

Waverley Sawmills Limited
Monitoring Programme
Annual Report
2016-2017

Technical Report 2017-42

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Executive summary

Waverley Sawmills Limited (the Company) operates a wood waste disposal site located on Monk Road at Waverley, in the Whenuakura catchment, and a former wood waste disposal site located on Village Settlement Road at Waverley, in the Moumahaki catchment. The Monk Road site is consented to receive untreated wood waste only, and the Village Settlement Road site is consented to receive treated and untreated wood waste. All the wood waste discharged at both sites originates from the Company's sawmill in Waverley. This report for the period July 2016 to June 2017 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess the Company's environmental and consent compliance performance during the period under review. The report also details the results of the monitoring undertaken and assesses the environmental effects of the Company's activities. This is the eleventh compliance monitoring report on the Company's activities at the Monk Road and Village Settlement Road sites.

The Company holds a total of four resource consents relating to its wood waste disposal sites, which include a total of 34 conditions setting out the requirements that the Company must satisfy. The Company holds one land use consent for the purpose of piping a stream, two consents to discharge wood waste onto and into land, and one consent to discharge leachate and stormwater to land and water.

Overall the Company demonstrated a poor level of environmental performance with their resource consents.

The Council's monitoring programme for the period under review included four inspections, 15 water samples, and five soil/wood waste samples collected for physicochemical analysis.

At the Monk Road site wood waste samples indicated that treated timber containing copper had been discharged at the site. The Company removed the copper containing sawdust from the Monk Road disposal site. The Company also subsequently tightened up procedures around when and where treatment is carried out at the timber treatment plant site, and supervision of truck drivers when loading and unloading material. This was the second year in a row during which a discharge of this nature occurred. As the discharge contravened the abatement notice issued in the 2015-2016 year, as well as the conditions of the consent, an infringement fine was issued. It was also found that leachate at the Monk Road site still has potential to cause effects, and elevations in the concentration of contaminants were noted. The biological oxygen demand and dissolved arsenic concentrations below the mixing zone exceeded consent limits in both a routine compliance monitoring and follow-up sample close to the end of the year under review. The Company was abated to comply with the conditions of the consent.

The Management plan provided for the Monk Road site indicated that the cap would not comply with the conditions of the consent. The Company was advised of this, and a revised plan is still to be received.

At the Village Settlement Road discharge site, remediation undertaken during the 2013-2014 year has remained effective and stable during the 2016-2017 year, the site was stable with good vegetative cover. Soil sample results complied with relevant consent conditions.

During the year, the Company demonstrated a poor level of environmental performance with the resource consents and an improvement is required in their administrative performance as defined in Section 1.1.4 of the report.

For reference, in the 2016-2017 year, 74 % of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 21 % demonstrated a good level of environmental performance and compliance with their consents.

In terms of overall environmental and compliance performance by the consent holder, historically the Company has generally been compliant, however, the Company's performance has deteriorated in the last two years.

This report includes recommendations for the 2017-2018 year, including a recommendation relating to an optional review of consent 6528-2.

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1 Introduction

1.1 Compliance monitoring programme reports and the Resource Management Act 1991

1.1.1 Introduction

This report is for the period July 2016 to June 2017 by the Taranaki Regional Council (the Council) on the monitoring programme associated with resource consents held by Waverley Sawmills Limited (the Company). The Company operates two landfill (monofill – wood waste) sites. One site is situated on Monk Road at Waverley, in the Whenuakura catchment (consents 6413-2, 6412-1 and 7342-2). The other site, now closed, is on Village Settlement Road in the Moumahaki catchment (consent 6528-2).

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

1.1.2 Structure of this report

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

- consent compliance monitoring under the RMA and the Council's obligations;
- the Council's approach to monitoring sites through annual programmes;
- the resource consents held by the Company in the Whenuakura and Moumahaki catchments;
- the nature of the monitoring programme in place for the period under review, and
- a description of the activities and operations conducted at each of the two wood waste disposal sites.

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

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

Section 4 presents recommendations to be implemented in the 2017-2018 monitoring year.

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

1.1.3 The Resource Management Act 1991 and monitoring

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

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

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

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

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

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

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

Environmental Performance

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

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

For example:

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

Improvement required: Likely or actual adverse effects of activities on the receiving environment were more than minor, but not substantial. There were some issues noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent

minor non-compliant activity could elevate a minor issue to this level. Abatement notices and infringement notices may have been issued in respect of effects.

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

Administrative performance

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

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

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

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

For reference, in the 2016-2017 year, 74% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 21% demonstrated a good level of environmental performance and compliance with their consents.

1.2 Process description

In 2002, the Company was in the process of carrying out due diligence with regard to potential purchase of the sawmill. During this process the new owners noted that the sites to which their mill wood waste was being discharged did not have resource consents to cover this activity. While the Company viewed the issue of consenting the disposal site strictly a matter for the disposal contractor, they considered it good environmental governance to make it their business, and become involved.

As a result, the Company applied for and were granted consent to install a culvert at the Monk Road site and a consent to discharge untreated wood waste to the site. They were later granted a consent to discharge treated wood waste to a site on Village Settlement Road.

As a result of ongoing leachate generation from historical filling at the Monk Road site, the Company applied for, and were granted, a consent to discharge stormwater and leachate to land and water in August 2008. This consent was renewed in 2010.

Wood waste is generated at the sawmill at various stages of the timber processing operation, from debarking through to gauging. In the course of applying for resource consent to discharge treated wood waste, the Company identified ways to reduce the quantity of treated wood waste produced. One of these measures included machining timber products before they were treated with preservative whenever possible. Such alterations to the production process have significantly reduced the quantity of treated wood waste for disposal.

More recently (May 2015), a new \$1.6m wood waste boiler was commissioned. This boiler is fuelled sawdust and takes the 15,000m³ per annum of sawdust previously trucked to Monk Road. Any additional sawdust required is sourced from another sawmill within the Taranaki region. During the year under review, the Company continued to investigate alternative uses of other waste timber products from their site.

The site at Monk Road is a gully in the upper reaches of a catchment predominated by dairy farm land. Immediately above the discharge area is a small farm dam. The Company installed a culvert at the site that piped the tributary from this dam around and downstream of the discharge area, effectively bypassing the discharge area. The aim of this work was to reduce the quantity of water entering the discharge area and coming into contact with the wood waste discharged therein.

After this development was completed, and prior to the purchase of the sawmill by the current owners, a spring was discovered under the filled area. It was found that the spring was dissolving and mobilising contaminants from the fill, that is, generating leachate. The leachate was found to be discharging into the unnamed tributary of the Kohi Stream. The presence of copper, chromium and arsenic in the leachate indicated that treated wood waste had been disposed of at the site in the past. A consent to permit this leachate discharge was obtained by the Company in August 2008 and the consent was renewed in October 2010.

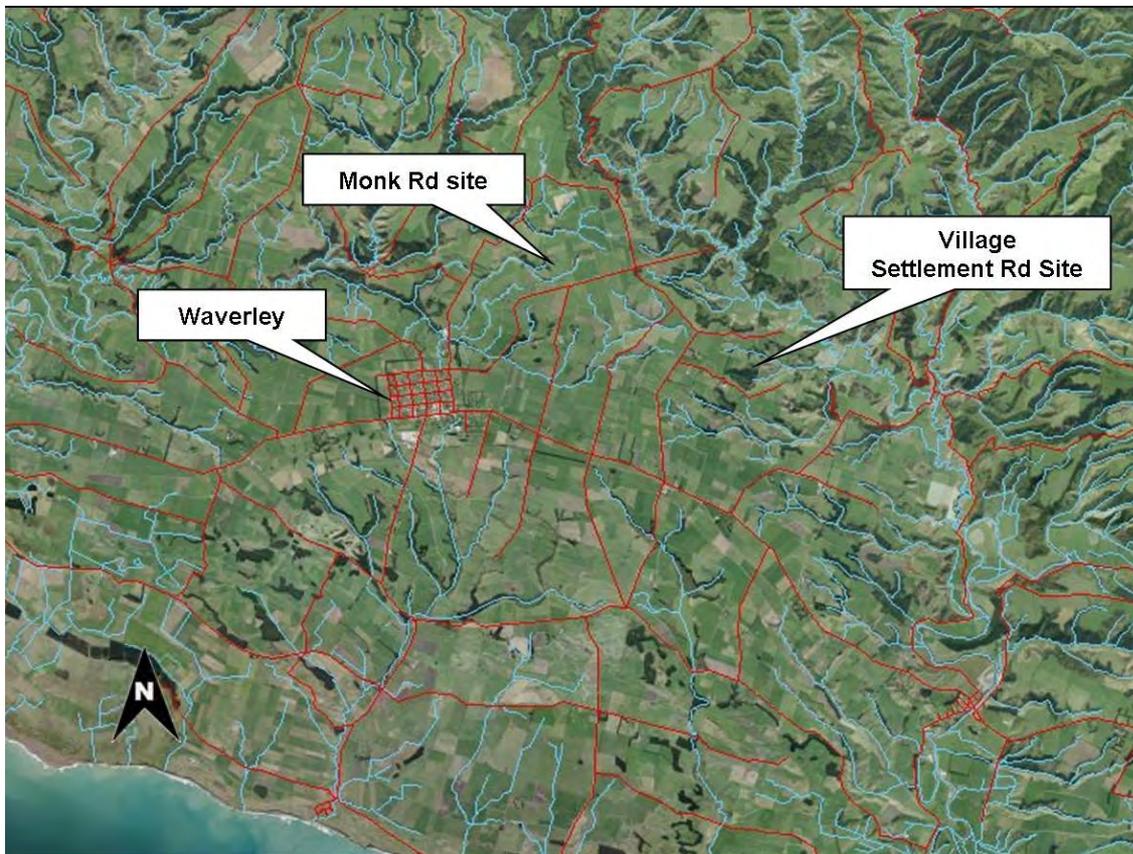


Figure 1 Waverley Sawmills discharge sites

The discharge site on Village Settlement Road was chosen because it is elevated and therefore dry. The site is small in size compared to the Monk Road site and while it is situated close to an unnamed tributary at the north west end of the site, the surface gradient and contours dictate that surface water from the site flows in a south easterly direction, away from the water body. The Company is now at the point that it produces no treated wood waste as all machining is done prior to treatment and the Company's Village Settlement Road site was closed in June 2014. Site remediation work was undertaken in the 2013-2014 year to ensure that

the consent soil component concentrations for the cap and surface soils down gradient of the fill area were met. This was discussed in the 2013-2014 Annual Report.



Photo 1 Waverley Sawmills discharge site at Village Settlement Road, Waverley – post closure



Photo 2 Waverley Sawmills Limited discharge site at Monk Road, Waverley

1.3 Resource consents

The Company holds four resource consents the details of which are summarised in the table below and outlined in sections 1.3.1 to 1.3.3.

Table 1 Resource consents held by Waverley Sawmills Limited

Consent number	Purpose	Granted	Review	Expires
6412-1	To install and maintain a culvert (Monk Road)	Mar 2005	-	June 2022
6413-2	To discharge untreated wood waste (Monk Road)	May 2012	June 2022	June 2028
7342-2	To discharge leachate (Monk Road)	Oct 2010	June 2022	June 2028
6528-2	To discharge treated wood waste (Village settlement Road)	July 2012	June 2018	June 2022

1.3.1 Discharge to water

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.

The Company holds discharge permit **7342-2** to cover the discharge of leachate and stormwater from a sawmill waste disposal site to water and into land where it may enter in an unnamed tributary of the Kohi Stream. This permit was originally issued by the Council on 7 October 2010 under Section 87(e) of the RMA, with changes made on 4 March 2014, reducing the amount of sampling required at the site. The consent is due to expire on 1 June 2028.

The permit has four special conditions.

Condition 1 requires that the consent holder adopt the best practicable option to prevent or minimise effects.

Conditions 2 and 3 limit certain parameters in the unnamed tributary of the Kohi Stream and prohibit certain effects beyond reasonable mixing.

Condition 4 is a review condition.

The permit is attached to this report in Appendix I.

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

1.3.2 Discharges of wastes to land

Sections 15(1)(b) and (d) of the RMA Act stipulates that no person may discharge any contaminant onto or into 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.

The Company held discharge permit **6413-2.0** to cover the discharge of wood waste from sawmilling operations onto and into land. This permit was issued by the Council on 31 May 2012 under Section 87(e) of the RMA. It was due to expire on 1 June 2028.

The original consent permitted only the disposal of untreated sawdust, shavings and bark. A varied consent was granted on 2 February 2016 amending special condition 2 to provide for the disposal of additional untreated wood wastes and furnace ash (**6413-2.1**). The expiry date of the varied consent remains 1 June 2028.

Condition 1 relates to the provision of a management plan for the site.

Condition 2 specifies that only the following untreated materials be discharged to the site:

Untreated wood shavings, sawdust, bark, slovens and sawmill waste, morbark chipper slovens, chunks and fines, batten plant and processing shed off-cuts, broken fillet sticks, furnace ash, and yard sweepings.

Condition 3 requires that the discharges only be made to a certain area.

Condition 4 requires that the consent holder be the sole source of materials discharged.

Condition 5 requires that discharged materials do not enter water.

Condition 6 requires the consent holder to adopt the best practicable option to prevent or minimise effects when exercising the consent.

Condition 7 specifies the requirements for capping and reinstatement.

Condition 8 relates to review of the consent.

The Company holds discharge permit **6528-2** to cover the discharge of wood waste from sawmilling operations onto and into land. This permit was issued by the Council on 31 July 2012 under Section 87(e) of the RMA. This consent expires on 1 June 2022.

Condition 1 requires the consent holder to adopt the best practicable option to prevent or minimise effects when exercising the consent.

Condition 2 relates to the provision of a management plan for the site.

Condition 3 specifies that only treated and untreated shavings sawdust and bark can be discharged to the site.

Condition 4 specifies the area in which the discharges may occur.

Condition 5 states that the consent holder shall be the sole supplier of waste to the site and special condition 6 deals with the control of stormwater on the site.

Conditions 7, 10 and 11 relate to capping requirements.

Conditions 8 and 9 set out maximum component concentration limits allowed in the soil at certain areas of the site.

Conditions 12 and 13 require the consent holder to notify Council of certain events.

Conditions 14 and 15 set out post closure monitoring requirements, and condition 16 is a review condition.

The permits are attached to this report in Appendix I.

This summary of consent conditions may not reflect the full requirements of each condition. The consent conditions in full can be found in the resource consents which are appended to this report.

1.3.3 Land use permit

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.

The Company holds land use permit **6412-1** to culvert an unnamed tributary of the Kohi Stream for land improvement purposes associated with cleanfill activity. The Council issued this consent on 4 March 2005 as a resource consent under Section 87(e) of the RMA. It is due to expire on 1 June 2022.

Condition 1 requires the consent holder to adopt the best practicable option to prevent or minimise the discharge of silt or other contaminants into or onto the streambed and to avoid or minimise the disturbance of the streambed and any adverse effects on water quality.

Condition 2 states that the exercise of the consent should be undertaken in accordance with documents submitted with the application.

Condition 3 requires the consent holder to notify the Council 48 hours before and after works occur on site.

Condition 4 requires that the exercise of the consent shall not cause ponding on upstream properties.

Condition 5 relates to the lapse of the consent after 5 years if not exercised.

Condition 6 deals with review of the consent.

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

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

1.4 Monitoring programme

1.4.1 Introduction

Section 35 of the RMA sets obligations upon the Council to gather information, monitor and conduct research on the exercise of resource consents within the Taranaki region. The Council is also required to assess the effects arising from the exercising of these consents and report upon them.

The Council may therefore make and record measurements of physical and chemical parameters, take samples for analysis, carry out surveys and inspections, conduct investigations, and seek information from consent holders.

The monitoring programme for the Company's wood waste disposal sites consisted of three primary components.

1.4.2 Programme liaison and management

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

- ongoing liaison with resource consent holders over consent conditions and their interpretation and application;
- in discussion over monitoring requirements;
- preparation for any consent reviews, renewals or new consent applications;
- advice on the Council's environmental management strategies and content of regional plans; and
- consultation on associated matters.

1.4.3 Site inspections

Three routine compliance monitoring inspections were carried out at the Monk Road site and the Village Settlement Road site during the monitoring period. With regard to consent for the disposal of wood waste onto and into land at both sites, the main points of interest were site processes with potential or actual discharges to receiving watercourses, including contaminated stormwater. Air inspections focused on plant processes with associated actual and potential emission sources and characteristics, including potential odour, dust, noxious or offensive emissions. Sources of data being collected by the Company were identified and accessed, so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council.

An additional site visit was made to the Monk Road site in follow-up to the wood waste sampling undertaken on 20 September 2016, which showed that there was sawdust and/or shavings from treated timber present on site.

1.4.4 Chemical sampling

The Council undertook sampling at both discharge sites. These included leachate samples, surface water samples, wood waste samples and soil samples.

2 Results

2.1 Inspections

2.1.1 Monk Road Site

20 September 2016

It was noted that a large amount of sawdust had been disposed on the downstream end of the site. It was noted that all the material appeared to be untreated due to there being no obvious green colouration. However, a composite wood waste sample was taken (Table 4) to confirm the absence of Tanalith E treated timber, which does not result in any significant colouration of the waste. The piles consisted predominantly of sawdust that had been disposed of recently (Photo 3). There was no non-wood waste material observed on site at the time of the inspection.

The enclosed discharge drain had been extended to the underground culvert at Monk Road and an open manhole had been installed.



Photo 3 Sawdust disposal at the Monk Road site, 20 September 2016

20 October 2016

Analysis of the wood waste sample collected at the previous inspection confirmed the presence of treated wood waste, which is in breach of consent conditions. An inspection of the Monk Road site was carried out following works that had been undertaken to remove unconsented material from the site. Photos were taken and a composite sample was collected for analysis (Table 4).

23 January 2017

The inspection was carried out during overcast weather conditions after a period of heavy rain. Sawdust continued to be disposed on the downstream, (southern end) of the site. Composite wood waste sampling is scheduled for once per year, and this routine sampling had been undertaken on 20 September 2016. All the raw sawdust material appeared to be untreated, therefore no sawdust samples were collected on this occasion.

18 May 2017

The contaminated discharge manhole had been cleaned out and extended to allow sawdust backfill. The sawdust area appeared to be free of treated timber and other unauthorised materials. Areas of the fill had been capped and vegetated and there was evidence that this area has been grazed by cattle. It was noted that the current cap would need to be improved once filling at the site was completed.

2.1.2 Village Settlement Road

20 September 2016

There were no concerns found in relation to the old sawdust site at the time of inspection. There was pasture growing on the covered sawdust area that appeared healthy, and there was no evidence of slumping. A composited soil sample was collected at site SOL000180 (down-gradient to the south, on the adjoining farm), as per the recommendation contained in the 2015-2016 report, due to the slightly elevated concentration of copper found in the composite soil sample at this location at the end of that monitoring year.

23 January 2017

There were no issues noted at the old sawdust site. The pasture growing on the covered sawdust area appeared healthy, with no slumping or leachate seepage evident.

25 May 2017

There were no issues noted at the old sawdust site. Soil samples were collected from inside (SOL000179) and outside (SOL0001800 the site boundary).

2.2 Soil, wood waste, and water monitoring

2.2.1 Monk Rd

The discharge and receiving waters upstream and downstream of the site are scheduled to be sampled at each of the three routine monitoring inspections. The sampling sites are shown in Figure 2.

2.2.1.1 Results of discharge monitoring

IND001055 was previously located in an open drain below the fill site, which is fed by a spring that originates (and is culverted) under the fill. At the inspection on 20 September 2017, it was found that the remainder of the drain had been piped, with a manhole installed downstream of the remaining area to be filled. Three samples of the discharge were collected during the monitoring period, all of which were obtained from the pipe outlet within the manhole. The results of this sampling are presented in Table 2.



Figure 2 Monk Road sampling sites, Waverley

Table 2 Water quality analysis of samples taken from the discharge drain below Waverley Sawmills Ltd's wood waste discharge site at Monk Road

Parameter	Unit	IND001055		
		20 Sep 2016	23 Jan 2017	18 May 2017
Dissolved arsenic	g/m ³	1.67	1.12	0.013
BODCF	g/m ³	697	290	12
Conductivity	mS/m	85.2	71.0	17.6
Dissolved chromium	g/m ³	0.38	0.25	<0.03
Dissolved copper	g/m ³	0.03	<0.01	<0.01
pH	pH	5.5	5.8	6.5
Temperature	Deg C	23.6	24.0	13.4

BODCF= filtered carbonaceous biochemical oxygen demand

2.2.1.2 Results of receiving environment monitoring

Scheduled water samples were collected on three occasions from an unnamed tributary of the Kohi Stream upstream (KHI000100) and downstream (KHI000130) of the consented mixing zone. The sites used for sampling are shown in Figure 2.

Table 3 Water quality analysis of samples taken from upstream (KOI000100) and downstream (KOI000130) monitoring sites at Waverley Sawmills Ltd's wood waste discharge site at Monk Road

Date	Site	Dissolved arsenic g/m ³	BODCF g/m ³	Condy mS/m	Dissolved chromium g/m ³	Dissolved copper g/m ³	pH	Temp Deg. C
Consent limits at KOI000130		0.1	3.0	-	0.1	0.01	-	-
20 Sep 2016	Upstream	0.002	<0.5	17.4	<0.03	<0.001	6.8	12.7
	Downstream	0.034	2.0	32.6	0.03	0.001	7.2	12.5
23 Jan 2017	Upstream	0.002	0.7	15.0	<0.03	<0.001	6.5	17.0
	Downstream	0.02	0.6	23.2	<0.03	0.001	7.1	15.7
18 May 2017	Upstream	0.001	<0.5	16.4	<0.03	0.002	6.6	12.8
	Downstream	0.11	61	28.0	0.06	0.004	6.4	14.3

During the period under review it was found that the spring water at the source (site IND001055) generally continued to show higher than usual levels of dissolved arsenic, chromium and copper, and BODCF when compared to 2008 to 2013 as shown in Figure 3, Figure 4, Figure 5, and Figure 6.

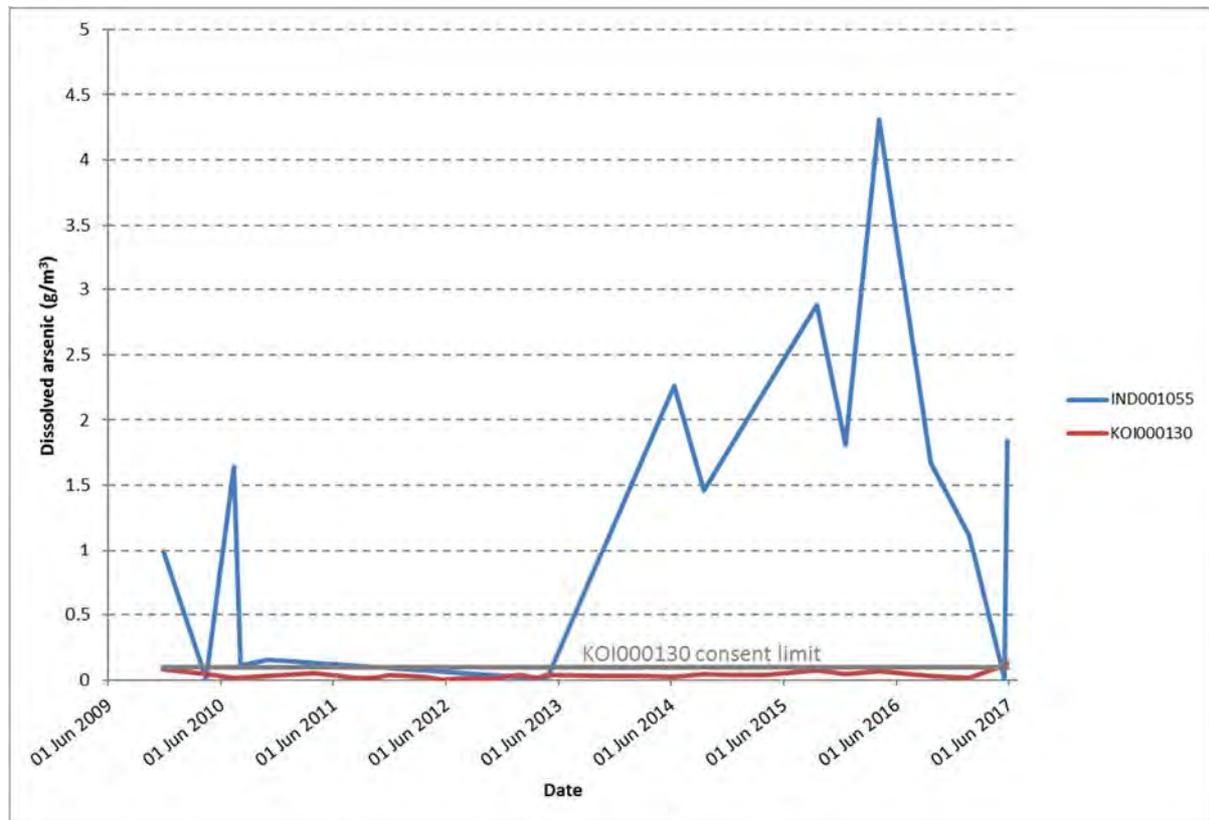


Figure 3 Graph showing recent increases in dissolved arsenic at site IND001055

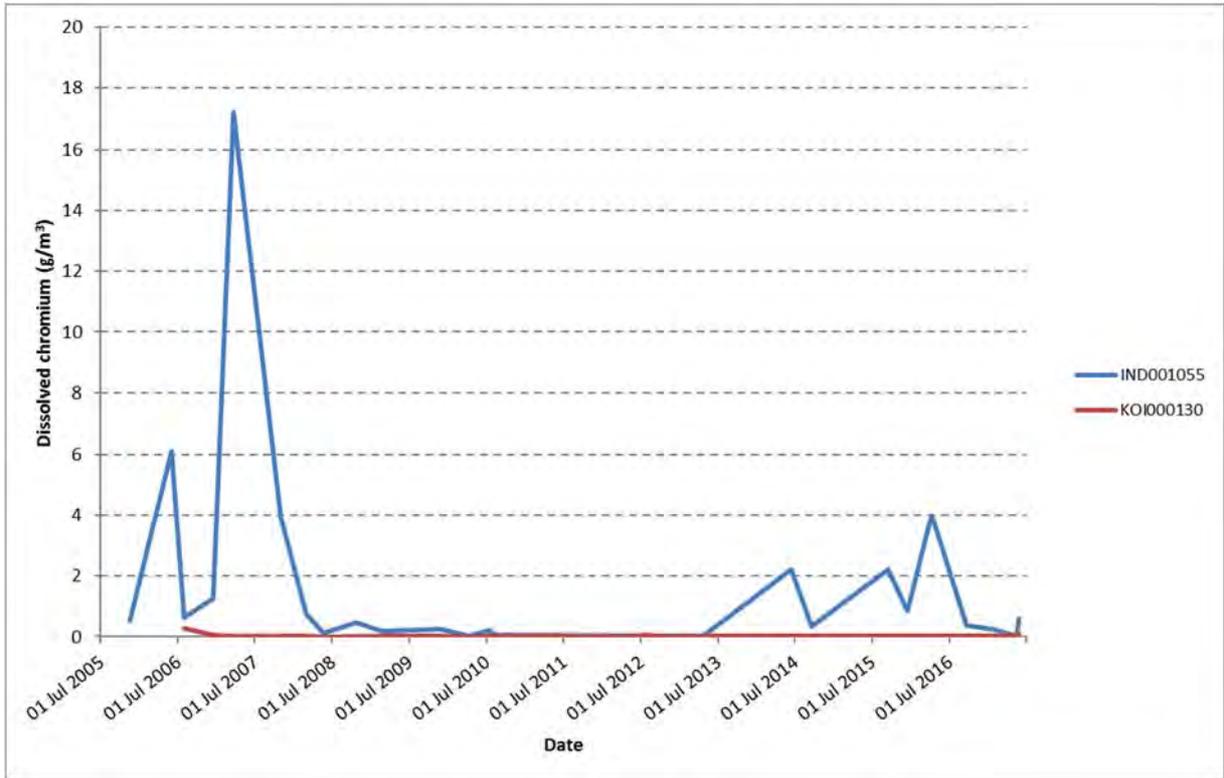


Figure 4 Graph showing recent increases in dissolved chromium at site IND001055

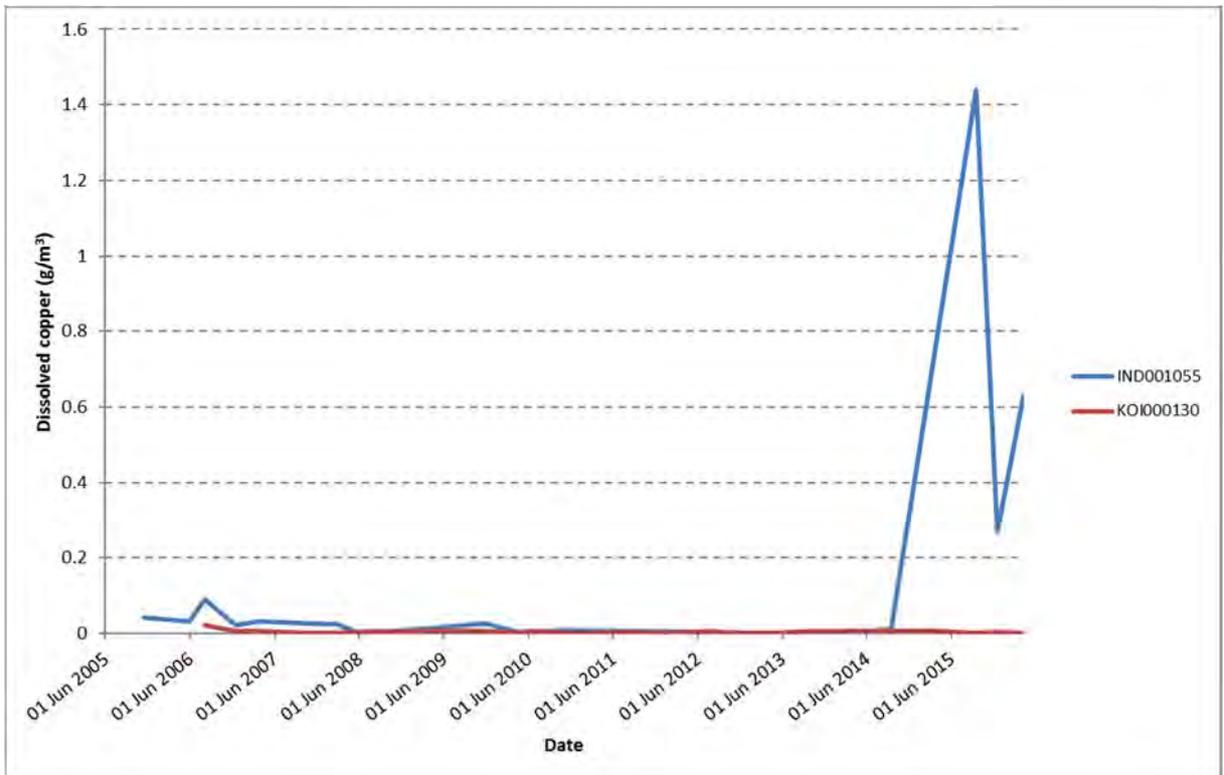


Figure 5 Graph showing recent increase in dissolved copper at site IND001055

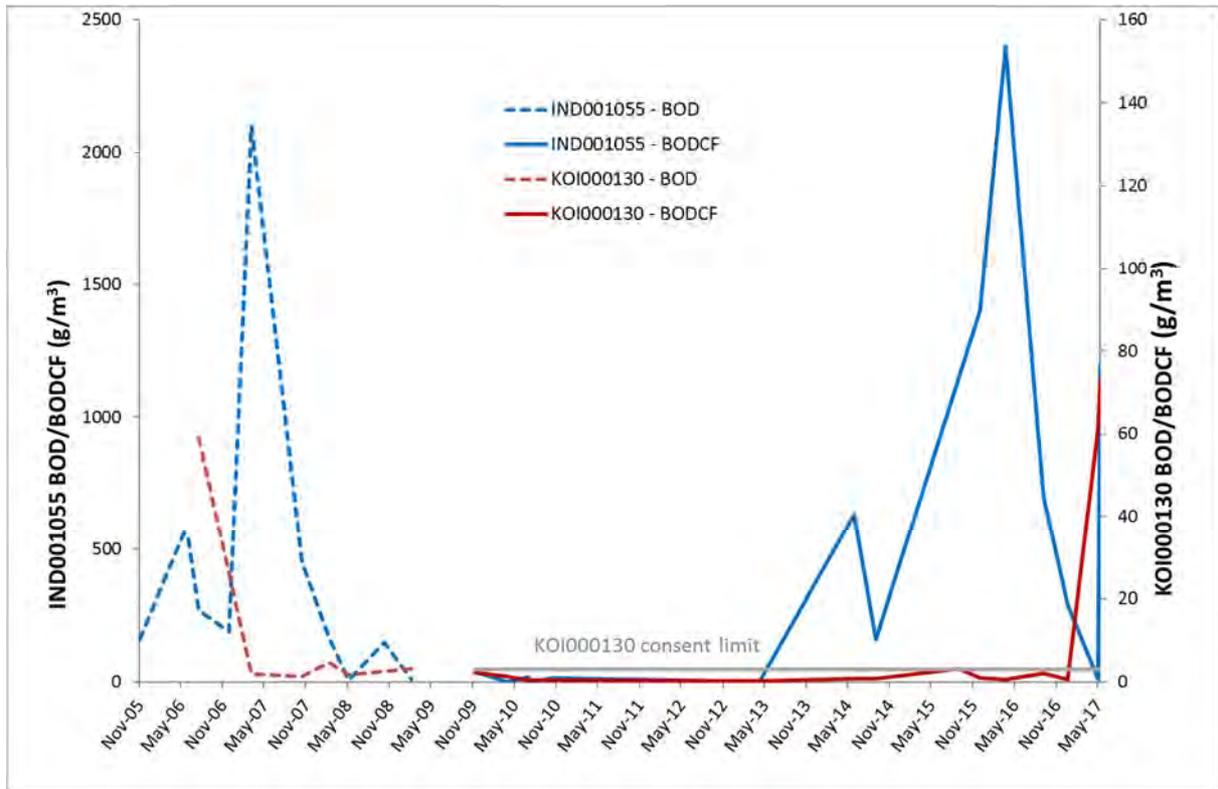


Figure 6 Graph showing recent increase in BOD at site IND001055 and KOI000130

Since the massive spike in contaminant loads in 2007 was noted, the levels of contaminants in this spring water had reduced and remain relatively consistent. This trend came to an end in the 2013-2014 year, when levels of BOD, copper, chrome and arsenic all increased. Since then, and during the period under review, these parameters have remained elevated. This indicates that the nature of the discharge has changed and should continue to be monitored.

It is also noted that the pH of the discharge from the wood waste disposal area has decreased (Figure 7), resulting in the discharge/spring water sampled at IND001055 becoming more acidic. The combination of the elevated temperature at this site (Figure 8) and its more acidic pH is likely to be the cause of the mobilisation of metals from treated timber wood waste that was thought to have been disposed of at the site under previous management. This was prior to consent being sought by the current consent holder.



Figure 7 Graph showing pH of the discharge at site IND001055



Figure 8 Graph showing the temperatures at site IND001055

Notwithstanding the increases in contaminant loads within the discharge, after mixing with the unnamed tributary downstream of the sampling site and passage through the wetland, the discharge at the compliance point (site KOI000130), was generally within the specified limits given in the consent conditions. The exception to this was an exceedance of BODCF and dissolved arsenic in the receiving water sample (KHI000130) collected on 18 May 2017. This was recorded as an unauthorised incident. Follow-up samples were collected at six sites on 25 May 2017 and the results of these along with the outcomes of the incident investigation are presented in Section 2.3.

2.2.1.3 Sampling of discharged material

Wood waste sampling was undertaken at Monk Road on 20 September 2016. Sub-samples were taken from five areas at random places and at random depths in the piles of wood waste located above the fill area. These were then composited and analysed for copper, chromium, arsenic and boron (CCAB). The results are given in Table 4.

Table 4 Results of CCAB analysis of wood waste samples

Parameter mg/kg dry weight	20 September 2016	20 October 2016
Total recoverable arsenic	25	<5
Total recoverable Boron	55	<50
Total recoverable chromium	36	<5
Total recoverable copper	470	36

The results of the sampling undertaken on 20 September 2016 indicated that there was no CCAB treated wood waste in the fill area. However, the results did show the presence of copper. This was logged on Council's incident register. The material was identified as copper azole based (Tanalith E) treated material, which was then removed from the site. A follow-up sample collected on 20 October 2016 showed that the material containing copper had been removed from the site. The details of the investigation and remedial actions are discussed Section 2.3.

2.2.2 Village Settlement Road Site

Soil samples were taken from the capped areas, on virgin ground down-gradient of the landfill footprint and from the neighbouring property. The sampling sites are shown in Figure 9 and the results of the soil analysis are given in the following tables.

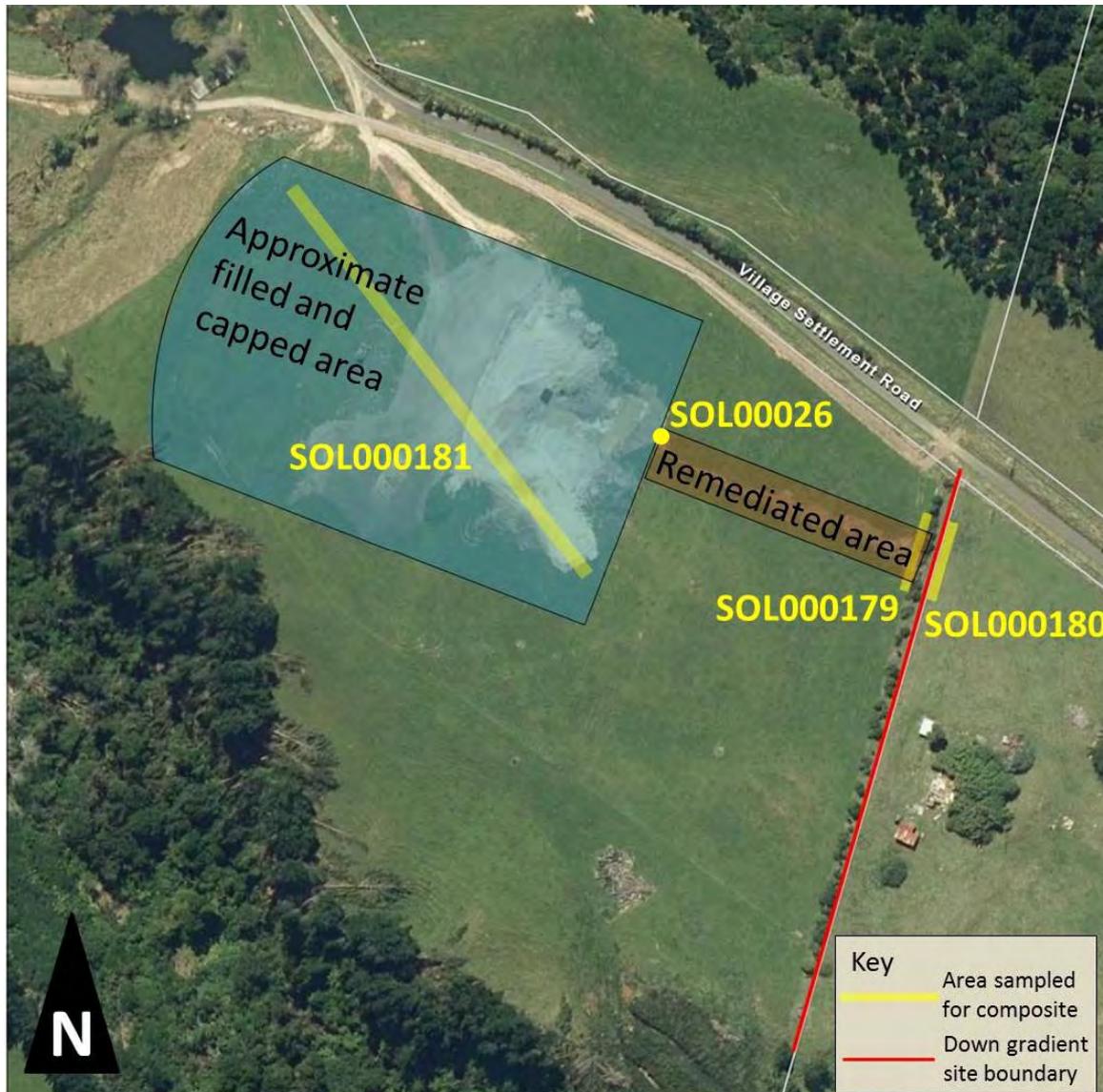


Figure 9 Aerial view of the discharge site and sampling sites at Waverley Sawmills Limited's Village Settlement Road site

2.2.2.1 Outside landfill footprint – site SOL000179

On 25 May 2017, cores were taken across a transect running parallel to and about 3 m inside the eastern boundary fence. These cores were made into a composite sample and analysed for CCAB, as consent 6528-2 contains limits for these components and require the area to be remediated should CCAB levels exceed those limits once filling operations have been completed.

Sample results (given in Table 5 below) show the component concentrations in the soil inside the down gradient boundary complied with the post closure limits contained in consent 6528-2.

Table 5 Results of soil sampling at site SOL000179, Village Settlement Road inside site boundary

Parameter	Units	25 May 2017	6528-2 consent limit (post-closure)
Arsenic	mg/kg dry weight	14	38
Boron		<20	160
Chromium		22	76
Copper		43	130

2.2.2.2 Neighbouring property-site SOL000180

Fifteen cores were taken across a transect running parallel five metres from the southern boundary fence. These cores were made into a composite sample and analysed for CCAB contaminants. An additional composite sample was collected in September 2016 as recommended in the 2015-2016 report following the marginal consent exceedance found late in that year. The results, given in Table 6 below, showed that this area was compliant with consent conditions in regards to CCAB post closure limits set out by the consent.

Table 6 Results of soil sampling at site SOL000180 Village Settlement Road beyond site boundary (5m below Southern boundary fence)

Parameter	Units	20 September 2016	25 May 2017	6528-2 consent limit (post-closure)
Arsenic	mg/kg dry weight	9	8	30
Boron		<20	<20	20
Chromium		19	22	76
Copper		38	39	42

2.3 Investigations, interventions, and incidents

The monitoring programme for the year was based on what was considered to be an appropriate level of monitoring, review of data, and liaison with the Company. During the year matters may arise which require additional activity by the Council, for example provision of advice and information, or investigation of potential or actual causes of non-compliance or failure to maintain good practices. A pro-active approach that in the first instance avoids issues occurring is favoured.

The Council operates and maintains a register of all complaints or reported and discovered excursions from acceptable limits and practices, including non-compliance with consents, which may damage the environment. The incident register includes events where the Company concerned has itself notified the Council. The register contains details of any investigation and corrective action taken.

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

In the 2016-2017 period, the Council was required to undertake significant additional investigations and interventions, or record incidents, in association with the Company's conditions in resource consents or provisions in Regional Plans.

20 September 2016 - Elevated copper levels in wood waste

A composite wood waste sample collected from the Monk Road site on 20 September 2016 returned results with elevated levels of copper (Table 4), indicating that treated timber containing copper may have been discharged at the site. The Company removed the sawdust containing copper and further sampling found copper concentrations were below normal background levels. A letter of explanation was received and the company has tightened up procedures around when and where treatment is carried out at the timber treatment plant site, and supervision of truck drivers when loading and unloading material. The results of a follow-up sample collected on 20 October 2016 showed that the material containing copper had been removed from the site (Section 2.2.1.3, Table 4).

18 May 2017 - High BOD in samples

Samples collected on 18 May 2017 had high BODCF so a follow-up sampling survey was carried out on 25 May 2017. A surface water and discharge sampling survey was completed, with samples collected from six sites starting upstream of Monk Road (KOI000100), the discharge (IND001055), below the mixing zone (KOI00130) and a further three samples collected in between the discharge and the bottom site. The results are presented in Table 7 below.

Table 7 Results of follow-up sampling of the discharge and upstream and downstream of the site 25 May 2017

Parameter	Unit	Upstream	Discharge	Downstream				
		KOI000100	IND001055	West pipe (tributary bypassing fill)	200 m downstream	Minor eastern trib discharge to stream	KOI00130	Consent limits at site KOI000130
Dissolved arsenic	g/m ³	<0.001	1.84	0.008	0.43	0.10	0.13	0.1
BODCF	g/m ³	<0.5	1200	16	260	0.5	73	3.0
Conductivity	mS/m	15.9	111	17.8	44.8	22.3	31.3	-
Dissolved chromium	g/m ³	<0.03	0.60	<0.03	0.16	0.06	0.08	0.1
Dissolved copper	g/m ³	<0.001	0.10	<0.001	0.014	0.003	0.002	0.01
pH	pH	6.5	4.8	6.3	5.3	6.3	6.3	-
Temperature	Deg C	12.0	25.0	12.8	16.7	16.4	12.9	-

As a result of the follow-up samples showing a continued breach of consent conditions, the Company was subsequently issued with an abatement notice. The abatement notice required that action be taken to reduce the filtered carbonaceous biochemical oxygen demand to below 3.0 g/m³ and dissolved arsenic to below 0.1 g/m³ at site KOI000130 as required by condition 3a of resource consent 7342-2, and investigations are continuing.

2.4 Discussion of site performance

2.4.1 Monk Road site

Following the installation and commissioning of the wood waste boiler at the timber treatment plant, which has been used to dispose of the untreated and tanalith E treated sawdust since May 2015, the Company continued to investigate other waste diversion options during the year under review.

There was no evidence of illegal dumping found.

In regards to the discharge of wood waste the site, unauthorised material, namely treated timber shavings and/or sawdust were found at the site at the September inspection. An abatement notice was issued requiring that the material be removed. The Company identified the areas affected by the disposal of treated wood waste, and removed this from the site as required by the abatement notice. Follow-up sampling did not find any treated material present.

A similar disposal occurred in the 2015-2016 year, at which time an abatement notice required that the material be removed, and that the Company ensure that no further discharges of unauthorised material occur at the site. The discharge of treated material found during the year under review was therefore a breach of the consent and the previous abatement notice. As a result an infringement fine was issued.

There were no odour or dust issues noted during any of the inspections and no complaints were received about the site. The pipe installed under the fill remained functional and was of sufficient length in the spring channel to ensure separation of the spring water from the wood waste as required by consent conditions.

There were no odour or dust issues noted during any of the inspections and no complaints were received about the site.

2.4.2 Village Road site

The cap was found to be in a satisfactory condition, with healthy vegetative cover across the site and no evidence of slumping was observed.

2.5 Environmental effects of exercise of consents

2.5.1 Monk Road site

The discharge of leachate from the site was still having an effect on the environment immediately downstream of the discharge, and it was noted that while contaminant levels in the discharge initially decreased there was an increase towards the end of the year. The receiving water quality conditions were met at the compliance point during the September and January surveys, but the BODCF and dissolved arsenic limits were exceeded in the two sets of samples collected during May. There were no significant adverse effects (for example heterotrophic growths or fish kills) observed at the time of the sampling surveys. However, this was logged as an unauthorised incident and investigations are continuing.

2.5.2 Village Settlement Road site

Sampling by the Council showed that the remediation works undertaken in the 2013-2014 year have continued to have been successful and the site remained compliant with consent conditions for the cap, buffer strip and beyond the site boundary during the 2016-2017 year, with the results of all soil samples complying with consent conditions.

It is noted that the site must remain compliant with the post closure component concentrations for at least five years prior to consideration being given to allowing the consent being surrendered. It should also be noted that the consent conditions were designed to reduce risk to the neighbour's property rather than being designed to have the site remediated to any particular land use guideline.

2.6 Evaluation of performance

A tabular summary of the Company's compliance record for the period under review is set out in Tables 8-11.

Table 8 Summary of performance for Monk Road culvert consent 6412-1

Purpose: To erect, place and maintain a culvert in an unnamed tributary of the Kohi Stream in the Whenuakura catchment		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. The consent holder shall adopt the best practicable option when exercising the consent	Inspection and liaison with consent holder	Yes
2. The consent shall be exercised generally in accordance with the information provided in the application	Inspection and liaison with consent holder and review of Council records	Yes
3. The consent holder shall inform the Council of the culvert installation and completion of works within 48 hrs	Inspection and liaison with consent holder and review of Council records	Yes
4. The exercise of the consent shall not cause flooding of upstream property	Site inspection and review of incident register. No complaints received	Yes
5. The consent shall lapse after five years if not exercised	Consent has been exercised	N/A
6. Optional review provision	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 9 Summary of performance for Monk Road untreated wood waste discharge consent 6413-2.1

Purpose: To discharge untreated wood waste from sawmill operations onto and into land		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. The consent holder shall supply a management plan for the activity by 2 May 2016	Review of Council records	Plan received. Comments provided to the Company advising that the plan contradicts consent conditions. Updated plan still to be received
2. Specifies the type of untreated wood waste permitted to be discharged at the site	Site specific monitoring programme – site inspections	No. Evidence of treated wood waste found. Second occasion in successive years, infringement fine issued
3. Materials to discharge in certain area	Inspection and liaison with consent holder	Yes

Purpose: To discharge untreated wood waste from sawmill operations onto and into land		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
4. The consent holder shall be the sole source of material discharged	Inspection and liaison with consent holder	Yes
5. Discharged material not to enter water	Inspection and liaison with consent holder	Yes
6. The consent holder shall adopt the best practicable option when exercising the consent	Inspection and liaison with consent holder	Yes
7. Specifications for capping and reinstatement	Inspection	Yes
8. Optional review provision	Opportunity for review June 2022	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		Poor Improvement required

N/A = not applicable

Table 10 Summary of performance for treated wood waste discharge consent 6528-2

Purpose: To discharge treated and untreated wood waste and associated leachate onto and into land		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practical option	Inspection and liaison with consent holder	Yes
2. The consent holder shall supply a management plan for the activity	Review of Council records	Yes
3. Only wood waste shall be discharged to the site	Inspection and liaison with consent holder	N/A No discharges occurred at the site
4. No wood treatment chemicals or sludges shall be discharged to the site	Inspection and liaison with consent holder	N/A No discharges occurred at the site
5. The consent holder shall be the sole discharger to the site	Inspection and liaison with consent holder	N/A No discharges occurred at the site
6. The consent holder shall minimise storm water movement across the site	Inspection and liaison with consent holder	Yes

Purpose: To discharge treated and untreated wood waste and associated leachate onto and into land		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
7. Fill capped top certain specifications	Inspection and soil sampling	Yes
8. Capped areas not to exceed certain contaminant limits	Inspection and soil sampling	Yes
9. Non capped areas not to exceed certain contaminant limits prior to closure	Inspection and soil sampling	Yes
10. Final toe of cap to meet certain specifications	Inspection	Yes
11. Maintenance of capped areas	Inspection	Yes
12. The consent holder shall notify Council 20 days prior to final capping	Review of Council records	Yes
13. The consent holder shall notify Council 7 days after final capping is complete	Inspection and liaison with consent holder. Condition previously met	N/A
14. The consent holder to retain consent for monitoring purposes for a minimum of five years after closure	Inspection and liaison with consent holder	Yes
15. Entire filled are must be capped and reinstated by June 2017	Inspection. Condition previously met	N/A
16. Optional review provision	Opportunity for review June 2018, recommendation attached	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 11 Summary of performance for Monk Road leachate and stormwater consent 7342-2

Purpose: To discharge leachate and stormwater from a sawmill-waste disposal site into an unnamed tributary of the Kohi Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. The consent holder shall adopt the best practicable option when exercising the consent	Inspection and liaison with consent holder	Yes

Purpose: To discharge leachate and stormwater from a sawmill-waste disposal site into an unnamed tributary of the Kohi Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
2. Certain effects not to be present 50 m downstream of the discharge	Visual assessment and receiving water sampling	Yes
3. Certain parameters not to be exceeded at site KOI000130	Receiving water sampling	No. Exceedance of BODCF and dissolved arsenic limits in one of three scheduled samples and in a follow-up sample
4. A review condition	Next opportunity for review June 2022	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		High

N/A = not applicable

During the year, the Company demonstrated a poor level of environmental performance with the resource consents and an improvement was required in their administrative performance as defined in Section 1.1.4. Samples of wood waste showed that for the second year in a row treated material had been disposed of at the Monk Road site. An abatement notice was requiring the removal of the material. As the discharge contravened the abatement notice issued in the 2015-2016 year as well as the conditions of the consent, an infringement fine was also issued. The biological oxygen demand and dissolved arsenic concentrations below the mixing zone exceeded consent limits in both a routine compliance monitoring and follow-up sample close to the end of the year under review. The Company was abated to comply with the conditions of the consent. The management plan provided indicated that the cap would not comply with consent conditions. The Company was advised of this and the Council is awaiting a revised plan.

2.7 Recommendation from the 2015-2016 Annual Report

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

1. THAT monitoring of discharges from Waverley Sawmills Limited site on Monk Road in the 2016-2017 year continues at the same level as in 2015-2016.
2. THAT the Company investigates contingency measures to prevent a breach of consent at Monk Road as a result of the decreasing pH and increasing BODCF trends in the spring water.
3. THAT monitoring of discharges from Waverley Sawmills Limited site on Village Settlement Road site is reduced to one inspection and sampling survey, with an additional sample being collected at site SOL00180 due to the marginal consent exceedance found in the sample collected on 6 April 2016.

The Council recommendations were implemented. The Company did not investigate contingency measures and the BODCF limit was exceeded during the year under review.

2.8 Alterations to monitoring programmes for 2017-2018

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

- the extent of information already made available through monitoring or other means to date;
- its relevance under the RMA;
- the Council's obligations to monitor consented activities and their effects under the RMA;
- the record of administrative and environmental performances of the consent holder; and
- reporting to the regional community.

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

It is proposed that for 2017-2018 that the programme remains unchanged from that of 2016-2017.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the site in question. The Council reserves the right to adjust this baseline programme should the need arise if potential or actual non-compliance is determined at any time during 2017-2018.

2.9 Exercise of optional review of consent

Resource consent **6528-2** provides for an optional review of the consent in June 2018. Condition 16 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 arising from the exercise of the resource consent.

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

3 Recommendations

1. THAT, in the first instance, monitoring of discharges from Waverley Sawmills Limited sites on Monk Road and Village Settlement Road in the 2017-2018 year continues at the same level as in 2016-2017.
2. THAT the option for a review of resource consent 6528-2 in June 2018, as set out in condition 16 of the consent, not be exercised, on the grounds that the current conditions are adequate to deal with adverse environmental effects.
3. THAT should there be issues with environmental or administrative performance in 2017-2018, 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:

BOD	Biochemical oxygen demand. A measure of the presence of degradable organic matter, taking into account the biological conversion of ammonia to nitrate.
BODFC	Carbonaceous biochemical oxygen demand of a filtered sample.
CCAB	Copper, chromium, arsenic, and boron, which may be present at the sites from chromated copper arsenate and boron preserved timber.
Condy	Conductivity, an indication of the level of dissolved salts in a sample.
g/m ³	Grams per cubic metre, and equivalent to milligrams per litre (mg/L). In water, this is also equivalent to parts per million (ppm), but the same does not apply to gaseous mixtures.
Incident	An event that is alleged or is found to have occurred that may have actual or potential environmental consequences or may involve non-compliance with a consent or rule in a regional plan. Registration of an incident by the Council does not automatically mean such an outcome had actually occurred.
Intervention	Action/s taken by Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring.
Investigation	Action taken by Council to establish what were the circumstances/events surrounding an incident including any allegations of an incident.
IR	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.
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).
pH	A numerical system for measuring acidity in solutions, with 7 as neutral. Numbers lower than 7 are increasingly acidic and numbers 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.
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</i> 1991 including all subsequent amendments.

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

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- ANZECC, 2000: *Australian and New Zealand guidelines for fresh and marine water quality 2000*. Australian and New Zealand Environment and Conservation Council; Agriculture and Resource Management Council of Australia and New Zealand, October 2000.
- Ministry of Health. *Drinking-water Standards for New Zealand*. Wellington. Ministry of Health.

Appendix I

Resource consents held by Waverley Sawmills

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

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

Name of
Consent Holder: Waverley Sawmills Limited
 P O Box 44
 WAVERLEY

Consent Granted 4 March 2005
Date:

Conditions of Consent

Consent Granted: To erect, place and maintain a culvert in an unnamed
 tributary of the Kohi Stream in the Whenuakura catchment
 at or about GR: R21:515-629

Expiry Date: 1 June 2022

Review Date(s): June 2010, June 2016

Site Location: Monk Road, Waverley

Legal Description: Sec 71 Blk II Wairoa SD

Catchment: Whenuakura

Tributary: Kohi

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 exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of application 3154. In the case of any contradiction between the documentation submitted in support of application 3154 and the conditions of this consent, the conditions of this consent shall prevail.
3. The consent holder shall notify the Chief Executive, Taranaki Regional Council, in writing at least 48 hours prior to the commencement and upon completion of the initial installation and again at least 48 hours prior to and upon completion of any subsequent maintenance works which would involve disturbance of or deposition to the riverbed or discharges to water.
4. The exercise of this consent shall not result in the significant ponding of water on the upstream neighbouring property.
5. This consent shall lapse on the expiry of five years after the date of issue of this consent, 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.
6. 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 2016, for the purpose of ensuring that the conditions are adequate to deal with

Consent 6412-1

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 4 March 2005

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:	Waverley Sawmills Limited PO Box 44 Waverley 4544	
Decision Date (Change):	2 February 2016	
Commencement Date (Change):	2 February 2016	(Granted Date: 29 May 2012)

Conditions of Consent

Consent Granted:	To discharge untreated wood waste from sawmill operations onto and into land	
Expiry Date:	1 June 2028	
Review Date(s):	June 2016, June 2022	
Site Location:	Monk Road, Waverley	
Legal Description:	Secs 71 & 72 Okotuku Dist (Discharge site)	
Grid Reference (NZTM)	1741510E-5601130N	
Catchment:	Whenuakura	
Tributary:	Kohi	

*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. Within three months of the granting of this consent, the consent holder shall prepare and maintain an updated stormwater management plan that documents how the site is to be managed to minimise the infiltration of stormwater and spring water into the filled areas. This plan shall be followed at all times, shall be certified by the Chief Executive, Taranaki Regional Council, and shall include but not necessarily be limited to:
 - a) the manner in which any stormwater water will be isolated and diverted from the fill area;
 - b) the manner in which any spring water will be isolated and diverted from the fill;
 - c) a timetable for capping works for any completed areas; and
 - d) details of final contouring and stormwater diversion of completed capped areas.
2. This consent only authorises the discharge of the following wood wastes. The discharge of any other material or waste at this site shall not occur:
 - Untreated wood shavings;
 - Sawdust;
 - Bark;
 - Slovens and sawmill waste;
 - Morbark chipper slovens, chunks and fines;
 - Batten plant and processing shed off-cuts;
 - Broken fillet sticks;
 - Furnace ash; and
 - Yard sweepings.
3. The discharge of materials shall only occur in the shaded area shown in Figure 1 (attached).
4. The Waverly Sawmills Limited sawmill site at Oturi Road, Waverley shall be the sole source of material discharged at the site.
5. The exercise of this consent shall not result in any discharged material entering surface water.
6. The consent holder shall at all times adopt the best practicable option or options (as defined in section 2 of the Resource Management Act 1991) to prevent or minimise any actual or potential effect on the environment arising from any discharge at the site.
7. Any area used for the discharge of material under this consent shall be capped and re-vegetated. The cap shall be contoured to ensure no ponding occurs over the discharge area and shall consist of a minimum of 300 mm of clean clay and 100 mm of top soil.

Consent 6413-2.1

8. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2016 and/or June 2022 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 2 February 2016

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management



Figure 1 Discharge area at Waverley Sawmill's Monk Road site

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

Name of
Consent Holder: Waverley Sawmills Limited
 P O Box 44
 WAVERLEY 4544

Decision Date: 31 July 2012

Commencement
Date: 31 July 2012

Conditions of Consent

Consent Granted: To discharge treated and untreated wood waste and
 associated leachate onto and into land at or about (NZTM)
 1744652E-5597502N

Expiry Date: 1 June 2022

Review Date(s): June 2014, June 2018

Site Location: Village Settlement Road, Waverley

Legal Description: Lot 6 DP 5250 Blk VIII Wairoa SD (Discharge site)

Catchment: Waitotara

Tributary: Moumahaki

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

General condition

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

Special conditions

1. The consent holder shall at all times adopt the best practicable option (as defined in section 2 of the Resource Management Act 1991) to prevent or minimise any actual or potential effect on the environment arising from any discharge at the site. This includes, but is not necessary limited to:
 - a) controlling stormwater to minimise infiltration into the filled areas;
 - b) leachate control to minimise to migration of contaminants from the tipface
 - c) minimising the area of discharged wood waste that is uncapped; and
 - d) minimising the duration for which discharged wood waste remains uncapped.
2. Within three months of this consent being granted the consent holder shall prepare and maintain a site management plan that documents how the requirements set out in this consent will be met. This plan shall be followed at all times and after having been certified by the Chief Executive, Taranaki Regional Council.
3. This consent only authorises the discharge of treated and untreated wood shavings, sawdust and bark at the site. The discharge of any other material at this site shall not occur.
4. The discharge shall only occur in the area depicted by the orange shading shown in Figure 1 (attached) and in particular but without limitation no discharges shall occur within 25 metres of the property's boundary.
5. The Waverly Sawmills Limited sawmill site at Oturi Road, Waverley shall be the sole source of material discharged at the site.
6. The consent holder shall establish and maintain all necessary stormwater structures and retention bunding to ensure that any tipface runoff is minimised and contained within the landfill footprint. This includes the establishment of new drains as required when new discharge cells are constructed.
7. When each discharge cell is full it shall be capped as soon as is practicable. The cap shall consist of a minimum of 600 mm of clean compacted clay and 200 mm of clean topsoil and shall contoured to ensure that stormwater is diverted away from the open tipface and drains freely from the capped area.

8. During the operational life of the landfill, the exercise of this consent shall not result in any of the maximum concentrations of contaminants shown in the table below being exceeded in the top 150 mm of soil beyond the site boundary.

Contaminant	Maximum concentration
Arsenic	30 mg kg ⁻¹
Boron	380 mg kg ⁻¹
Total chromium	76 mg kg ⁻¹
Copper	130 mg kg ⁻¹

9. Immediately prior to the final capping of the last discharge cell, the consent holder shall undertake any soil remediation action required to ensure that the levels of contaminants in the top 150 mm of soil in the areas identified in the table below do not exceed the respective maximum concentrations as also set out in the table below.

Soil Contaminant	Maximum concentrations		
	Capped Areas	Beyond site boundary	Area between toe and south boundary*
Arsenic	30 mg kg ⁻¹	30 mg kg ⁻¹	38 mg kg ⁻¹
Total chromium	76 mg kg ⁻¹	76 mg kg ⁻¹	76 mg kg ⁻¹
Copper	40 mg kg ⁻¹	42 mg kg ⁻¹	130 mg kg ⁻¹
Boron	380 mg kg ⁻¹	20 mg kg ⁻¹	160 mg kg ⁻¹

*Area depicted by purple shading in Figure 1

10. After completing the final cell, the toe of the filled area shall be capped in a manner that ensures that the fill material is completely encapsulated with 600 mm of compacted clay prior to applying topsoil.
11. For the duration this consent is in effect, the consent holder shall maintain the capped areas at the site to following standards:
- all areas capped prior to the granting of this consent shall be maintained to their current standard;
 - all areas capped during the exercise of this consent shall be maintained to the standard set out in special condition 7;
 - with the exception of access tracks, a vegetative cover shall be maintained on all capped areas of the site; and
 - an appropriate contour shall be maintained on all capped areas to ensure adequate drainage.
12. The consent holder shall notify the Taranaki Regional Council 20 days prior to commencing final capping of the final discharge cell. Notification shall include the consent number and a brief description of the activity consented and shall be emailed to worknotification@trc.govt.nz.

Consent 6528-2

13. The consent holder shall notify the Taranaki Regional Council within 7 days of the completion of the final capping of the final discharge cell. Notification shall include the consent number and a brief description of the activity consented and shall be emailed to worknotification@trc.govt.nz. Once the Taranaki Regional Council receives and acknowledges this notification, no further discharges may occur at the site.
14. This consent cannot be surrendered for at least five years after reinstatement of the site, during which soil quality monitoring will be undertaken to ensure that the contaminants in the fill have been effectively contained. During this period the level of soil contaminant must not exceed the limits set out in special condition 9.
15. To ensure that a five year post closure monitoring window is available, the site must be closed to discharges, reinstated and remediated by no later than June 2017.
16. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2014 and/or June 2018 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 2012

For and on behalf of
Taranaki Regional Council

Director-Resource Management

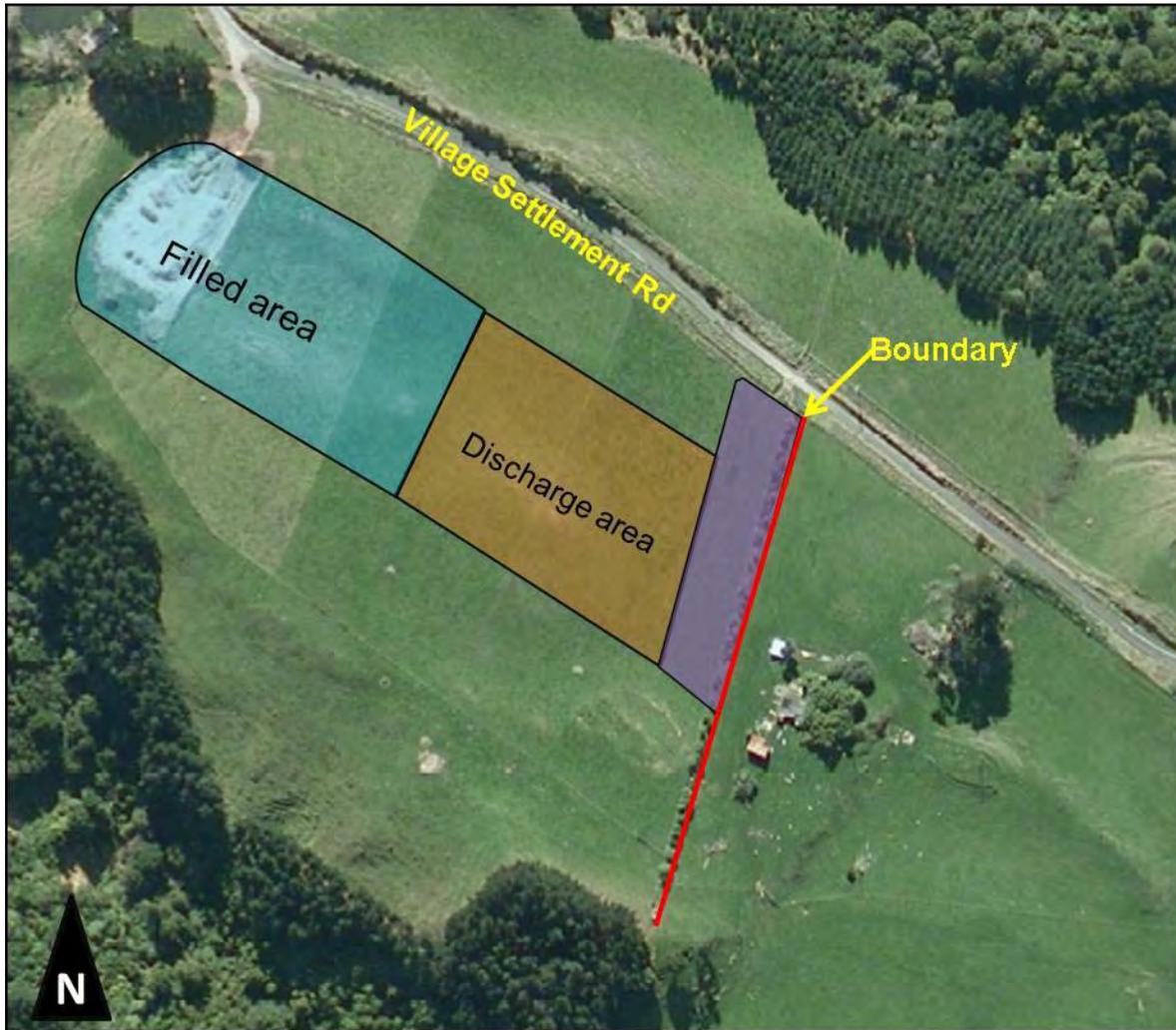


Figure 1 Discharge area at Waverley Sawmills Village Settlement Rd site

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

Name of
Consent Holder: Waveley Sawmills Limited
P O Box 44
WAVERLEY 4544

Decision Date
(Change): 4 March 2014

Commencement Date
(Change): 4 March 2014 (Granted: 7 October 2010)

Conditions of Consent

Consent Granted: To discharge leachate and stormwater from a sawmill-waste disposal site into an unnamed tributary of the Kohi Stream

Expiry Date: 1 June 2028

Review Date(s): June 2014, June 2016, June 2022

Site Location: Monk Road, Waverley

Legal Description: Sec 71 Blk II Wairoa SD (Discharge site)
Pt Lot 2 DP 4352 (Discharge source)

Grid Reference (NZTM) 1741531E-5601034N

Catchment: Whenuakura

Tributary: Kohi

*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 to section 36 of the Resource Management Act 1991.

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 exercise of this consent shall not give rise to any or all of the following effects in the unnamed tributary of the Kohi Stream at a point 50 metres downstream of the discharge;
 - 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.
3. The exercise of this consent shall not cause the receiving water at site KOI000130 (1741323E-5600500N) to breach the following standards;
 - a) concentration of filtered carbonaceous biochemical oxygen demand no greater than 3.0 g/m³;
 - b) concentration of dissolved copper demand no greater than 0.01 g/m³;
 - c) concentration of dissolved chromium demand no greater than 0.1 g/m³;
 - d) concentration of dissolved arsenic demand no greater than 0.1 g/m³.
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 2012, 2014, 2016 and/or June 2022 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 4 March 2014

For and on behalf of
Taranaki Regional Council

A D McLay
Director-Resource Management

Appendix II

Soil and wood waste analysis results

ANALYSIS REPORT

Page 1 of 1

Client:	Taranaki Regional Council	Lab No:	1651673	SPV1
Contact:	Scott Cowperthwaite C/- Taranaki Regional Council Private Bag 713 Stratford 4352	Date Received:	21-Sep-2016	
		Date Reported:	27-Sep-2016	
		Quote No:	49397	
		Order No:	60309	
		Client Reference:	Waverley Sawmills 6528-2	
		Submitted By:	Ray Harris	

Sample Type: Soil

Sample Name:	163103 20-Sep-2016 11:45 am				
Lab Number:	1651673.2				
CCAB, screen level					
Total Recoverable Arsenic	mg/kg dry wt	9	-	-	-
Total Recoverable Boron	mg/kg dry wt	< 20	-	-	-
Total Recoverable Chromium	mg/kg dry wt	19	-	-	-
Total Recoverable Copper	mg/kg dry wt	38	-	-	-

Sample Type: Saw Dust

Sample Name:	163104 20-Sep-2016 10:30 am				
Lab Number:	1651673.1				
CCAB, screen level					
Total Recoverable Arsenic	mg/kg dry wt	25	-	-	-
Total Recoverable Boron	mg/kg dry wt	55	-	-	-
Total Recoverable Chromium	mg/kg dry wt	36	-	-	-
Total Recoverable Copper	mg/kg dry wt	470	-	-	-

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Saw Dust

Test	Method Description	Default Detection Limit	Sample No
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction. Used for sample preparation. May contain a residual moisture content of 2-5%.	-	1-2
CCAB, screen level	Total recoverable digestion, ICP-MS. screen level	2 - 20 mg/kg dry wt	1-2
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2.	-	1-2

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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Peter Robinson MSc (Hons), PhD, FNZIC
Client Services Manager - Environmental



ANALYSIS REPORT

Page 1 of 1

Client:	Taranaki Regional Council	Lab No:	1782801	SPV1
Contact:	L Smith C/- Taranaki Regional Council Private Bag 713 Stratford 4352	Date Received:	27-May-2017	
		Date Reported:	01-Jun-2017	
		Quote No:	49397	
		Order No:		
		Client Reference:	Waverley Sawmills 6528-2	
		Submitted By:	Ray Harris	

Sample Type: Soil

Sample Name:	SOL000179 171870 25-May-2017	SOL000180 171871 25-May-2017			
Lab Number:	1782801.1	1782801.2			
CCAB, screen level					
Total Recoverable Arsenic	mg/kg dry wt	14	8	-	-
Total Recoverable Boron	mg/kg dry wt	< 20	< 20	-	-
Total Recoverable Chromium	mg/kg dry wt	22	17	-	-
Total Recoverable Copper	mg/kg dry wt	43	39	-	-

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil

Test	Method Description	Default Detection Limit	Sample No
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction. Used for sample preparation. May contain a residual moisture content of 2-5%.	-	1-2
CCAB, screen level	Total recoverable digestion, ICP-MS, screen level	2 - 20 mg/kg dry wt	1-2
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2.	-	1-2

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

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Ara Heron BSc (Tech)
Client Services Manager - Environmental



This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised. The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked *, which are not accredited.

ANALYSIS REPORT

Page 1 of 1

Client:	Taranaki Regional Council	Lab No:	1668273	SPV1
Contact:	Clinton Carre C/- Taranaki Regional Council Private Bag 713 Stratford 4352	Date Received:	21-Oct-2016	
		Date Reported:	31-Oct-2016	
		Quote No:	49397	
		Order No:	60952	
		Client Reference:	Waverley Sawmills 6528-2	
		Submitted By:	L Smith	

Sample Type: Saw Dust

Sample Name:	163494				
	20-Oct-2016				
Lab Number:	1668273.1				
CCAB, screen level					
Total Recoverable Arsenic	mg/kg dry wt	< 5	-	-	-
Total Recoverable Boron	mg/kg dry wt	< 50	-	-	-
Total Recoverable Chromium	mg/kg dry wt	< 5	-	-	-
Total Recoverable Copper	mg/kg dry wt	36	-	-	-

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Saw Dust

Test	Method Description	Default Detection Limit	Sample No
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction. Used for sample preparation. May contain a residual moisture content of 2-5%.	-	1
CCAB, screen level	Total recoverable digestion, ICP-MS, screen level	2 - 20 mg/kg dry wt	1
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2.	-	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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Peter Robinson MSc (Hons), PhD, FNZIC
Client Services Manager - Environmental

