 June 2038

Review Date(s): June 2026, June 2032

Site Location: 47 & 53 Katere Road, Waiwhakaiho

Grid Reference (NZTM) 1696875E-5677077N

Catchment: Waiwhakaiho

Tributary: Mangaone

*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 exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of the application. In the case of any contradiction between the documentation submitted in support of this application and the conditions of this consent, the conditions of this consent shall prevail.
3. The maximum stormwater catchment area shall be no more than 2.3 Hectares.
4. Constituents of the discharge shall meet the standards shown in the following table.

<u>Constituent</u>	<u>Standard</u>
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
Arsenic	Concentration not greater than 0.24g/m ³
Copper (dissolved)	Concentration not greater than 0.088 g/m ³
Chromium	Concentration not greater than 0.4 g/m ³
Tributyltin	Concentration not greater than 0.0046 g/m ³
Zinc (dissolved)	Concentration not greater than 0.64 g/m ³

These standards 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. The consent holder shall ensure that there is always clear and safe all-weather access to a point where the discharge can be sampled to check compliance with condition 6 above.
6. After allowing for reasonable mixing, within a mixing zone extending 30 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 waters of the Mangaone Stream:
 - 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.

Consent 3491-3.0

7. After allowing for reasonable mixing within a mixing zone extending 30 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to a filtered carbonaceous 5 day biochemical oxygen demand of more than 2 g/m³ an increase of greater than 0.5 pH increment, or a pH outside the range of 6.0 to 9.0 within the receiving waters of the Mangaone Stream.
8. The consent holder shall maintain and regularly review a 'Contingency Plan' that details measures and procedures that will be undertaken in the event of a spillage or any discharge of contaminants not authorised by this consent. The plan shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity as being adequate to avoid, remedy or mitigate the environmental effects of such an event
9. The site shall be operated in accordance with a 'Management Plan'. The plan shall detail how the site is managed to minimise the contaminants that become entrained in the stormwater, and generally ensure that the conditions of this consent will be met. It shall include as minimum:
 - a) the loading and unloading of materials;
 - b) maintenance of conveyance systems;
 - c) general housekeeping; and
 - d) management of the stormwater system.The Management Plan shall be made available to a Taranaki Regional Council Enforcement Officer upon request.
10. 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. Unless the Chief Executive advises that an alternative method is required this notice shall be served by completing and submitting the 'Notification of work' form on the Council's website (<http://bit.ly/TRCWorkNotificationForm>).
11. 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 2026 and/or June 2032, 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 12 March 2021

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: Technix Group Limited
Private Bag 2222
New Plymouth 4342

Decision Date: 24 October 2014

Commencement Date: 24 October 2014

Conditions of Consent

Consent Granted: To discharge stormwater from an industrial site into the
Waiwhakaiho River

Expiry Date: 01 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 9

Site Location: 691 Devon Road, Bell Block

Legal Description: Lot 2 DP 20360 (Discharge source & site)

Grid Reference (NZTM) 1696623E-5677733N

Catchment: Waiwhakaiho

*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 a catchment area not exceeding 2.2 ha.
3. After 31 December 2015 there shall be no discharge from the truckwash to the stormwater network.
4. Constituents of the discharge shall meet the standards shown in the following table.

<u>Constituent</u>	<u>Standard</u>
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 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 50 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 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 shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity.

7. Within three months of the granting of this consent, the site shall be operated in accordance with a 'Stormwater 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 will be managed to achieve compliance with the conditions of this consent and shall include as a minimum:
- a) identification of sources of contaminants,
 - b) methods that will be practised to ensure contaminants entering stormwater is at a practical minimum,
 - c) the loading and unloading of materials;
 - d) maintenance of conveyance systems;
 - e) general housekeeping; and
 - f) management of the interceptor system.
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 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.
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 2020 and/or 2026 and/or
 - b) within 3 months of receiving a notification under special condition 8 above and/or
 - c) within 3 months of receiving the Stormwater Management Plan 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 24 October 2014

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: Technix Group Limited
Private Bag 2222
New Plymouth 4342

Decision Date: 24 October 2014

Commencement Date: 24 October 2014

Conditions of Consent

Consent Granted: To discharge stormwater from an industrial site into the
Waiwhakaiho River

Expiry Date: 01 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 8

Site Location: 691 Devon Road, Bell Block

Legal Description: Lot 1 DP 20360 (Discharge source & site)

Grid Reference (NZTM) 1696449E-5677553N

Catchment: Waiwhakaiho

*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 a catchment area not exceeding 1.8 ha.
3. Constituents of the discharge shall meet the standards shown in the following table.

<u>Constituent</u>	<u>Standard</u>
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 treated 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 50 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.
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 shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity.

6. Within three months of the granting of this consent, the site shall be operated in accordance with a 'Stormwater 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 will be managed to achieve compliance with the conditions of this consent and shall include as a minimum:
 - a) identification of sources of contaminants,
 - b) methods that will be practised to ensure contaminants entering stormwater is at a practical minimum,
 - c) the loading and unloading of materials;
 - d) maintenance of conveyance systems;
 - e) general housekeeping; and
 - f) management of the interceptor system.
7. The consent holder shall notify the Chief Executive, Taranaki Regional Council, prior to making any changes to the processes or operations undertaken at the site, or the chemicals used or stored on site that could alter the nature of the discharge. Any such change shall then only occur following receipt of any necessary approval under the Resource Management Act 1991. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to consents@trc.govt.nz.
8. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review:
 - a) during the month of June 2020 and/or 2026 and/or
 - b) within 3 months of receiving a notification under special condition 7 above and/or
 - c) within 3 months of receiving the Stormwater Management Plan under special condition 6 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 24 October 2014

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: Technix Group Limited
Private Bag 2222
New Plymouth 4342

Decision Date: 24 October 2014

Commencement Date: 24 October 2014

Conditions of Consent

Consent Granted: To discharge stormwater from an industrial site into the
Mangaone Stream

Expiry Date: 01 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 8

Site Location: 691 Devon Road, Bell Block

Legal Description: Lot 1 DP 20360 (Discharge source & site)

Grid Reference (NZTM) 1696748E-5677890N

Catchment: Waiwhakaiho

Tributary: Mangaone

*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 a catchment area not exceeding 1.3 ha.
3. Constituents of the discharge shall meet the standards shown in the following table.

<u>Constituent</u>	<u>Standard</u>
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 treated 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, 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 shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity.

6. Within three months of the granting of this consent, the site shall be operated in accordance with a 'Stormwater 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 will be managed to achieve compliance with the conditions of this consent and shall include as a minimum:
 - a) identification of sources of contaminants,
 - b) methods that will be practised to ensure contaminants entering stormwater is at a practical minimum,
 - c) the loading and unloading of materials;
 - d) maintenance of conveyance systems;
 - e) general housekeeping; and
 - f) management of the interceptor system.
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. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to consents@trc.govt.nz.
8. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review:
 - a) during the month of June 2020 and/or 2026 and/or
 - b) within 3 months of receiving a notification under special condition 7 above and/or
 - c) within 3 months of receiving the Stormwater Management Plan under special condition 6 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 24 October 2014

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: Waste Management NZ Limited
PO Box 7128
New Plymouth 4341

Decision Date: 27 October 2017

Commencement Date: 27 October 2017

Conditions of Consent

Consent Granted: To discharge stormwater from a waste depot into an unnamed tributary of the Mangaone Stream

Expiry Date: 1 June 2032

Review Date(s): June 2018, June 2019 and June 2020 and 3-yearly thereafter, and in accordance with special condition 9

Site Location: 86 Katere Road, New Plymouth

Grid Reference (NZTM) 1697274E-5677140N

Catchment: Waiwhakaiho

Tributary: Mangaone

*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. From 15 January 2018:
 - a) no leachate overflow from the refuse storage area or any other part of the site shall enter the unnamed tributary of the Mangaone Stream; and
 - b) a sediment interceptor, such as a sump, shall be installed downstream of existing sump A1.
3. The stormwater discharged shall only be from the area shown on the plan attached as Appendix 1.
4. Constituents of the discharge sampled at WM4 (shown in the plan attached as Appendix 2 and at approximate grid reference 1697214E-5677143N) shall meet the standards shown in the following table.

Constituent	Standard
pH	Within the range 6.0 to 9.0
total recoverable oil and grease	Concentration not greater than 15 gm ⁻³
CBOD (carbonaceous biochemical oxygen demand)	20 gm ⁻³

5. After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to any or all of the following effects in the receiving water:
 - a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - b) any conspicuous change in the colour or visual clarity;
 - c) any emission of objectionable odour;
 - d) the rendering of fresh water unsuitable for consumption by farm animals;
 - e) any significant adverse effects on aquatic life;
 - f) unionised ammonia to exceed 0.025 gm⁻³; and
 - g) filtered carbonaceous biochemical oxygen demand to exceed 2.0.
6. Within 3 months of the consent being granted the consent holder shall submit and regularly update a 'Contingency Plan' that details measures and procedures that will be undertaken to prevent, and to avoid environmental effects from, a spillage or any discharge of contaminants not authorised by this consent. The plan and any amended versions shall be provided to the Chief Executive of the Taranaki Regional Council.

7. Within 3 months of the consent being granted the site shall be operated in accordance with a 'Management Plan' prepared by the consent holder and approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity. The plan shall detail how the site is to be managed to minimise the contaminants that become entrained in the stormwater and shall include as minimum:

- a) the loading and unloading of materials;
- b) general housekeeping; and
- c) management of the interceptor systems and trade waste catchment areas.

Note: 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, 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.
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 2018, 2019 and 2020 and 3-yearly thereafter;
 - b) within 3 months of receiving a notification under special condition 8 above; and/or
 - c) for the purposes of reviewing the discharge standards, contaminant limits and sampling points once development on the site has been completed.

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 27 October 2017

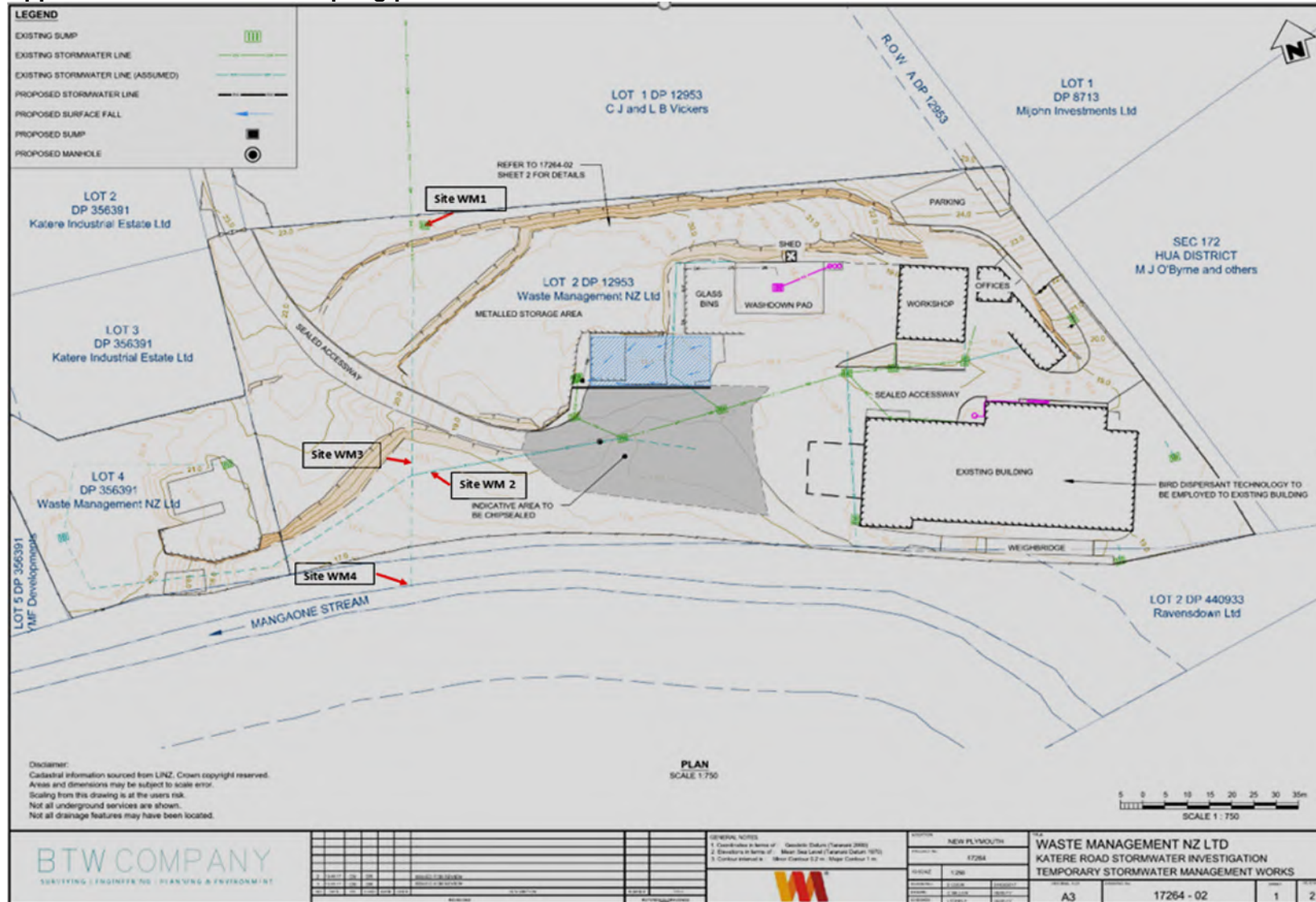
For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management

Appendix 1: Area of stormwater discharge shown in blue.



Appendix 2: Location of sampling points



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.