

**BEFORE THE MANAWATU-WANGANUI REGIONAL COUNCIL**

**UNDER** the Resource Management  
Act 1991

**IN THE MATTER OF** a review of conditions under  
section 128(1)(a)(iii) and a  
change of conditions under  
section 127 of the Act of the  
Horowhenua District Council's  
resource consents for  
discharges at the Levin  
Landfill

---

**SECTION 42A REPORT OF ANDREW BASHFORD**

**PLANNING**

**26 August 2016**

---

## TABLE OF CONTENTS

A.	INTRODUCTION .....	4
B.	SCOPE OF THIS REPORT .....	5
C.	SITE DESCRIPTION .....	6
D.	BACKGROUND.....	7
E.	CURRENT APPLICATIONS .....	8
	Process .....	8
	Primary Issues in Contention.....	10
F.	SCOPE OF APPLICATIONS .....	11
G.	SUBMISSIONS .....	13
H.	STATUTORY CONSIDERATIONS.....	16
	Statutory Framework .....	16
	Actual and Potential Effects on the Environment .....	17
	Air Quality .....	17
	Water Quality .....	19
	Effects Raised by Submitters .....	23
	Relevant Statutory Provisions.....	24
	National Policy Statement for Freshwater Management.....	24
	One Plan.....	26
	Other Relevant Matters .....	30
I.	CONDITIONS.....	31
J.	PART 2 ASSESSMENT .....	49
	Section 6: Matters of National Importance .....	49
	Section 7: Other Matters.....	49
	Section 8: Treaty of Waitangi.....	50
	Section 5: Purpose .....	51
K.	RECOMMENDATION.....	51
	APPENDIX ONE .....	53
	MAP OF LEVIN LANDFILL AND SURROUNDS .....	53

APPENDIX TWO .....	54
RECOMMENDED CONDITIONS .....	54

## **A. INTRODUCTION**

1. My name is Andrew David Bashford.
2. I am the Team Leader Consents at the Manawatu-Wanganui Regional Council (Horizons). I have held that position since August 2015.
3. I hold the qualification of Bachelor of Resource and Environmental Planning from Massey University. I am a full member of the New Zealand Planning Institute.
4. I have 11 years experience in planning, and have been employed by a private consultancy (as a senior planner), the Palmerston North City Council (as a consents planner and then senior consents planner) and Civic Corporation Ltd (as a monitoring officer and then policy planner). During this time I have worked on a number of large consenting projects, including the recent review of conditions of the resource consents for the Palmerston North wastewater discharges.
5. To date my involvement in this review process has included:
  - A visit to the landfill and meeting with the Hokio Neighbourhood Liaison Community Group (HNLCG) and the Horowhenua District Council (HDC) held at the Ngatokowaru Marae on 13 October 2015.
  - A further visit to the site, with Horizons experts, on 11 March 2016, which included observations of the closed landfill, the current active landfill, the leachate collection sump, the leachate pond, the existing flare stack, the Tatana Drain, the point where the Tatana Drain joins the Hokio Stream, and the proximity of neighbouring dwellings to the landfill.
  - Attendance at a pre-hearing meeting held at the Ngatokowaru Marae on 6 April 2016.
  - Attendance at a Whakawatea Forum meeting on 2 August 2016, which included a visit to the Levin WWTP and 'the Pot' discharge area.
  - Attendance at a Whakawatea Forum meeting held at the HDC administration building, Levin, on 15 August 2016.
6. I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. I agree to comply with that Code. Other than where I state that I

am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

## **B. SCOPE OF THIS REPORT**

7. This report addresses planning matters which relate to this s128 review of conditions and s127 change of conditions application made under the Resource Management Act 1991 (RMA).
8. In preparing this report I have considered:
  - a. The Notice of Review, dated 30 October 2015;
  - b. HDCs response to the Notice of Review, dated 25 November 2015;
  - c. HDCs application to change or cancel conditions of consent made under section 127 of the RMA;
  - d. The submissions that have been made on the above applications;
  - e. The section 42A reports prepared by Ms Deborah Ryan (Air Quality Consultant to Horizons), Mr Logan Brown (Environmental Scientist: Water Quality) and Mr Stuart Standen (Senior Consents Monitoring Officer);
  - f. The joint witness statement (JWS) prepared by the air quality experts<sup>1</sup>;
  - g. The s99(5) Report and Whakawatea Forum Update Report prepared by Ms Christine Foster, as independent facilitator of the pre-hearing and Whakawatea Forum meetings.
  - h. The relevant resource management matters which are required to be considered by a consenting authority in relation to this review and s127 application.
9. In my report I have addressed the following:
  - a. Site description (Section C);
  - b. The background to the landfill and existing resource consents (Section D)

---

<sup>1</sup> The water quality experts are also caucusing and intend to provide a joint witness statement. At the time of writing this report an agreed JWS was not available.

- c. Current applications (Section E);
- d. The scope of the applications (Section F)
- e. Submissions (Section G)
- f. Statutory considerations (Section H)
- g. Conditions (Section I);
- h. RMA Part 2 (Section J)
- i. Recommendation (Section K)

### C. SITE DESCRIPTION

10. The Levin landfill is located on Hokio Beach Road approximately 4km west of Levin, as shown in Figure 1. The site is located within undulating sand dunes typical of the surrounding area. The landfill itself is surrounded by plantation pine trees within the site. The site itself is bounded by pastoral farm land.

**Figure 1: General Location Plan**



11. A number of residential dwellings and the Ngatokowaru Marae are located in close proximity, i.e. less than 1km, to the landfill. The Hokio Stream flows from Lake Horowhenua to the sea with its mouth at Hokio Beach. It is located a short distance to the north of the landfill site. The Tatana Drain is located along the northern boundary

of the closed landfill and takes a right angle turn before flowing in a northerly direction and into the Hokio Stream. The landfill, dwellings, Ngatokowaru Marae, Hokio Stream and the Tatana Drain are shown on the map contained in Appendix 1 of this report.

## **D. BACKGROUND**

12. A comprehensive description of the background to the past consenting processes, the Parliamentary Commissioner for the Environment (PCE) investigation and the 2010 review of conditions is outlined in sections 1.2, 1.3 and 1.5 of the decision in relation to the 2008 review<sup>2</sup>. A brief summary is provided below.
13. A small landfill has existed at the site since the 1950's. In approximately 1975, this landfill reached capacity and a second landfill was established. In this report the second landfill is referred to as the closed landfill. In 1994 HDC made resource consent applications to the Regional Council for a new landfill on the site. These applications followed a protracted process with a Council level decision not made until 1997. The Regional Council decision was subsequently appealed to the Environment Court. A lengthy mediation process ensued and the following applications were approved by consent order in 2002.
  - Discharge of solid waste to land (Discharge Permit 6009)
  - Discharge of leachate to land (Discharge Permit 6010)
  - Discharge of contaminants to air (Discharge Permit 6011)
  - Divert storm water runoff from land filling operations (Water Permit 6012)
  - Discharge liquid waste to land (Discharge Permit 7289)
14. A further consent, Discharge Permit 102259 (to discharge storm water to land that may enter groundwater), was also granted in May 2002 on a non-notified basis and therefore was not subject to the Environment Court appeal process.
15. The PCE initiated an investigation into the management and effects of the landfill in 2004, with a report produced in August 2008. Following the PCE report the Regional Council carried out a publicly notified review of conditions of all consents pertaining to the landfill in late 2008. The 2008 review involved a number of pre-hearing meetings

---

<sup>2</sup> A copy of this decision is included under Tab 2, Volume 1 of the Hearing Folders.

which resulted in an agreed outcome and amended conditions as reported in the decision report dated 31 May 2010.

16. Since then, HDC has carried out trials for the flaring of landfill gas on the site and applied for a long term consent for discharges from the flare. This permit was granted (Discharge Permit 106798) by Horizons in 2014. Subsequently, after further review of the use of the flare, HDC made a further application to change the conditions of that consent to allow more time before the flare had to be installed. The s127 application was granted in July 2015 and is referenced APP-2013016220.01<sup>3</sup>.
17. Leading up to the current review, I understand that discussions between HDC and the HNLCCG had started before April 2015, but that there was insufficient time for all of the information to be presented and assimilated by the parties. HDC applied to Horizons to change the date by which the review must be initiated from April to October. This application was granted on a non-notified basis in June 2015<sup>4</sup>.

## **E. CURRENT APPLICATIONS**

### **Process**

18. The 2015 Notice of Review, including Horizons proposed conditions, was served on HDC on 30 October 2015. The review provided an opportunity for HDC to propose new consent conditions, in accordance with s129(1)(d). HDC duly responded on 25 November 2015, proposing amendments to the Horizons conditions and proposing a number of additional changes to the consent conditions. HDC also applied to change or cancel a number of other conditions, under s127, that it considered to be outside the scope of the review process. HDC agreed to publicly notify the s127 application at the same time as the s128 review so that all of the proposed amendments could be considered comprehensively.
19. The s128 review and s127 applications were bundled and publicly notified on 10 December 2015, with adverts placed in the Manawatu Standard and the Horowhenua Chronicle. The submission period closed on 29 January 2016 with a total of 169 submissions received<sup>5</sup>. Four submissions were received by Horizons after the

---

<sup>3</sup> See Tab 7, Volume 2 of the Hearing Folders.

<sup>4</sup> Consent reference APP-1995003658.03.

<sup>5</sup> It is noted that the Royal Forest and Bird Protection Society submitted twice on the applications – these submissions are numbered 168 and 168a.



submission period had closed. HDC agreed to extend the submission by 2 working days (to 2 February 2016) so that these submissions could be received<sup>6</sup>.

20. Of the submissions, all but two requested to be heard<sup>7</sup>. In addition, since receipt of submissions Horizons has received notification from a few other submitters who have either withdrawn their right to be heard, or have stated that they will not be attending the hearing, as identified in Table 1.

**Table 1: Submitters who have withdrawn right to be heard or not attending hearing**

Submitter Number	Submitter Name
47	Roy McVoy
48	Margaret Jeune
54	Johanna Korent
56	Robin McBrier
62	Kylee Robinson

21. The majority of submissions requested that a pre-hearing meeting be held and that the applications be considered by an independent panel of qualified people. A number of submitters have also requested that the panel have knowledge of kaupapa and tikanga Maori.
22. A pre-hearing meeting was held on 6 April 2016 at the Ngatokowaru Marae. This meeting was facilitated by Mrs Christine Foster who prepared a report under s99(5) of the RMA<sup>8</sup>. This report was circulated to all parties on 15 April 2016. One of the outcomes from that meeting was the creation of the Whakawatea Forum where submitter concerns with the landfill could be further discussed. Given the willingness of the parties to discuss the issues, the time period from the close of submissions to the close of the hearing was extended on 14 April by 70 working days initially, and

<sup>6</sup> See Tab 8, Volume 2 of the Hearing Folders.

<sup>7</sup> The two submitters who stated that they did not wish to be heard in their submissions were David Andrew (Submission 126) and Nga Kaitiaki O Ngati Kauwhata Inc (Submission 158).

<sup>8</sup> See Tab 3, Volume 2 of the Hearing Folders.

again on 3 August by a further 25 working days<sup>9</sup>. Both of these extensions to the time frames have been agreed to by HDC and the date by which the hearing must be closed is now 30 September 2016.

23. The Whakawatea Forum has met a number of times since the pre-hearing meeting and has been attended by representatives of HDC, the HNLCG, the Water and Environmental Care Association. At the time of writing I have attended two such meetings as described in paragraph 5 above. These meetings have also been facilitated by Mrs Foster who has provided an 'update report'. I understand that a final report under s99(5) will be prepared to record the matters of agreement and disagreement from those meetings.

### **Primary Issues in Contention**

24. As stated in the Notice of Review, the reasons for the review are threefold. Firstly, it is a requirement of the review conditions in each discharge permit that Horizons shall publicly notify a review of certain conditions of the consents. Secondly, numerous complaints from landfill neighbours, regarding odour from the landfill have been received by Horizons since 2013. Despite HDC investigations into the odour issues, no solutions have been proposed and it remains an on-going issue. Thirdly, landfill leachate has been observed to be 'daylighting'<sup>10</sup> into the Tatana Drain, located just to the north of the closed landfill and flowing into the Hokio Stream.
25. Besides responding to the above issues, in its response to the Notice of Review, and its s127 application, HDC has also proposed conditions that seek to define the terms of reference for the Neighbourhood Liaison Group (NLG), and to remove the compulsory nature of the conditions relating to s128 reviews in the various discharge permits.
26. Submissions are addressed in more detail in Section G below. However, the submissions received raise a number of issues including a number that I consider to be outside the scope of the current applications. Despite the pre-hearing processes that have taken place to date, none of these issues have been fully resolved. In my opinion, the issues to be considered and determined by the Hearing Panel include:
- a. The validity and appropriateness of the existing review conditions;

---

<sup>9</sup> See Tab 8, Volume 2 of the Hearing Folders.

<sup>10</sup> Leachate is entering surface water in the drain via breakthrough of the drain bank.

- b. The ongoing odour issue and the mitigation options proposed;
  - c. Whether further investigations into other odour sources are required;
  - d. The effects of leachate entering the Tatana Drain and Hokio Stream;
  - e. Leachate entering groundwater;
  - f. The level of protection afforded to those waterbodies in terms of the applicable water quality standards that should be applied;
  - g. Effects on cultural wellbeing;
  - h. Effects on water and food supplies;
  - i. Investigation and assessment of contaminants in the closed landfill;
  - j. Membership and terms of reference of the NLG;
27. Issues (k) through to (o) shown below are issues that in my opinion are outside the scope of the s128 review process
- a. Closure/decommissioning of the landfill;
  - b. The landfill location;
  - c. Importation of waste from outside the Horowhenua District;
  - d. The disposal of leachate to the Levin WWTP and the 'Pot'; and
  - e. Remediation of the closed landfill.

## **F. SCOPE OF APPLICATIONS**

28. Reviews under sections 128 to 132 of the RMA are limited to being a review of the conditions of the consent. Such reviews cannot cause the activity allowed by the consent to become unviable nor can a review change the duration of the consent. In my opinion, the scope of a review is limited to the purpose specified in the relevant consent condition for such reviews and the reasons given in the notice of review.
29. I also consider that the s127 application is limited in scope. As with the s128 review, the change of conditions cannot change or cancel a condition relating to the duration of the consent. In my opinion, such applications are also limited to the scope of the matters included in the application. Whilst it is acknowledged that additional conditions may be imposed on s127 applications, it is my view that they should be related to the

purpose of the s127 application, i.e. to ensure that effects resulting from a proposed change are avoided, mitigated or remedied.

30. The above limitations to s128 reviews and s127 change of conditions applications are relevant to the current applications before Horizons and the matters in contention as outlined in paragraphs 26 and 27 above. Matters (k) to (o) identified in paragraph 27 (being the closure of the landfill, the location of the landfill, the importation of waste to the landfill from outside the Horowhenua District, the disposal of landfill leachate to the Levin WWTP and remediation of the closed landfill) are, in my view, beyond the scope of what can be addressed through this process. The landfill consents were granted for a term of 35 years (expiring in 2037) and this cannot be changed through a review or s127 process<sup>11</sup>. Likewise, the location of the landfill was determined at that time and consents granted accordingly. The current review and s127 processes are focussed on the conditions of the current discharge permits. The applications are not an opportunity to review alternative discharge options or receiving environments under s105 of the RMA.
31. In terms of the importation of waste from outside the Horowhenua District, the existing discharge permits for the landfill address the various discharges from the landfill and their effects on the surrounding environment. They do not control the source of the waste disposed of at the landfill, nor do they address the rate at which the landfill capacity is used. In a similar fashion, the existing permits do not control the disposal of leachate to the Levin WWTP. There are separate resource consents in place for the Levin WWTP, where the effects on the environment of discharges from the WWTP are addressed.
32. Remediation in an environmental sense generally means to remove contaminants from land or water, which in this instance potentially means the removal of the waste from the closed landfill. As noted above, the closed landfill (and the associated discharges) is consented until 2037. This duration of consent cannot be changed through the current process. Furthermore, it is noted that Rule 14-23 of the One Plan provides for closed landfills as a controlled activity, meaning that Horizons would be required to grant any future application for the closed landfill that was made, albeit that conditions would be imposed in accordance with the performance criteria of that rule.

---

<sup>11</sup> See sections 132(1) and 127(1)(b), RMA

33. Whilst I appreciate that the above issues remain as real concerns for those submitters who have raised them, I consider that these matters cannot be resolved through this process. There are other avenues where it may be more appropriate for those submitters to address these matters, such as the HDC strategic planning processes, i.e. long term and annual planning processes, or when the resource consents for the WWTP are renewed.

## **G. SUBMISSIONS**

34. As stated above, a total of 169 submissions<sup>12</sup> were received on these applications; however, two of them are from the same submitter and have been numbered 168 and 168a (for the remainder of this report I have considered these as a single submission and referenced them as sub. 168). Of the submissions, 136 are pro-forma (subs 1 to 132 and 144 to 147) and have been submitted through a campaign style website<sup>13</sup>. They support Horizons focus on the effects of landfill leachate on the Tatana Drain and Hokio Stream and odour. They support all proactive measures to reduce damage to waterways and are in favour of closure of the landfill. They are opposed to the s127 application and consider that the requested changes will enable HDC to operate in secrecy.
35. A further 10 submissions (subs 133 to 143) are essentially pro-forma the same as the previous 136, but each with additional individual points made as set out in Table 2 below:

**Table 2: Pro-forma submissions with individual submission points**

<b>Submission No.</b>	<b>Additional Individual Points Raised</b>
133	Wants to see all rubbish trucked to the landfill in Marton
134	Concerned about effluent build-up in the Waikawa River
135	Alarmed at HDC management of natural resources

<sup>12</sup> See Tab 7, Volume 1 of the Hearing Folders for copies of all submissions and Tab 8, Volume 1 for a summary of the submissions.

<sup>13</sup> <https://dogooder.co>

136	HDC is disregarding the value the clean green brand adds to the economy
137	Briefly discusses intergenerational aspects
138	Notes that economic and business outcomes are not the only criteria when it comes to assessing the impact of waste disposal schemes.
139	HDC need to look into remedying the situation. Suggests the planting of vetiver. <sup>14</sup>
140	Clear that HDC want the NLG removed. Landfill is running at a loss. Tangata whenua have been steadfastly ignored. Lake Horowhenua is polluted, outflows through the Hokio Stream and is further polluted by leachate. Uncertainty regarding toxic loads in the Hokio Stream which runs out to where people gather food. Raises intergenerational issues.
141	Protecting water resources and refuse removal and processing are both government functions. Doing the latter in a way that jeopardises water is likely to incur significant costs and health impacts.
142	Finds it hard to believe that leachate into sand country will not enter aquifers
143	Sick of lies and double standards. No longer has faith in the CEO of Horizons or senior staff.

36. The remaining submissions are more individual in nature but raise a number of similar points. Table 3 identifies the key points raised in these submissions and links them to the relevant submissions.

**Table 3: Submissions 148 to 168**

Submission No.	Submission Points
148, 149, 150, 151, 152, 154, 155, 157, 158, 161, 163, 165,	Support efforts to protect and improve the Hokio environment, activity to reduce damage and pollution to waterways, wetland and coastal environment and/or to restore the environment to a healthy state

<sup>14</sup> A type of deep rooted grass often used for erosion control.

166, 168	
148, 149, 150, 151, 152, 154, 155, 156, 160, 161, 163, 165, 166, 167	Concerns about leachate (particularly contamination of Hokio Stream)
148, 149, 150, 151, 152, 157, 161, 162, 164, 165, 166	Support on-going consultation with community and Tangata Whenua
148, 149, 150, 151, 152, 154, 157, 159, 163, 166, 168	Support more stringent conditions
148, 149, 150, 151, 152, 154, 156, 157, 161, 165, 166, 168	Object to lessening of conditions
148, 149, 150, 151, 152, 157, 159, 161, 163, 165, 166	NLG should be retained
148, 149, 150, 151, 152, 154, 157, 161, 162, 165, 166	Opposed to siting of landfill in sand country, near waterbodies or coastal environment
148, 149, 150, 151, 152, 154, 155, 157, 161, 162, 164, 165, 166, 167, 168	Seek closure/decommissioning/remediation of landfill
161, 166	Calls for an investigation into the contents of the closed landfill to enable a response plan to be developed
153, 155, 157, 159, 161, 163, 165, 166, 168	Concerns regarding odour
154, 155, 161, 166, 167	Concerns with HDC business case and contracts and/or importation of waste from outside the District

155, 161, 165, 166	Landfill leachate at the Pot
156	Concern for future generations
157, 160, 161	Concerns regarding human health (water supplies, contact recreation and food sources)
148, 149, 150, 151, 152, 161, 162, 163, 164, 165, 166,	Cultural wellbeing/cultural concerns
167	Effects on heritage

## H. STATUTORY CONSIDERATIONS

### Statutory Framework

37. Applications made under s127 of the RMA to change or cancel consent conditions are treated as if they were a resource consent for a discretionary activity, with the proviso that the consent authority can only assess the effects proposed change or cancellation of conditions.
38. Sections 128 to 132 of the RMA enable consent authorities to review resource consent conditions and outline the process that must be followed for such reviews. Once the consent authority has made its decision to review the conditions of a resource consent and served notice on the consent holder, the process also has similarities to a resource consent process for a discretionary activity. The notification, submissions and hearing processes are the same as for a resource consent application and the same sections of the RMA generally apply.
39. Sections 130(1) and 132(2) make it plain that the Notice of Review is to be treated as an application for a resource consent and the consent holder, in this instance HDC, is treated as the applicant. In carrying out the review, the consent authority is required to have regard to the matters listed in s104 of the RMA (insofar as they are within scope



of the review) and to whether the activity allowed by the consent will continue to be viable after the change<sup>15</sup>.

40. Section 104B provides that a consent authority may grant or refuse applications for discretionary activities and, if it grants an application, may impose conditions under s108.
41. Section 104 requires consent authorities to have regard to any actual and potential effects on the environment, any relevant provisions of national environmental standards, national policy statements, regional policy statements and regional plans, and to have regard to any other matter the consent authority considers relevant and necessary to determine the applications.

### **Actual and Potential Effects on the Environment**

42. With respect to the assessment of effects of the proposals, the consent authority is, in my view, limited to the purpose and scope of the review and the changes to conditions proposed. This includes the effects of odour and leachate on the environment, and the effects of changes to the conditions as proposed by Horizons in its Notice of Review, HDC in its response to the review and its s127 application, and by submitters in their submissions. While only one submitter (MidCentral District Health Board) has proposed specific changes to the conditions, other submitters have made it clear that they are opposed to changes to some of the conditions. The HNLCG has engaged water quality and air quality experts who have been involved in expert caucusing and have, or will be, contributing to the recommendations within the respective JWS.
43. I have addressed effects on air quality, surface water quality, groundwater, food supplies, cultural wellbeing and heritage below. In section I of this report I have provided further analysis and comment of the effects of the individual changes to the consent conditions.

### **Air Quality**

44. As outlined by Mr Stuart Standen, in his s42A report, Horizons began receiving complaints regarding odour in late 2013, which have continued since. These complaints led Horizons to issue HDC with a significant non-compliance in respect of

---

<sup>15</sup> Section 131(1)(a), RMA

condition 3 of Discharge Permit 6011 in February 2015. As a result of the complaints, HDC commissioned MWH to investigate the landfill odour, which culminated in a report titled “Levin Landfill Odour Assessment”<sup>16</sup>. Section 3.2 of that report outlines the actual and potential effects of odour, including the following:

*“Typical odour effects reported by people include the following: nausea, headaches, retching, difficulty breathing, frustration, annoyance, depression, stress, tearfulness, reduced appetite, sleep deprivation and embarrassment in front of visitors. Odour effects, such as those described above, contribute to a reduced quality of life for the individuals who are exposed to the odour.”*

45. As can be seen in the map attached as Appendix 1 to this report, there are a number of dwellings along with the Ngatokowaru Marae in close proximity to the landfill. At section 3.1, the Levin Landfill Odour Assessment identifies some 16 properties as sensitive receptors near the landfill. These are properties where people may experience effects from odour such as that described above.
46. The MWH investigation identified a number of potential sources of odour, including the leachate collection chamber, stage two gas emissions, the active face and the leachate pond. The report also makes a number of recommendations to mitigate odour emissions from the site, including an investigation for the flare, various management practices for the leachate pond, ensuring adequate cover is available at the working face of the landfill (daily cover), effective capping for stage two (intermediate cover), walkover surveys, and the extraction of gas from the leachate collection sump or installation of a bio-filter, among others. It also recommended that HDC replace the existing flare with one that is more appropriately sized.
47. HDC also commissioned MWH to carry out monitoring of hydrogen sulphide (H<sub>2</sub>S) at the property owned by the Granges at 645 Hokio Beach Road. This property is the closest residential property to the landfill. The results of that monitoring are found in the letter/report, dated 10 July 2010 and titled “Continuous Ambient Air Quality Monitoring for Hydrogen Sulphide – Levin Landfill”<sup>17</sup>. The report noted that concentrations of H<sub>2</sub>S at the site were relatively low. It also indicated that there was an alternative source of H<sub>2</sub>S to the west and northwest of the site and suggested that HDC investigate the location of this potential source of H<sub>2</sub>S, as it may be associated with fugitive emissions associated with the closed landfill.

---

<sup>16</sup> See report under Tab 4, Volume 2 of the Hearing Folders.

<sup>17</sup> See Tab 5, Volume 2 of the Hearing Folders.

48. Ms Deborah Ryan (air quality scientist engaged by Horizons) has reviewed the Notice of Review, HDCs response, submissions and the MWH reports and has made recommendations on the proposed changes to the conditions. In summary, Ms Ryan agrees with the potential sources of odour that have been identified in the MWH reports and the review, including the leachate sump, the capping and the lack of flaring of landfill gases. Conditions have been proposed to address these sources of odour.
49. The above discussion briefly sets out the effects odour can have on the surrounding environment and the people living and working within that environment. It also highlights the ongoing nature of the odour issue at the landfill. In Section 2 of HDCs response to the review, HDC has challenged the need for the review of conditions. In my opinion, the on-going nature of this issue, the fact that it has arisen since 2013 (since the last review), and the level of potential effect it can have on persons in the receiving environment, justifies the initiation of the review of conditions.

### ***Water Quality***

50. At Section D of his report, Mr Standen outlines the background to the 'day lighting' of leachate to the Tatana Drain and the compliance action that has occurred in respect of this. At paragraph 29, Mr Standen outlines the view that condition 2 (of Permit 6010) is not robust enough to uphold a non-compliance action. He goes on to note that the drain was installed to capture leachate runoff and that the water quality parameters for the drain are still complied with. I agree with Mr Standen in that Condition 2 is inadequate to deal with the 'day lighting' of leachate directly to the Tatana Drain. The condition is in place to prevent the contamination to land from leachate from the landfill. The 'day-lighting' of the leachate into the Tatana Drain is essentially contaminating the water in the drain, not land. It is my view that the 'day lighting' raises questions about water quality in the Drain and the Hokio Stream. Furthermore, the way in which the existing consent condition is written does make it difficult to achieve positive environmental outcomes through the use of enforcement action.
51. Mr Standen also notes that all water quality samples collected from the Tatana Drain show that leachate is continuing to discharge to the drain, indicating that the 'day lighting' is an on-going issue, and is an issue that is not currently adequately addressed by the conditions of discharge permit 6010.
52. Mr Logan Brown (Horizons Freshwater and Partnerships Manager) has reviewed the monitoring data for the Tatana Drain and Hokio Stream and outlined the actual and

potential effects of the leachate on these environments. He has also identified the values associated with the streams under One Plan and noted that the current consent conditions (currently ANZECC guidelines for Livestock Watering) for water quality do not provide for all of these values. Given the role the Hokio Stream plays as a migratory route for native fish species into the Lake Horowhenua catchment, Mr Brown is of the view that standards in conditions for the Hokio Stream and its tributaries would be more appropriately set in line with the ANZECC guidelines for the level of protection of 95% of Aquatic Ecosystems.

53. With regard to the Tatana Drain, Mr Brown outlines his view that the Drain meets the definition of a river in terms of the RMA. His rationale for this is detailed at paragraph 17 of his report. I agree with Mr Brown's rationale that the Tatana Drain meets the definition of 'river' under the RMA. I also note that the Drain is located in a naturally low lying wet area of land. During the site visit on 11 March 2016, there was a continuous flow of water in the Drain that increased as one moved downstream. Whether the Tatana Drain is a river, or not, is an important fact to establish in terms of the application of the One Plan objectives, policies and water quality targets, as they generally only apply to water in rivers<sup>18</sup> (as defined in the RMA). It is noted that the NPSFM simply applies to freshwater regardless of whether it is in a river or not<sup>19</sup>.

---

<sup>18</sup> See Objective 5-2(a) which states (emphasis added):

(a) *Surface water<sup>^</sup> quality is managed to ensure that:*

(i) *water<sup>^</sup> quality is maintained **in those rivers<sup>^</sup> and lakes<sup>^</sup>** where the existing water<sup>^</sup> quality is at a level sufficient to support the Values in Schedule B*

(ii) *water<sup>^</sup> quality is enhanced **in those rivers<sup>^</sup> and lakes<sup>^</sup>** where the existing water<sup>^</sup> quality is not at a level sufficient to support the Values in Schedule B*

Also see the user guide to the water quality targets in Schedule E and the headings to Table E.1, E.2 and E.3 which all refer to water quality targets for rivers.

<sup>19</sup> Freshwater is defined in the RMA as "*fresh water means all water except coastal water and geothermal water*"

**Photo 1: Tatana Drain (looking down stream and adjacent to the landfill boundary)**



**Photo 2: Tatana Drain (looking upstream from Hokio Beach Road)**



54. Mr Brown's report records that sampling has shown extremely elevated levels of ammoniacal nitrogen at all of the sites monitored. He states that the Tatana Drain falls within Band D of the National Policy Statement for Freshwater (NPSFM), which is below the National Bottom Line (NBL). He notes that the NBL value for ammonia is based on the level when ammonia starts approaching acute impact (i.e. risk of death) for sensitive species<sup>20</sup>. It is his opinion that the ammonia concentrations in the drain would be having a significant adverse effect on any aquatic life that should be present, and that it is most likely that most aquatic life is absent from the drain due to the impact of the leachate.
55. Mr Brown also discusses nitrate toxicity, noting that monitoring sites SW1 and SW4 are within Band A under the NPSFM, while site SW3 is within Band B and SW2 is in Band C. The narrative for Band C is that this level of nitrate toxicity denotes growth effects on up to 20% of species but with no acute effects.
56. With regard to the discharge of the Tatana Drain to the Hokio Stream, Mr Brown states that there is no discernible difference between the upstream and downstream monitoring points. Mr Brown expresses a view that the absence of observable effect may be due to the lack of monitoring data, rather than a lack of effect but that without

---

<sup>20</sup> At paragraph 20 of his report, Mr Brown expresses some caution in relation to annual median values given the limited sampling rounds but is confident in the maximum values.

more data this is currently unknown. Mr Brown recommends that more frequent monitoring of the Hokio Stream takes place and that the upstream monitoring site (HS1) be moved further upstream to ensure it is fully independent of any potential influence of the groundwater plume from the closed landfill. With respect to monitoring site HS1, I have noted that the Figure 2 that accompanied the original decision as approved by Environment Court consent order in 2002 does have the HS1 monitoring site well upstream of the landfill. As such, I consider that no change is required to the conditions of consent. However, I recommend that HDC ensures that it is monitoring at the upstream site in the correct location as shown on Figure 2 of the consent.

57. Despite what condition standards currently apply to the Hokio Stream and the Tatana Drain, it is clear that the leachate is having a more than minor effect on the Tatana Drain. However, it should be noted that based on the information available, no discernible differences in contaminant levels between upstream and downstream are observed in the Hokio Stream.

### ***Effects Raised by Submitters***

58. Submitters have raised concerns about effects on groundwater, water and food supplies, cultural wellbeing and heritage. Leachate from the closed landfill is entering shallow groundwater as is evident by the day lighting into the Tatana Drain. Currently condition 11(a) of Discharge Permit 6010 requires HDC to notify Horizons if monitoring of shallow groundwater shows that it exceeds the ANZECC guidelines for Livestock Watering. This initiates a process where Horizons may require HDC to prepare and implement a mitigation or remediation plan. Condition 12 of Permit 6010 imposes deep groundwater to be tested to the Ministry of Health's Drinking Water Standards for NZ 2000. The application of livestock watering standards to shallow groundwater and drinking water standards to deep groundwater is, in my view appropriate, given the most likely uses to be made of these sources of water. I am not aware of any exceedance of these standards at any of the groundwater monitoring bores.
59. Effects on water supplies are discussed in paragraph 58 above. In terms of food supplies, it is considered by submitters that the leachate entering groundwater and the Hokio Stream will be adversely affecting food supplies available from the stream itself and from the coastal environment where contaminants ultimately end up. As discussed under the water quality section above, it is likely that aquatic life is severely compromised in the Tatana Drain due to ammoniacal nitrogen levels, thereby



impacting on any potential food sources from that drain. Based on the current data available, adverse effects of leachate are not being observed in the Hokio Stream. This may be due to a lack of data, but also, as Mr Brown explains at paragraph 34 of his report, the water quality in the Hokio Stream is heavily influenced by Lake Horowhenua, which is known to be in a degraded state. While leachate entering the Hokio Stream may not be desirable, and it would no doubt contribute to degradation of water quality and life supporting capacity, it is difficult to single it out as a significant contributor to a decline in food supplies.

60. Several submissions raise concerns regarding the adverse effects of the landfill and the associated leachate on cultural wellbeing. Iwi have a long association with the Hokio environment, including Lake Horowhenua, the Hokio Stream, the coastal environment at Hokio Beach and the wider surrounding area. The Ngatokowaru Marae (Ngati Pareraukawa) is located adjacent to the Hokio Stream just a short distance upstream from the confluence with the Tatana Drain. If the Hokio Stream was in an improved state local iwi would be more able to source food locally. Recreational opportunities would also be improved. I expect that the relevant submitters will elaborate on their concerns in respect of cultural wellbeing in their evidence and presentations to the Hearing Panel.
61. Submitter 167 has raised the operational effects on environment and heritage as a concern. I am not aware of any heritage values that will be affected by the proposed changes to the conditions, and this is not a matter that is subject of the review. Unless the submitter elaborates further, I consider that no further consideration of this matter is required.

### **Relevant Statutory Provisions**

62. Statutory documents under section 104(1)(b) that are relevant to this review are the National Policy Statement for Freshwater Management (NPSFM) and the One Plan. The NPSFM is only relevant to aspects of the review related to water quality.

### ***National Policy Statement for Freshwater Management***

63. The NPSFM directs regional councils to:
  - a. identify freshwater values for water bodies within their region and set freshwater objectives that accord with the values identified in those water



bodies; and

- b. set freshwater limits, targets and methods in regional plans to achieve the freshwater objectives and avoid over-allocation.

64. The freshwater objectives, limits, targets and methods created by regional councils must “give effect to” the objectives of the NPSFM.<sup>21</sup>
65. In my opinion, Horizons has not fully incorporated the above into the One Plan. Whilst the One Plan does have a number of provisions relating to freshwater, which have largely been set in a process similar to the National Objectives Framework<sup>22</sup>, freshwater quality limits and/or targets are yet to be determined.
66. Objectives A1 and A2 of the NPSFM are relevant to this application and seek to:
- safeguard life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of freshwater;
  - safeguard the health of people and communities, at least as affected by secondary contact with freshwater.
  - maintain or improve fresh water quality while protecting significant values of outstanding waterbodies and wetlands, and improving the quality of water in waterbodies that have been degraded by human activities to the point of being over-allocated.
67. Policy A3 of the NPSFM enables regional councils to impose conditions on discharge permits to ensure the limits and/or targets can be met. As no limits or targets have been set in the One Plan, I consider that this policy has limited application to this review. Policy A4 was incorporated into the One Plan via Plan Change 1 in April 2016.
68. Despite whether Horizons has given full effect to the NPSFM or not, I consider that the objectives are very clear in what they seek to achieve. The Attribute Tables

---

<sup>21</sup> NPS-FM Policy A1(a)

<sup>22</sup> The One Plan was largely developed before the NPSFM was first took effect in 2011 and well before the National Objectives Framework took effect in 2014. However, the One Plan has defined water management zones (essentially freshwater management units) and has identified values for each zone. Water quality targets (effectively attributes and attribute states) have been assigned to each water management zone in order to protect those values that apply to each zone. Policies 5-3, 5-4 and 5-3 provide intended outcomes for water management zones (linked back to the water quality targets) based on whether the water quality targets are met, not met or existing water quality is unknown, loosely taking the place of freshwater objectives.

(incorporating National Bottom Lines) in Appendix 2 of the NPSFM also provide useful descriptions of the effects that arise from differing levels of contaminants in waterbodies.

69. With regard to the Tatana Drain, the life supporting capacity and indigenous species and ecosystems are not currently being safeguarded and little appears to have been done to improve the water quality in the drain since the 'daylighting' of leachate was raised as an issue, despite it being degraded by human activities. In my opinion, the conditions proposed in the notice of the review are consistent with the objectives of the NPSFM and will improve the quality of water in the Tatana Drain and assist in safeguarding the life supporting capacity of the drain.
70. Objective D1 and Policy D1 of the NPSFM seek to provide for the involvement of iwi and hapu and to ensure that tāngata whenua values and interests are identified and reflected in the management of and decision making regarding fresh water and freshwater ecosystems.
71. The applications have been publicly notified and a number of iwi and hapu have provided submissions. The submissions have requested that Tangata Whenua continue to have an active voice through the NLG. HDC has proposed changes to the conditions regarding the NLG. However, it has not proposed to exclude representation from Ngati Pareraukawa, being the most immediately located hapu.

### ***One Plan***

72. The One Plan is a combined regional policy statement (RPS) and regional plan for the Manawatu-Wanganui Region. Part 1, consisting of Chapters 1 to 10, is the RPS and Part 2, consisting of chapters 11 to 19, forms the Regional Plan. There are a number of schedules (which are components of the Regional Plan), which identify surface water management zones (Schedule A), surface water management values (Schedule B) and surface water quality targets (Schedule E).
73. Chapter 2 of the One Plan addresses resource management issues of significance to hapu and iwi. Issue 2-1 identifies water quality as a matter of significance, and specifically mentions the Hokio Stream as having suffered degradation which continues and is considered to be culturally unclean. It also notes that access and availability of clean water to exercise cultural activities such as food gathering and baptismal rituals

have diminished.

74. Objective 2-1 requires that regard be had to the mauri of natural and physical resources to enable hapu and iwi to provide for their social, economic and cultural wellbeing and that kaitiakitanga must be given particular regard and the relationship of hapu and iwi with their ancestral land, water, sites, wahi tapu and other taonga must be recognised and provided for through resource management processes. It is clear that iwi and hapu have a long established relationship with Lake Horowhenua, Hokio Stream and surrounds. The hapu and iwi who have submitted on the applications<sup>23</sup> have expressed support for efforts to protect and improve the Hokio Stream and are concerned at any potential contamination of the stream. It is my opinion that to enable hapu and iwi to derive any social, economic and cultural wellbeing from the Hokio Stream, the water quality and mauri of that stream need to be significantly improved. In my view, the conditions proposed by Horizons will assist with this outcome.
75. Chapter 3 of the One Plan deals with a number of matters including infrastructure and waste. Objective 3-1 requires that regard be had to the benefits of infrastructure and other physical resources of regional or national importance. Policy 3-1 requires that Horizons and HDC recognise solid waste facilities, including landfills, as being a physical resource of regional or national importance, and to have regard to the benefits derived from the operation of such activities. Policy 3-3 deals with adverse effects of physical resources with regional or national importance on the environment. It requires Horizons and HDC to recognise and provide for the operation, maintenance and upgrading of the landfill when managing any adverse environmental effects arising from the operation of the landfill.
76. In my opinion, the changes to the conditions proposed by Horizons recognise that the landfill is a resource of regional benefit and provides for its continued operation whilst mitigating effects that have arisen from that operation.
77. Objective 3-5 requires Horizons and HDC to work together to minimise the quantity of waste generated in the Region and ensure it is disposed of appropriately and to manage the effects from contaminated land. Policies 3-8, 3-9, and 3-11 outline a waste reduction hierarchy, consent information requirements and landfill management. With respect to the waste reduction hierarchy and consent information requirements

---

<sup>23</sup> Including Ngati Pikiahu-Waewae ki Tokorangi, Ngati Manomano, Ngati Pareraukawa, Ngati Kikopiri, Ngati Kauwhata

(waste reduction and hazardous substances), the review and s127 applications are dealing with limited matters (primarily odour from the landfill and leachate from the closed landfill) and is not a new resource consent. I consider that these policies are of little relevance to the review. Policy 3-11 outlines a number of guidelines which are relevant to the operation of landfill. Ms Ryan has referred to a number of these in her assessment of the odour issues, as reference in her report.

78. Chapter 5 from the RPS and Chapter 14 from the Regional Plan deal with water quality and discharges. Objective 5-1 seeks that surface water bodies are managed in a manner which safeguards their life supporting capacity and recognises and provides for the values in Schedule B. Objective 5-2 seeks that water quality is managed to ensure that:

- Water quality is maintained in rivers where existing water quality is at a level sufficient to support the Schedule B values.
- Water quality is enhanced in rivers where existing water quality is not at a level sufficient to support the Schedule B values.

79. Policy 5-2 specifies that the Schedule E water quality targets must be used to inform the management of surface water quality in the manner as set out in Policies 5-3, 5-4 and 5-5. These policies essentially aim to achieve Objective 5-2 and essentially require compliance with the water quality targets where they are already met and enhancement of water quality where the existing water quality fails to meet the water quality targets. Where existing water quality is unknown, Policy 5-5 requires the maintenance or enhancement, having regard to the likely effects of an activity in the Schedule B values.

80. Objective 14-1 deals with the management of discharges to land and water and seeks to ensure the management of such activities is carried out in a manner that safeguards life supporting capacity of water and recognises and provides for the values in Schedule B, provides for the objectives and policies in Chapter 5 and where a discharge is to land, as in this instance, it avoids, remedies or mitigates adverse effects on surface water or groundwater. Policy 14-2 is specific to discharges to land and require that when setting consent conditions, Horizons must have regard to the degree of compliance with the approach for managing surface water quality as set out in Chapter 5 where the discharge may enter surface water, and avoiding, as far as

reasonably practicable any adverse effects on surface water bodies.

81. Mr Brown has identified the water management zone, sub-zone and applicable values at paragraph 13 of his report. He has also stated that the ammoniacal nitrogen and soluble inorganic nitrogen (SIN) concentrations in the Tatana Drain exceed the water quality targets for that sub-zone<sup>24</sup>. The Hokio Stream exceeds the SIN and dissolved reactive phosphorus (DRP) targets, and complies with the ammoniacal nitrogen target, at both the upstream and downstream monitoring points<sup>25</sup>. Efforts to avoid discharge of leachate into the Tatana Drain will ensure enhancement of the water quality within the Drain. Although, it may not be reflected in monitoring results, it would also remove a small portion of the contaminant load in the Hokio Stream. Overall, it is my opinion that the conditions proposed by Horizons in its Notice of Review are consistent with the overall policy direction of the One Plan.
82. Chapter 7 of the RPS and Chapter 15 of the Regional Plan address air quality and discharges to air respectively. Objective 7-1 seeks a standard of ambient air quality that is not detrimental to amenity values, human health, property or life supporting capacity of air. Policy 7-2 sets regional standards for ambient air quality and in terms of odour specifies that a discharge must not cause any offensive or objectionable odour beyond the property boundary. Objective 15-1 seeks that the management of air quality has regard to maintaining or enhancing ambient air quality, meets the regional ambient air standards and manages air quality so that it is not detrimental to amenity values. Policy 15-2 sets out that when setting consent conditions, Horizons must have regard to the degree of compliance with the regional ambient air standards set out in Policy 7-2 and the guidelines in section 15.3 for managing noxious, dangerous, offensive and objectionable effects.
83. Condition 3 of Discharge Permit 6011 sets the regional ambient air standards for odour as a condition of consent. The joint witness statement (JWS) from the air quality experts shows that Ms Ryan (for Horizons) and Ms Louise Wickham (for the HNLCC or CNLG) consider that the landfill is non-complaint with condition 3. HDCs expert, Mr Doug Boddy considers that it is a potential non-compliance and notes that none of the odour complaints have been verified by a Regional Council compliance officer. It is noted that all experts agree that the odour complaints are credible. The submission

---

<sup>24</sup> Paragraph 22 of Mr Brown's s42A report.

<sup>25</sup> Tables 6 and 7, paragraph 38 of Mr Brown's s42A report.

from the Grange's is clear in that the odour has been an on-going issue and is adversely impacting on their daily lives.

84. The conditions proposed in the Notice of Review are aimed at mitigating odours from the landfill that potentially affect the amenity of the surrounding area. In this respect, it is my view that the conditions proposed and recommended in this report are consistent with the objectives and policies of the One Plan.

### ***Other Relevant Matters***

85. Section 104(1)(c) of the RMA requires the consent authority to have regard to any other matter it considers relevant and reasonably necessary to determine an application. In this instance I consider that the Lake Horowhenua Accord (2013) (the Accord) to be relevant to this review. The Accord sets out a vision, objectives, key issues and management goals for the restoration of Lake Horowhenua and the Hokio Stream. The Accord puts a framework in place for the overall improvement of Lake Horowhenua and the Hokio Stream. As a signatory to the Accord, HDC has shown a commitment to assisting in this process of environment improvement in the catchment.

## I. CONDITIONS

86. In this section of my report I have made a comparison of the different versions of conditions that have been proposed, including those proposed in the Notice of Review, HDCs response and the s127 application. In the final column I have provided the conditions that I am now recommending, based on the HDC response, submissions and JWS. I have also included comments where explanation is considered necessary.

### Discharge Permit 6010 – discharge landfill leachate onto and into land

Condition Number	Horizons Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
Condition 2			<del>Landfill leachate shall not contaminate adjoining land.</del>	I consider that this condition is still relevant to the overall management of leachate on the site and recommend that it be retained. As outlined by Mr Standen, at paragraph 31 of his report, there are potential situations where the condition may be required to avoid or mitigate effects on the environment.
New Condition 2A	<u>Within six months of the commencement date of the decision of the 2015 review of conditions, the consent holder shall cease the discharge of landfill leachate to the Tatana Drain.</u>	<del>Within six months of the commencement date of the decision of the 2015 review of conditions, the consent holder shall cease the discharge of landfill leachate to the Tatana Drain.</del>		<p>It is noted that Submitter 160 suggested a change to this proposed new condition as follows:</p> <p><i>Within six months of the commencement date of the decision of the 2015 review of conditions, the consent holder shall cease the discharge of <u>any</u> landfill leachate <del>to</del> <u>from</u> the Tatana Drain <u>into the Hokio Stream</u>.</i></p> <p>The suggested condition does not take into account the effects on the water quality and aquatic life in the Tatana Drain itself. The quality of water within the drain is severely compromised and it is considered that efforts are required to rectify this issue. It is not unusual for unlined landfills to have cutoff drains installed to intercept leachate and for that leachate to be disposed of through a means where it has less impact on the environment.</p> <p>I recommend that the condition as proposed in the Notice of Review be inserted into the Permit.</p>

Condition Number	Horizons Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
Condition 3	<p>Proposed change to Table C to include a new surface water monitoring location called 'Tatana Drain (TD1)'.</p> <p>Proposed change to Table D to include a new surface water monitoring location called 'TD1' having location 'Tatana Drain'.</p>	<p>HDC agrees with the proposed and also proposes various minor changes to Tables A, B, C and D under condition 3:</p> <ul style="list-style-type: none"> <li>Amend the frequency description for the Deep Aquifer (Table A), Shallow Aquifer (Table B) Monitoring Wells, and Water Monitoring Locations (Table C) since the "2 year" and "1 year" periods were completed following the 2010 review.</li> <li>Include the sampling of bore G2s in Table B since this is currently occurring.</li> <li>Include for sampling of a second new surface monitoring location called 'TD2' within Tatana Drain in Table C.</li> <li>In Table D, amend the locations for bores G1s and G1d, and include bore G2s and surface water monitoring locations of Tatana Drain.</li> </ul>		<p>I agree with the changes that HDC has proposed in its first bullet point.</p> <p>Mr Brown has recommended more frequent monitoring so that it is undertaken on a monthly basis between November to April (inclusive). I recommend that changes are made to Table C to accommodate this, and have included such changes in the condition schedule in Appendix 2.</p> <p>I agree with the proposed changes as outlined in the second, third and forth bullet points, and recommend that those changes be made to the relevant tables in Condition 3.</p>
Condition 5			The results of monitoring under Conditions 3 and 4 of this Permit shall be reported to the Regional Council by <del>31 August</del> 30 September each year for the duration of this Permit.	Agreed. Mr Standen has reviewed this proposed change and is satisfied that it will not cause any concerns to the compliance monitoring of the consent. I recommend that the proposed change be accepted.
Condition 9			The Permit Holder shall report the results of the monitoring to the Neighbourhood Liaison Group by <del>31 August</del> 30 September each year for the duration of the Permit.	Agreed. Mr Standen has reviewed this proposed change and is satisfied that it will not cause any concerns to the compliance monitoring of the consent. I recommend that the proposed change be accepted.
Condition 10			<del>10 If a laboratory is used for water quality analyses which do not have independent accreditation for the parameters measured, then on each sampling occasion duplicate samples from a least one sampling location shall be analysed by a laboratory with independent accreditation for the parameters measured. Continued analysis by the unaccredited laboratory shall be at the discretion of the Regional Council.</del>	<p>Mr Standen has reviewed this proposed change and discussed it at paragraphs 34 to 36 of his report. I agree with his analysis and recommend that the condition be replaced with the following:</p> <p><i>All analyses on water quality samples shall be carried out by an IANZ accredited laboratory.</i></p>



Condition Number	Horizons Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
Condition 11(a)	Should any shallow aquifer groundwater <del>and surface water</del> parameters tested for under Condition 3 of this consent exceed the Australian and New Zealand Environment and Conservation Council Water Quality Guidelines (2000) for Livestock Watering, the Permit Holder shall report to the Regional Council as soon as practicable on the significance of the result and, where the change can be attributed to landfill leachate, consult with the Regional Council to determine if further investigation or remedial measures are required.	Should any shallow aquifer groundwater <del>and surface water</del> parameters tested for under Condition 3 of this consent exceed the Australian and New Zealand Environment and Conservation Council Water Quality Guidelines (2000) for Livestock Watering, the Permit Holder shall report to the Regional Council as soon as practicable on the significance of the result and, where the change can be attributed to landfill leachate, consult with the Regional Council to determine if further investigation or remedial measures are required.		In his report, Mr Brown has observed that the ANZECC guidelines for Livestock Watering do not provide for the values assigned to the Hokio Stream its tributaries (including the Tatana Drain). He states that more appropriate standards would be the ANZECC guidelines for the level of protection of 95% of species. This is consistent with the changes to the conditions as recommended in the Notice of Review and I recommend that the words “and surface water” be removed from the condition.
New Condition 11(aa)	<del>Should any surface water parameters tested for under Condition 3 of this consent, including the Tatana Drain location, exceed the Australian and New Zealand Environment and Conservation Council Water Quality Guidelines (2000) for 95 per cent protection levels for Aquatic Ecosystems the Permit Holder shall report to the Regional Council as soon as practicable on the significance of the result. Where the change can be attributed to landfill leachate the Consent Holder shall consult with the Regional Council to determine if further investigation or remedial measures are required.</del>	<del>Should any surface water parameters tested for under Condition 3 of this consent, including the Tatana Drain location, exceed the Australian and New Zealand Environment and Conservation Council Water Quality Guidelines (2000) for 95 per cent protection levels for Aquatic Ecosystems the Permit Holder shall report to the Regional Council as soon as practicable on the significance of the result. Where the change can be attributed to landfill leachate the Consent Holder shall consult with the Regional Council to determine if further investigation or remedial measures are required.</del>		As per the above, it is considered that the ANZECC guidelines for the level of protection of 95% of species is the appropriate standard to apply to the Hokio Stream and Tatana Drain. I recommend that this condition be incorporated into the consent.
Condition 15(f)			The Permit holder shall submit an annual report to the Regional Council by <del>31 August</del> <u>30 September</u> each year for the duration of this Permit documenting the condition of the unlined landfill and any maintenance carried out during the previous year. The annual report shall address but not be limited to those aspects listed in Conditions 15(a) to (e) above. The annual report shall include a plan of the unlined landfill specifically documenting the shape of the closed landfill and any changes during the previous year. [The annual report can be written in conjunction with the annual report required as part of Condition 14 for Consent Number 6009].	Agreed

Condition Number	Horizons Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
Condition 18			<del>The rate of application of leachate irrigated to land shall not exceed 200 kg Nitrogen/hectare per year.</del>	<p>Mr Standen has considered the proposed deletion of conditions 17 through to 24 and conditions 26 and 27 relating to the irrigation of leachate on the landfill site. Mr Standen notes that HDC has not irrigated to the site for approximately five years. HDC states that leachate has been treated at the Levin WWTP since about 2009.</p> <p>Mr Standen has recommended a condition to prohibit the discharge of leachate onto or into land. I agree that a condition limiting discharges to land on the site is required. Discharge Permit 6010 authorises the discharge of leachate to land, and the cancellation of conditions 17 to 24 and 26 and 27 will mean that there are no controls to any future discharges of leachate to land. It is noted that the irrigation of leachate can only apply to leachate collected from the lined landfill. Therefore I recommend a condition be imposed to replace the cancelled conditions that states:</p> <p>The Permit Holder shall ensure that no leachate from the lined landfill is irrigated or otherwise discharged to land.</p>
Condition 19			<del>There shall be no ponding or runoff of leachate on or beyond the irrigation areas.</del>	As above
Condition 20			<del>Subject to Condition 19 of this permit, application of leachate on to soil shall not exceed 50 millimetres per day. Notwithstanding, the maximum rate of application shall not exceed 5 millimetres per hour.</del>	As above
Condition 21			<del>There shall be no discharge of offensive or objectionable odour at or beyond the legal boundary of the Levin Landfill property as shown on Figure 1 resulting from leachate.</del>	As above
Condition 22			<del>Should the quality of leachate being irrigated exceed the STV parameters set out in the Australian and New Zealand Environment and Conservation Council Water Quality Guidelines (2000) for metals in Irrigation Water the Permit Holder shall report to the Regional Council as soon as practicable on the significance of the result and in consultation with the Regional Council determine if further investigation or remedial measures are required.</del>	As above
Condition 23			<del>The daily volume of leachate irrigated to land shall be metered and recorded.</del>	As above
Condition 24			<del>The Permit Holder shall make regular and at least weekly, inspections of the irrigation system, including pumps, pipes, irrigators and vegetation to ensure that the system is operating efficiently and that vegetation is in good health.</del>	As above

Condition Number	Horizons Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
Condition 26			<p><del>A plan of the leachate irrigation system shall be prepared to the satisfaction of the Regional Council's Environmental Protection Manager nine months prior to placement of refuse on the lined landfill. The plan shall include:</del></p> <p><del>a. A map showing areas to be irrigated;</del></p> <p><del>b. Design of the recirculation, treatment and irrigation systems;</del></p> <p><del>c. Contingency measures in case of failures in the irrigation system;</del></p> <p><del>d. Criteria for installing aerators in the leachate pond;</del></p> <p><del>e. Assessment of options for recirculating leachate over the lined landfill;</del></p> <p><del>f. Assessment of groundwater profile beneath the irrigation area and effects leachate irrigation will have on groundwater;</del></p> <p><del>g. Groundwater and soil monitoring programme, including a map showing sampling locations; and</del></p> <p><del>i. Any other relevant matter.</del></p>	As above
Condition 27			<p><del>The Permit Holder shall keep a log of:</del></p> <p><del>a. The dates and times of leachate irrigation;</del></p> <p><del>b. The total volume of leachate irrigated daily;</del></p> <p><del>c. The volumes of leachate irrigated to specific areas;</del></p> <p><del>d. Weather and ground conditions during irrigation;</del></p> <p><del>e. Observations made during the weekly inspections of the pump, irrigation system and irrigation areas; and</del></p> <p><del>f. Repairs and maintenance carried out on the irrigation system.</del></p> <p><del>Copies of this log shall be forwarded to the Regional Council's Environmental Protection Manager on 28 February and 31 August of each year that the irrigation system is operated.</del></p>	As above

Condition Number	Horizons Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
Condition 30			<p>The Regional Council <del>shall</del> <b>may</b> initiate a <del>publicly notified</del> review of Conditions 3, 4, 11 (a) – (e), 12, 13, 14, 24, 27, 28 and 29 of this permit <b>at ten yearly intervals after the commencement date of the decision of the 2015 review of conditions in April, 2015, 2020, 2025, 2030 and 2035, unless the Neighbourhood Liaison Group (NLG) agrees that a review is unnecessary.</b> The reviews shall be for the purpose of:....."</p>	<p>A number of submitters have expressed their objection to the changes proposed by HDC to the review conditions. I understand that the conditions were imposed on the various consents during the last review in 2010, by agreement between the parties, including the Regional Council.</p> <p>There are three elements to the proposed change. First is to remove the compulsory and publicly notified nature of the review and to replace it with a discretionary element. The second is to amend the possible frequency of the review and the third is related to the first and seeks to remove the discretionary powers granted to the NLG.</p> <p>Even though the condition was introduced into the consents by way of agreement, there is now an application before Horizons to amend it. In my opinion, s128 provides a discretion to the consenting authority as to whether it will review the conditions of consent or not. Section 128 does not require that a review take place. Reviews of conditions can be costly and are often seen to derogate the rights of the consent. Therefore, it is appropriate that a discretion remains in place as to whether to initiate a review or not. With regards to notification, s130(3) of the RMA specifies that s95 to 95G (which set out the notification decision process) apply to reviews. Whether to review the conditions of consent or to notify a review should rely on the provisions provided for that purpose in the RMA and not be overridden by a consent condition. In this respect, I agree with the proposed change to replace the word "shall" with "may" and to remove the words "publicly notified".</p> <p>I do not agree with the requested change to ten yearly intervals for when a review can take place. In my view the current issues of odour and the daylighting of leachate only seem to have come to light since the previous review in 2010. The landfill site is an active site and things can change within a short time period. I consider that five years continues to be an appropriate for potential reviews.</p> <p>With the removal of the compulsory nature of the review, the discretionary power provided to the NLG becomes redundant. As such I agree with its removal.</p>

#### Discharge Permit 6009 – discharge solid waste to land

Condition Number	Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
------------------	------------------	------------------------	----------------------	-------------------------

Condition Number	Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
Condition 8			The Permit Holder shall develop and implement a procedure for the landfill operator, such that potentially hazardous material, as listed in Annex 1 attached to and forming part of this permit, will not be accepted for disposal at the Levin landfill without specific authorization. The Operations Manager of the Horowhenua District Council, or some other designated person, is able at their discretion to accept quantities of such wastes. The waste shall be accompanied by a Hazardous Waste Manifest, as listed in Annex 1, which will form part of the permanent record and shall be reported <del>by</del> to the Regional Council by <del>31-August</del> 30 September each year for the term of this Permit.	Agreed – same reasons as discussed in relation to conditions 5 of Discharge Permit 6010.
Condition 14	The Permit Holder shall update the Landfill Management Plan in respect of the operations on the lined landfill to the satisfaction of the <del>Environmental Protection Regulatory</del> Manager at the Regional Council within six months <del>of the completion of the review of the consents of the commencement date of the decision of the 2015 review of conditions of consent.</del> The Landfill Management Plan shall include, but not be limited to:	Agreed		Recommend that the proposed changes are made to the condition.  The air quality experts have agreed that an odour management plan (OMP) should be prepared and referenced in the consent conditions. It would be logical to have the OMP incorporated into the Landfill Management Plan. As such, I recommend an additional clause to be added to condition 14 to require the inclusion of an OMP.
Condition 14(m)		<del>The feasibility of carrying out greenwaste composting operations on top of the closed landfill shall be assessed. Where it is deemed to be feasible, the composting operations shall be incorporated into the Closed Landfill Aftercare Management Plan.</del>		Agreed. Mr Standen has assessed this request at paragraph 37 of his report, and has noted that the feasibility study has been completed which concluded that the composting is not feasible. Therefore I recommend that the condition be cancelled as requested.
Condition 14			".....The Permit holder shall submit an annual report to the Regional Council by <del>31-August</del> 30 September each year for the duration of this Permit documenting the condition of the unlined landfill and any maintenance carried out during the previous year. The annual report shall address but not be limited to those aspects listed in Conditions 14(n) to 14(r) above. The annual report shall include a plan of the unlined landfill specifically documenting the shape of the closed landfill and any changes during the previous year related to Condition 14(q) [The annual report can be written in conjunction with the annual report required as part of Condition 15 (f) for Consent Number 6010]	Agreed – same reasons as discussed in relation to conditions 5 of Discharge Permit 6010.

Condition Number	Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
Condition 28(d)		'A protective layer of sand 100 mm thick on the base overlain by a 300 mm thick gravel drainage layer, and on the sides <del>a protective layer of sand 300 mm thick that will be placed progressively as the landfill rises</del> slopes a confining layer of gravel 300 mm thick, lain on top of a protective geofabric and geogrid, appropriately designed for the site conditions'		Agreed. Mr Standen addresses this requested change at paragraph 38 of his report. He states that the change has already been implemented, with Horizons approval. Therefore I recommend that the change to the condition be made as proposed.
Condition 29		<del>'Nine months prior to the placement of refuse on the lined landfill, the Permit Holder shall present a Management Plan to the Regional Council including the same items as those described in Condition 14 (a) to (m)'</del>		This condition has been complied with and is now redundant. I recommend that it be cancelled as requested.
Condition 31			The Regional Council <del>shall</del> may initiate a <del>publicly notified</del> review of Conditions 2, 8, 14 (a) to (m), 28, 29, 32, 33, and 34 of this permit at ten yearly intervals after the commencement date of the decision of the 2015 review of conditions <del>in April 2015, , 2025, and 2035,.</del> The reviews shall be for the purpose of:	Agreed for the same reasons as discussed in relation to condition 30 of Discharge Permit 6010. In addition, I note that the HDC request in relation to this particular review condition has omitted part of the condition. I recommend that the reference to the NLG also be removed from the condition in a similar fashion to that recommendation for condition 30 of discharge permit 6010.



Condition Number	Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
Condition 32		<p><u>'The Permit Holder shall re-establish, chair, manage and conduct a Neighbourhood Liaison Group (NLG) in 2016. The following shall each be eligible to be members have one representative:</u></p> <ul style="list-style-type: none"> <li>a. <del>Representation from</del>The Lake Horowhenua Trustees and Ngati Pareraukawa;</li> <li>b. The owners <del>and occupiers</del> of those properties adjoining the Levin Landfill property described as A through to N on Drawing 2181 <del>attached</del>;</li> <li>c. <u>A technical advisor as appointed by the Permit Holder. Other parties who are invited from time to time as agreed by the Permit Holder and/or the NLG, including but not limited to original submitters; and</u></li> <li>d. <del>A representative from each of</del> The Lake Horowhenua District Council and the Regional Council, <del>being consent authorities.</del></li> <li>e. <u>The Permit Holder (in addition to the representative nominated under 32(d))'.</u></li> </ul>		<p>Conditions 32 to 34 establish a community liaison group (NLG) outlining membership, frequency of meetings and roles and responsibilities. HDC have proposed to amend these conditions to rationalise membership of the group and to define a purpose for the group. A number of submitters are opposed to the changes to these conditions and see the changes as an erosion of rights and as an attempt to exclude the community voice from the decision making process.</p> <p>In my experience, for such liaison groups to functionally operate they do need clear terms of reference that outline the groups purpose, membership and the respective roles and responsibilities of the members.</p> <p>With respect to Condition 32, I note that the Lake Horowhenua Trustees and Ngati Pareraukawa are different entities and should be listed separately to make it clear that each entity is entitled to membership of the NLG. I disagree with the proposed exclusion of occupiers of properties adjacent to the landfill from the NLG. Owners and occupiers need to be considered when assessing effects of activities on people and I do not see why occupiers cannot be involved in the on-going consultation processes available through an NLG. I consider that the group should be set up for the members and that technical representation could be on a 'when and as needed' basis as agreed by the group members. I consider that HDC and Horizons ought to be listed separately as they are separate organisations. I agree that the permit holder should have representation, but only if the permits are not held by HDC.</p> <p>Amended wording to reflect the above is included in the condition schedules attached in Appendix 2.</p>
Condition 33		<p><u>The purpose of the NLG is solely to review and provide comment to the Permit Holder on environmental and monitoring results in relation to environmental mitigations at the Levin landfill in accordance with the conditions of consent. The Permit Holder may accept or reject any comments with reasons to be provided to the NLG. The Permit Holder shall:</u></p> <ul style="list-style-type: none"> <li>a. <del>Convene one meeting one month after the commencement of the consent;</del></li> <li>b. <del>Thereafter at intervals of six months for the first 18 months after the date of exercising the consent; and</del></li> <li>c. <del>Thereafter</del> Hold meetings at intervals of no more than 12 months unless 80% of the people attending a meeting agree that changes to the intervals are acceptable.'</li> </ul>		<p>Condition 33, as it currently stands, specifies the meeting frequency. HDC have proposed to include a defined purpose for the NLG and to delete two existing provisions that requires meetings on a more frequent basis for the first 18 months of establishment.</p> <p>In my opinion, the purpose for the NLG is likely better placed in Condition 34, which currently defines roles and responsibilities. In addition the purpose of the NLG as proposed is very limited and, in my view, unlikely to achieve outcomes of any significance.</p> <p>I also consider that it will likely be beneficial for the NLG members to meet more frequently than once per year, especially during the period of time after the commencement of this review when it is likely that there will be a reasonable amount of activity in bedding in to the amended condition of consent. I recommend that conditions 33(a) and (b) remain, but with amendments to require meetings to be held at those frequencies after the commencement of this Review.</p> <p>Recommended wording is included in the condition schedules attached in Appendix 2.</p>

Condition Number	Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
Condition 34		<p>The Permit Holder shall:</p> <ol style="list-style-type: none"> <li>Supply notes of each meeting to the Group Members;</li> <li>Forward an annual report to members <del>and as sent to the Regional Council and the District Council;</del></li> <li>Forward any other information to the Group Members, in accordance with the conditions of the consents; and</li> <li>The Permit Holder shall ensure the NLG members are: <ol style="list-style-type: none"> <li><del>Able to advise the Permit Holder of potential members of the NLG.</del></li> <li>Given the opportunity to inspect the operations on site on the occasion of NLG meetings, and/or on such other occasions as are agreed by the Permit Holder and Landfill Operator. The Permit Holder shall not unreasonably withhold such agreement. The Permit Holder shall grant the NLG members access to the landfill property, during working hours, subject to relevant health and safety regulations and the Management Plan.</li> <li>Consulted by the Permit Holder as a group prior to any review of the resource consents or any change of conditions pursuant to section 127 of the Resource Management Act 1991 (and/or any consequential amendments).</li> <li>Provided by the Permit Holder with a copy of all monitoring reports and other documentation relating to the non-commercially sensitive, environmental operation of the landfill, at the same time as such reports are provided to the Regional Council in accordance with the resource consents.</li> </ol> </li> </ol>		<p>As discussed above, I consider that the purpose of the NLG should be expressed in this condition. The purpose as proposed by HDC is limited. I consider that for the NLG to be successful, open discussion of issues that concern the community members of the group is required. In that respect the purpose should be widened to allow discussions of matters such as that provided for under conditions 34 (d)(v).</p> <p>I recommend that the purpose of the NLG is inserted into this condition and includes matters such as that listed under (v).</p> <p>I agree with the changes proposed to (b), and (d)(i). The changes to (b) do not change the intention of the condition and simply make to clearer. Condition 34(d)(i) is no longer required because the proposed changes to condition 32 have defined the membership of the group.</p> <p>The change to (d)(ii) is unnecessary as the permit holder ought to have ultimate control over the site. In my view, arrangements for visitor entry to the site are a matter to be agreed between the permit holder and the landfill operator and not the NLG.</p> <p>Recommended wording is included in the condition schedules attached in Appendix 2.</p>



Condition Number	Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
		<p>v. <del>Able to raise with the Permit Holder, as necessary, any matter which the NLG member believes the Permit Holder should address in order to meet the conditions of the consent(s).</del></p> <p>vi. <del>Formally acknowledged and considered by the Permit Holder, with respect to NLG member's written suggestions to the Permit Holder on possible improvements to, or concerns about, the landfilling operations.</del> Given reasons for any comments from the NLG at the annual meeting on environmental and monitoring results in relation to environmental mitigations at the Levin Landfill being rejected.</p> <p>vii. <del>Kept informed by the Permit Holder as to whether or not progress is being made towards a regional landfill.</del></p>		

#### Discharge Permit 6011 – discharge landfill gas, odour and dust to air

Condition Number	Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
New Condition 3(c)	<u>From the commencement date of the decision of the 2015 review of conditions, the Consent Holder must place daily cover over the entire operational fill area by the end of each operating day. Daily cover may be 150mm of soil or clay generated on site or imported, but may also be one of a number of non-soil alternative daily cover options of an appropriate thickness where it can be demonstrated that they achieve a comparable level of control with respect to odour discharges, vermin, birds and litter. Raw sand cannot be used as daily cover.</u>	<p>From the commencement date of the decision of the 2015 review of conditions, the Consent Holder must place daily cover over the entire operational fill area by the end of each operating day. <del>Daily cover may be 150mm of soil or clay generated on site or imported, but may also be one of a number of non soil alternative daily cover options.</del> Daily cover shall be of an appropriate thickness <del>where it can be demonstrated that they achieve comparable level of control with respect to</del> such that odour discharges, vermin, birds and litter are kept to a practicable minimum. <del>Raw sand cannot be used as daily cover.</del></p>		<p>The air quality experts have agreed on the following condition in respect of daily cover.</p> <p><i>From the commencement date of the decision of the 2015 review of conditions, the Consent Holder must place daily cover over the entire operational fill area to a depth of at least 150 millimetres by the end of each operating day. Daily cover material may comprise of sand, soil or mulched woody material and should be applied to ensure effective odour control.</i></p> <p>I note that this wording may allow for the sole use of sand for daily cover. However, what ever the material used, it will be required to ensure effective odour control.</p> <p>I recommend that the above wording be inserted as new condition 3(c).</p>

Condition Number	Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
New Condition 3(d)	<u>From the commencement date of the decision of the 2015 review of conditions, the Consent Holder must ensure that intermediate cover is placed over daily cover to close-off a fill area that will not receive additional lifts of waste or final cover for more than three months. The combined depth of cover, including daily cover, over the waste shall be a minimum of 300 millimetres. Raw sand can not be used as intermediate cover. Intermediate cover shall be stabilised within 20 working days of completion.</u>	From the commencement date of the decision of the 2015 review of conditions, the Consent Holder must ensure that intermediate cover is placed over daily cover to close off a fill area that will not receive additional lifts of waste or final cover for more than three months. The combined depth of cover, including daily cover, over the waste shall be a minimum of 300 millimetres. <del>Raw sand cannot be used as intermediate cover.</del> Intermediate cover shall be stabilized within 20 working days of completion.		<p>The air quality experts do not appear to have proposed any alternative wording in respect of intermediate cover. However, they have agreed that the use of raw sand is not a suitable material for intermediate capping.</p> <p>Therefore, I recommend that the wording proposed in the Notice of Review be inserted into the consent as new condition 3(d).</p>
New Condition 3(e)	<u>The Consent Holder must carry out monthly surface emission testing for all areas of the landfill with final or intermediate cover, and the bio-filter bed. The monitoring of surface emissions shall be undertaken utilising emission testing methods that have been given prior written certification as to their appropriateness by the Manawatu-Wanganui Regional Council's Regulatory Manager. The monitoring of surface emissions shall be undertaken following 72 hours with no rain and on any day where the average wind speed is less than 15 kilometres per hour.</u>	The Consent Holder must carry out monthly surface emission testing for all areas of the landfill with final or intermediate cover, and the bio-filter bed. The monitoring of surface emissions shall be undertaken utilizing emission testing methods that have been given prior written certification as to their appropriateness by the Manawatu-Wanganui Regional Council's Regulatory Manager. The <u>monthly monitoring</u> of surface emissions shall <u>only be undertaken following a 72 hours period with no less than 75mm of rainfall</u> and on any day where the average wind speed is less than 15 kilometres per hour.		<p>Ms Ryan has discussed this proposed condition at paragraphs 37 to 42 of her report. She agrees with HDC in that there will be practical difficulties in achieving the ideal weather conditions and agrees with the following wording, provided an advice note is attached to outline the preferable weather conditions.</p> <p><i>The Consent Holder must carry out monthly surface emission testing for all areas of the landfill with final or intermediate cover, and the bio-filter bed. The monitoring of surface emissions shall be undertaken utilizing emission testing methods that have been given prior written certification as to their appropriateness by the Manawatu-Wanganui Regional Council's Regulatory Manager. The monitoring of surface emissions shall not be undertaken during or immediately after heavy rainfall or during strong wind speed conditions, and the meteorological conditions at the time of the monitoring shall be provided in the monitoring report.</i></p> <p>I have recommended the above wording and drafted an advice note based on paragraph 42 of Ms Ryans report.</p>
New Condition 3(f)	<u>Surface emissions of methane, as determined by testing carried out by condition 3(e) shall not exceed 5,000 parts per million (ppm) in any single location. An exceedance of the 5,000 ppm requires remedial action to be undertaken within 24 hours and retesting within 24 hours of remediation being completed. If the second testing results in a continued exceedance at the same location then an action plan shall be developed and implemented to reduce methane concentrations below 5,000 ppm and details provided to the Manawatu-Wanganui Regional Council advised within 48 hours of the retest.</u>	Agreed		<p>Even though this condition was agreed, the air quality experts have noted that the 5000ppm level is a health and safety limit based on the Lower Explosion Level rather than an environmental or odour based limit. The experts agree that lower trigger levels for methane should be incorporated as conditions of consent and have proposed the following:</p> <ul style="list-style-type: none"> <li>• 100 ppm for 'final cap' areas;</li> <li>• 200 ppm for 'intermediate cover' areas; and,</li> <li>• 5,000 ppm for onsite buildings and structures.</li> </ul> <p>The JWS directs one to Attachment A of the statement for a recommended condition. However, the levels in that document do not appear to align with that expressed above. As such, I have adapted the wording proposed in the notice of review to incorporate the levels noted above, acknowledging that further input will likely be required on the details of this condition.</p>

Condition Number	Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
New Condition 3(g)	<u>Records of surface emission testing must be included in the Annual Report and provided to Manawatu-Wanganui Regional Council on request.</u>	Agreed		This has been agreed by HDC and I recommend that it be inserted into the consent as new condition 3(g).
New Condition 3(h)	<u>Within six months of the commencement date of the decision of the 2015 review of conditions, the leachate collection chamber must be vented to a bio-filter. The bio-filter must be designed by a suitably qualified and experienced person.</u>	Agreed		The air quality experts consider the proposed condition to be appropriate. I recommend that it be inserted into the consent as new condition 3(h).
New Condition 3(i)	<u>The Consent Holder must employ an appropriately qualified person to undertake a comprehensive assessment of the bio-filter performance on an annual basis. The assessment shall include, but not be limited to, an evaluation of the media size distribution and composition and effectiveness in removing contaminants.</u>	The Consent Holder must employ a suitably qualified person to undertake a comprehensive assessment of the bio-filter performance on <del>an annual</del> a <u>two-yearly</u> basis. The assessment shall include, but not be limited to, an evaluation of the media size distribution and composition and effectiveness in removing contaminants.		The air quality experts have agreed that an annual assessment of the bio-filter is appropriate. I recommend that the wording as proposed in the Notice of Review be inserted into the consent as new condition 3(i).
New Condition 3(j)	<u>The Consent Holder shall measure and record the following parameters:</u>  <ul style="list-style-type: none"> <li><u>Continuous display of differential pressure for the bio-filter;</u></li> <li><u>Weekly recording of pressure across the bio-filter bed;</u></li> <li><u>Weekly general observations of the bio-filter condition, including weed growth, compaction and short circuiting;</u></li> <li><u>Quarterly media moisture content of the upper two thirds layer for the first two years of operation and then six-monthly thereafter;</u></li> <li><u>Quarterly monitoring of the pH of the bio-filter bed media in the upper two thirds layer for the first two years then six monthly thereafter.</u></li> </ul>	<del>The Consent Holder shall measure and record the following parameters:</del>  <ul style="list-style-type: none"> <li><del>Continuous display of differential pressure for the bio-filter;</del></li> <li><del>Weekly recording of pressure across the bio-filter bed;</del></li> <li><del>Weekly general observations of the bio-filter condition, including weed growth, compaction and short circuiting;</del></li> <li><del>Quarterly media moisture content of the upper two thirds layer for the first two years of operation and then six-monthly thereafter;</del></li> </ul> <del>Quarterly monitoring of the pH of the bio-filter media in the upper two thirds layer for the first two years and then six monthly thereafter.</del>		The air quality experts have recommended the following wording for proposed condition 3(j):  <i>The Consent Holder shall maintain the biofilter, measure and record the following parameters:</i> <ul style="list-style-type: none"> <li><i>Daily visual inspection of the state of the biofilter bed, particularly for signs of any short-circuiting, clogging of the bed, compaction and weed growth.</i></li> <li><i>Daily inspection of the inlet gas fan and ductwork and any maintenance;</i></li> <li><i>Continuous display of differential pressure for the biofilter;</i></li> <li><i>Weekly recording of pressure across the biofilter bed;</i></li> <li><i>Weekly inspection to check for odour at the biofilter (i.e. assessment of odour intensity in accordance with the most up to date good practice guidance for assessing and managing odour).</i></li> <li><i>Weekly monitoring and recording of the biofilter media moisture content;</i></li> <li><i>Monthly monitoring and recording of the pH of the biofilter media;</i></li> <li><i>Quarterly raking and loosening of the biofilter media, or as otherwise required, to reduce the potential for short-circuiting, clogging of the bed, compaction and weed growth.</i></li> </ul> I recommend that the above condition be inserted as new condition 3(j).

Condition Number	Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
New Condition 3(k)	<p><u>The Consent Holder must ensure that the bio-filter and bed complies with the following limits at all times:</u></p> <ul style="list-style-type: none"> <li><u>The air flow rate shall not exceed 100 cubic metres per hour per metre of bed;</u></li> <li><u>The pH of the filter material shall be between 6 and 8 pH units;</u></li> <li><u>An even distribution of gas flow through the filter bed; and</u></li> <li><u>There shall be no short circuits of untreated air through and filter bed.</u></li> </ul>	<p><del>The Consent Holder must ensure that the bio-filter and bed complies with the following limits at all times:</del></p> <ul style="list-style-type: none"> <li><del>The air flow rate shall not exceed 100 cubic metres per hour per metre of bed;</del></li> <li><del>The pH of the filter material shall be between 6 and 8 pH units;</del></li> <li><del>An even distribution of gas flow through the filter bed; and</del></li> <li><del>There shall be no short circuits of untreated air through the filter bed'.</del></li> </ul>		<p>The air quality experts have recommended the following wording for proposed condition 3(k):</p> <p>The Consent Holder must ensure that the biofilter and bed complies with the following limits at all times:</p> <ul style="list-style-type: none"> <li>Pressure drop across the biofilter shall be less than 100 mm water gauge;</li> <li>Biofilter media moisture content shall be between 40-60% moisture content;</li> <li>The air flow rate shall not exceed 100 cubic metres per hour per square metre of biofilter media;</li> <li>The pH of the filter material shall be between 6 and 8 pH units;</li> <li>An even distribution of gas flow through the filter bed; and</li> <li>There shall be no short circuits of untreated air through and filter bed.</li> </ul> <p>I recommend that the above condition be inserted as new condition 3(k).</p>
New Condition 3(l)	<p><u>Within one month of the commencement date of the decision of the 2015 review of conditions, the Consent Holder shall investigate and identify the odour source identified in the MWH report titled Continuous Ambient Air Quality Monitoring for Hydrogen Sulphide – Levin Landfill and dated 10 July 2015.</u></p>	<p><del>Within one month of the commencement date of the decision of the 2015 review of conditions, the Consent Holder shall investigate and identify the odour source identified in the MWH report titled Continuous Ambient Air Quality Monitoring for Hydrogen Sulphide – Levin landfill and dated 10 July 2015'.</del></p>		<p>Ms Ryan has briefly discussed proposed conditions 3(l), 3(m) and 3(n) at paragraphs 51 to 52 of her report. She has not made any specific recommendations other than to state that she does support the need for further investigation and control of odours. In its response, HDC has proposed to investigate the odour source to the north west of the landfill site.</p> <p>Given the mitigation actions that are occurring on the site (installation of bio-filter, more robust capping and re-instatement of the gas flare), I am of the view that any such investigations into an alternative unknown odour source are probably best put aside at this stage. I consider that it is likely more productive and effective to address the known odour sources before being distracted by more investigations into unknown sources of odour.</p> <p>As such, I recommend that proposed conditions 3(l) to 3(n) be inserted into the consent but with amended wording to only require them to be actioned if the odour issue has not been resolved within 12 months after the commencement date of the 2015 review.</p>
New Condition 3(m)	<p><u>The Consent Holder shall remediate the odour source identified in condition 3(l) should the source be located on the Levin Landfill property.</u></p>	<p><del>The Consent Holder shall remediate the odour source identified in condition 3(l) should the source be located on the Levin Landfill property.</del></p>		As above
New Condition 3(n)	<p><u>The Consent Holder shall provide a report to Manawatu-Wanganui Regional Council and the Neighbourhood Liaison Group within 20 working days of condition 3(m) being completed.</u></p>	<p><del>The Consent Holder shall provide a report to Manawatu-Wanganui Regional Council and the Neighbourhood Liaison Group within 20 working days of condition 3(m) being completed'</del></p>		As above.



Condition Number	Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
New Condition 3(o)				Although not proposed in the Notice of Review, it has become obvious from reviewing Ms Ryan's s42A report and the air quality expert JWS that the collection and flaring of landfill gas is one of the key components of controlling odour from the site (see paragraph 72 of Ms Ryan's report and question 1 in the JWS). As such I have recommend that a new condition be imposed that requires the installation and use of a landfill gas flare on the site at all times. It is acknowledged that HDC already has a resource consent for a flare However, there is no requirement that it actually be used and the existing consent could well be surrendered if HDC decided they no longer wished to pursue that option.
New Condition 3(p)				Again, not proposed in the Notice of Review; however, the air quality experts have agreed that certain matters should be outlined in an Odour Management Plan (OMP) (see question 6 of the JWS). I have recommended a new condition to require the development of an OMP and for it to be incorporated into the overall Landfill Management Plan.
New Condition 6A	<u>The Consent Holder shall nominate a liaison person to manage any air quality complaint received. The name and contact details of the liaison person shall be provided to the Manawatu-Wanganui Regional Council's Regulatory Manager. The Consent Holder shall ensure a liaison person is available at all times to respond to odour or dust complaints.</u>	Agreed		Given that HDC has agreed to this condition I recommend that it be incorporated as new condition 6A.
New Condition 6B	<u>The Consent Holder shall ensure any complaint received from a member of the general public regarding odour or dust is responded as soon as practicable and within 24 hours of the complaint being received, or at a time mutually agreeable with the party making a complaint.</u>	<u>The Consent Holder shall ensure that any complaint received from a member of the general public regarding odour or dust emanating from the landfill site is responded—investigated as soon as practicable and within 24 hours of the complaint being received, or at a time mutually agreeable with the party making the complaint.</u>		Ms Ryan has discussed the proposed conditions at paragraph 55 of her report and states that the HDC version provides more clarity.  Therefore I recommend that the HDC wording be inserted into the consent as new condition 6B
New Condition 6C	<u>The Consent Holder shall notify a Manawatu-Wanganui Regional Council Consents Monitoring Officer as soon as practicable after becoming aware of any offensive or objectionable odour, or any complaint from a member of the public regarding odour.</u>	<u>The Consent Holder shall notify a Manawatu-Wanganui Regional Council Consents Monitoring Officer as soon as practicable after becoming aware of any offensive or objectionable odour emanating from the landfill, <del>or any complaint from a member of the public regarding odour.</del> An explanation as to the cause of the incident and details of any remedial and follow-up actions taken shall also be provided to the Regional Council Consents Monitoring Officer."</u>		Ms Ryan has discussed the proposed conditions at paragraph 55 of her report and states that the HDC version provides more clarity.  Submitter 160 (MidCentral District Health Board) have requested that the Medical Officer of Health be notified of complaints at the same time as the Regional Council so as to enable the DHB to be better informed to communicate with the public if required. I do not see any particular issue with this.  Therefore I recommend that the HDC wording be inserted, with an amendment referencing to the Medical Officer of Health, into the consent as new condition 6C

Condition Number	Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
New Condition 6D	<u>The Consent Holder must undertake monthly odour surveys around the boundary of the site, particularly those sections of the boundary that are between the landfill and residential houses, until such time as discharges of refuse to the landfill ceases. Thereafter, the frequency on inspection shall be determined in consultation with the Manawatu-Wanganui Regional Council. The monitoring shall be undertaken using a method that is consistent with the German VDI standard 3940 or subsequent method.</u>	<del>The Consent Holder must undertake monthly odour surveys around the boundary of the site, particularly those sections of the boundary that are between the landfill and residential houses, until such time as discharges of refuse to the landfill ceases. Thereafter, the frequency on inspection shall be determined in consultation with the Manawatu-Wanganui Regional Council. The monitoring shall be undertaken using a method that is consistent with the German VDI standard 3940 or subsequent method.</del>		<p>The air quality experts have discussed boundary monitoring in question 6 of the JWS. There is agreement that such monitoring is required at multiple locations, upwind and downwind of the landfill. They also note that applying the German VDI standard 3940 in full is not practicable and that the method is generally adapted in NZ.</p> <p>As such, I recommend wording similar to that as proposed in the Notice of Review, but referencing an amended VDI 3940 method as certified by Horizons Regulatory Manager. I acknowledge that the wording of this condition may require some further edits.</p>
New Condition 6E	<u>The Consent Holder must carry out a weekly walk-over survey of all the landfill surfaces, including the area around the bio-filter and leachate pond. The purpose of the walk-over survey is to check for odour, cracks in the landfill cap surface and integrity of any gas collection or leachate pipework.</u>	<del>The Consent Holder must carry out a weekly walk-over survey of all of the landfill surfaces, including the area around the bio filter and leachate pond. The purpose of the walk over survey is to check for odour, cracks in the landfill cap surface and integrity of any gas collection or leachate pipework.</del>		<p>Ms Ryan discusses this condition at paragraph 58 of her report and notes that HDC initially opposed the condition. However, HDC has since agreed to the condition with some minor amendments, primarily to replace the work survey with site inspection. Ms Ryan agrees with those amendments.</p> <p>As such, I recommend that the following wording is inserted into the consent as new condition 6E.</p> <p><i>The Consent Holder must carry out a weekly walk over site inspection of all the landfill surfaces, including the area around the bio-filter and leachate pond. The purpose of the walk over site inspection is to check for odour, cracks in the landfill cap surface and integrity of gas collection or leachate pipework.</i></p>
New Condition 6F	<u>The Consent Holder shall maintain a log of all inspections, investigations and actions taken in accordance with all monitoring and odour inspection conditions of this consent. The log shall be made available to the Manawatu-Wanganui Regional Council on request and submit a summary of all results and assessments presented in the Annual Report.</u>	Agreed		Given that HDC has agreed to this condition I recommend that it be incorporated as new condition 6F.
Condition 7			The Regional Council <del>shall</del> may initiate a <del>publicly-notified</del> review of Conditions 3 and 6 of this permit <del>at ten yearly intervals after the commencement date of the decision of the 2015 review of conditions in April, 2015, 2020, 2025, 2030 and 2035, unless the Neighbourhood Liaison Group (NLG) agrees that a review is unnecessary.</del> The reviews shall be for the purpose of:....."	Agreed. For the same reasons as discussed for condition 30 of Discharge Permit 6010.

## Discharge Permit 7289 – discharge liquid waste onto and into land

Condition Number	Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
Condition 5		<p>The Permit Holder shall notify the Regional Council's <del>Environmental Protection Regulatory Manager and the Neighbourhood Liaison Group</del> as soon as practicably possible after receiving notification of the intention to dispose of waste at the landfill under the terms of this consent, or as soon as practicable following urgent disposal in accordance with Condition 3.</p> <p>The Permit Holder shall detail the reason for the discharge, volume of discharge and timing of the discharge.</p> <p><del>Each nominated representative of the Neighbourhood Liaison Group shall be notified in writing by post.</del></p>		<p>The changes update reference to Horizons Regulatory Manager to reflect a change to the role title and remove the requirement to notify the NLG members of such discharges. HDC have stated that this is an operational matter and that the NLG will be informed of such waste disposal in an annual report.</p> <p>I agree that there appears to be little need to be notifying members of the NLG for such matters when the consent conditions clearly authorise the disposal of liquid waste in contingency conditions.</p> <p>I recommend that the changes be made as requested.</p>
Condition 19			<p>The Regional Council <del>shall</del> <b>may</b> initiate a <del>publicly notified</del> review of Conditions 5, 9, 12 and 17 of this permit <b>at ten yearly intervals after the commencement date of the decision of the 2015 review of conditions in April 2015, , 2025, and 2035,.</b> The reviews shall be for the purpose of...</p>	<p>Agreed. For the same reasons as discussed for condition 30 of Discharge Permit 6010.</p>

## Discharge Permit 102259 – discharge stormwater to land and potentially to groundwater via ground soakage

Condition Number	Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
Condition 5		<p><del>'The Permit Holder shall ensure that the inspect the stormwater system on a fortnightly basis, including all drains and ponds, is kept and clear it of refuse at all such times '.</del></p>		<p>Mr Standen has assessed this proposed change at Paragraph 39 of his report. He does not agree with the changes as they would effectively permit refuse in the stormwater system for most of the time. I agree with Mr Standen in that it is important to keep the stormwater system clear of refuse. I also agree with the practical approach to compliance assessments for this condition. As such I recommend that his proposed change to condition 5 be rejected.</p>
Condition 7	<p><del>There shall be no ponding in the stormwater soakage areas 12 hours after the last rain event.</del></p>	Agreed		<p>Stormwater soakage areas are low lying areas where water may sit after heavy rain. It is unlikely that any effects on the environment arise from such ponding of stormwater. As such I recommend the removal of this condition.</p>
Condition 9		<p><del>'As far as practically possible, the Permit Holder shall ensure that all stormwater from the existing landfill area is directed to a the centralised soakage areas to the south of the existing fill, as shown on Plan C 102259 the latest version of the Stormwater Plan'.</del></p>		<p>Mr Standen has assessed this proposed change in his report and note that his reflects the current layout of the landfill. Therefore I recommend that this condition be changed as requested.</p>

Condition Number	Notice of Review	HDC Response to Review	HDC s127 Application	Current Recommendations
Condition 18	Should any groundwater <del>and surface</del> <del>water</del> parameters tested for under Condition 14 of this consent exceed the Australian and New Zealand Environment and Conservation Council Water Quality Guidelines (2000) for Livestock Watering, the Permit Holder shall report to horizons.mw's Team Leader Compliance as soon as practicable on the significance of the result, and where the change can be attributed to the landfill operation, consult with horizons.mw's Team Leader Compliance to determine if further investigation or remedial measures are required.	No response or comment made.		This condition relates to groundwater sample collected under condition 14. Condition 14 does not require any surface water samples to be collected so the reference to surface water in this condition is unnecessary. I recommend that the condition be amended as proposed.
Condition 19		'The Regional Council <del>shall</del> <u>may</u> initiate a <del>publicly notified</del> review of all conditions of this Permit in April 2015, <del>2020, 2025, 2030 and 2035</del> and thereafter at ten yearly intervals (2025, and 2035) <del>unless the Neighbourhood Liaison Group (NLG) agrees that a review is unnecessary.</del> The reviews shall be for the purpose of:...'		Agreed. For the same reasons as discussed for condition 30 of Discharge Permit 6010.



## J. PART 2 ASSESSMENT

### Section 6: Matters of National Importance

87. Section 6 of the Act sets out the matters of national importance which are to be recognised and provided for in the consideration of these applications. I consider that the most relevant aspects of section 6 are (a) and (e).

- a) *The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development.*
- e) *The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.*

88. The Tatana Drain lacks any significant natural character values given that it is a heavily modified watercourse. In my view, the effects of the ammoniacal nitrogen levels on aquatic life further degrade the natural character of the waterway and that any natural character that the drain may have once had or could have is not being fully preserved. While the conditions proposed will not turn the Tatana Drain into a pristine waterway, as it will still be influenced by stock and agricultural factors, the prevention of leachate entering the waterway, will improve its natural character potential.

89. To fully consider Section 6(e) I need to be able to identify the nature of the relationship between Maori and the affected lands, water, sites, wahi tapu and other taonga, and the effect of the proposed activity on that relationship. To assist with this consideration it is appropriate that the submitters who consider they have a cultural tie to the area elaborate on the Section 6(e) matters in their written or oral statements to the Hearing Panel.

### Section 7: Other Matters

90. Section 7 sets out other matters which the decision maker must have particular regard to when exercising functions under the RMA. I consider that 7 (a), (aa), (c), (d) and (f)

are relevant to the applications.

91. Sections 7(a) and (aa) require the Regional Council to have particular regard to the kaitiakitanga and the ethic of stewardship. Sections (c), (d), and (f) outline the maintenance and enhancement of amenity values, the intrinsic value of ecosystems, and the maintenance and enhancement of the quality of the environment.
92. Given the current state of the Tatana Drain and the on-going odour issues, there appears to be a distinct lack of kaitiakitanga or stewardship in relation to the effects arising from the landfill. There are significant effects occurring that are affecting amenity values, ecosystems and the general quality of the environment. It is considered that the conditions proposed will deliver improvements to these matters.

### **Section 8: Treaty of Waitangi**

93. Section 8 of the Act requires the consent authority to take into account the principles of the Treaty of Waitangi. The Court of Appeal (New Zealand Maori Council Case 54/87) identified four major principles, which are:

***The Essential Bargain*** – the exchange of kawanatanga (in Article 1) for the protection of tino rangatiratanga (in Article 2).

***The Principles of Tino Rangatiratanga and Kawanatanga*** – the guarantee to Iwi and Hapu of full chieftainship or authority over their lands, resources and taonga, and therefore the control and management of tribal resources according to Maori cultural preference, as balanced against the Crown's right to make law and govern.

***The Principle of Partnership and Good Faith*** – the shared obligation of both Treaty partners to meet their respective commitments and to act reasonably and in good faith to one another.

***The Principle of Active Protection*** – the Crown's obligation to actively protect the interests of Maori in their land and resources.

94. The Hearing Panel will need to take these principles into account when making its final determination on this application. I expect that some of the submitters may provide a greater understanding of these principles in the context of the applications.

## Section 5: Purpose

95. Section 5 states that the purpose of the Act is to promote sustainable management of natural and physical resources. Section 5(2) of the Act then defines sustainable management as:

*“sustainable management” means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while:-*

- a) sustaining the potential of the natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations;*
- b) safeguarding the life-supporting capacity of the air, water, soil and ecosystems; and*
- c) avoiding, remedying or mitigating any adverse effects of activities on the environment.*

96. Section 5 requires an overall broad judgement be applied to the applications. The Notice of Review was served on HDC due to certain conditions of consent requiring it, but also in response to the odour and leachate issues. Conditions have been proposed (for both the review and s127 application) that are expected to provide overall improvements to the scale of the effects on the environment. These conditions are expected to provide for the operation of the landfill in a manner that is consistent with the purpose of the RMA.

## K. RECOMMENDATION

97. In the tables in Section I above, I have provided recommendations as to the wording of the various conditions and reasons for those. A complete version of my recommended conditions is included in Appendix Two of this report.
98. Overall, I recommend that the Hearing Panel grants the application made under s127 to change and cancel conditions of Discharge Permits 6009, 6010, 6011 and 7289, and the application made under s128 to review the conditions of Discharge Permits 6009, 6010, 6011, 7289 and 102259 and to impose, change or cancel conditions in accordance with those outlined in Appendix Two of this report.



## **APPENDIX ONE**

### **MAP OF LEVIN LANDFILL AND SURROUNDS**

## **APPENDIX TWO**

### **RECOMMENDED CONDITIONS**



Tatana drain

Hokio stream

Ngatokowaru  
Marae

HOKIO BEACH ROAD

Grange property  
(submitter 153)

Levin landfill

MOUTERE ROAD

Levin landfill and surrounds

