

**DECISION ON AN APPLICATION FOR A NOTIFIED
REVIEW OF CONSENT CONDITIONS
UNDER SECTION 128 OF THE RESOURCE MANAGEMENT ACT 1991**

CONSENT HOLDER

Horowhenua District Council
Private Bag 4002
LEVIN 5540

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| DECISION DATE 31 May 2010 | FILE REFERENCE 1/4/HDC |
| CONSENT NUMBER 6009/1, 6010/1, 6011/1, 7289/1 and 102259/1 | CONSENT TYPE Discharge Permits |
| ADDRESS FOR ACTIVITY Hokio Beach Road, Levin | MAP REFERENCE S25:965-640, S25:968-647, S25:973-646 and S25:975-636 |
| LEGAL DESCRIPTION Lot 3 DP 40743 Blk II Waitohu SD | CONSULTANT PLANNER Dave Moule |

1. BACKGROUND AND CONTEXT

1.1 Site Location and Surrounding Environment

The Levin Landfill is located on Hokio Beach Road in the Horowhenua District, 4 kilometres west of Levin. The landfill site is located in undulating sand country surrounded by pastoral farming land, 3 kilometres from the coast and 6 kilometres from State Highway 1. The site is approximately 72 hectares in area.

The Hokio Stream (the single outlet for Lake Horowhenua) runs in close proximity to the northern boundary of the landfill site as it flows west to the sea over a distance of approximately 2.5 kilometres.

There are a number of rural residences located to the north-east of the landfill site and the small coastal settlement of Hokio Beach is located approximately 1.5 kilometres to the north-west. The Ngatokowaru marae (Ngati Pareraukawa, Ngati Raukawa) is located approximately 500 metres north-east of the landfill property, while the Kawiu marae (Muaupoko) is on the northern shore of Lake Horowhenua.

1.2 Site History

In the 1950's a small rubbish dump was established close to the current location of the modern landfill. This was one of several dumps in the District, each servicing the nearby town, in this case probably the settlement of Hokio Beach. In approximately 1975, this dump reached its capacity and a second dump was established. This was atypical of practices prior to 1992, where local dump sites were often poorly sited, designed and managed. With the introduction of the Resource Management Act in 1991, more rigorous environmental

controls began to be implemented, and many of these dumps were closed. This was essentially the catalyst for the closure of the old landfill at Levin, and the construction of a new one.

A Solid Waste Management Strategy was developed in 1992 for the Horowhenua District. This outlined the various options for waste management in the District and was released for public comment as part of the 1992/93 annual plan process. As a result the Foxton, Foxton Beach, Tokomaru, and Shannon landfills were all closed by 1996, with the Levin landfill being retained as the one landfill for the District.

The Horowhenua District Council (HDC) lodged an application for resource consents for a new landfill site in September 1994, as it was anticipated that the old landfill would reach its capacity in the late 1990's.

The consent application process was lengthy, as the proposal was strongly opposed by members of the public and tangata whenua, largely on grounds that alternative sites needed to be investigated. Several hui brought about significant amendments to the original proposal, including the addition of a synthetic liner. However, despite continuing opposition from tangata whenua in particular, HDC had a pressing need to develop the new landfill, and hence lodged revised applications with Horizons Regional Council (Horizons) in October 1995.

Horizons deferred the hearing of the resource consent applications until further investigations into the adequacy of consultation, protection of wahi tapu sites, and consideration of alternative sites, had been undertaken.

A decision on the applications was not reached until 1997, where Horizons approved all but one of the five applications. This included the following permits:

- Discharge solid waste to land (discharge permit 6009);
- Discharge leachate to land (discharge permit 6010);
- Discharge contaminants to air (discharge permit 6011); and
- Divert stormwater runoff from land filling operations (water permit 6012).

The one application that was declined had sought to discharge liquid waste onto land (discharge permit 7289).

The decisions pertaining to all five consents were appealed to the Environment Court. At this point in time the Parliamentary Commissioner for the Environment became involved by way of an investigation to assist the Court with respect to consultation and protection of wahi tapu. Protracted mediation followed and the resource consents were finally approved in May 2002 by way of Environment Court Consent Order.

The Consent Order included changes to the conditions of consent which reflected the outcome of the application and appeal process, and involved three major aspects:

- The protection of wahi tapu (discharge permit 6009, specific condition 30);
- Formation of a Neighbourhood Liaison Group (discharge permit 6009, specific conditions 32, 33, and 34); and
- Monitoring of leachate into groundwater (various consent conditions).

The new landfill was completed and opened in 2004. At that time the old landfill, which had reached its capacity in around 1997, was closed and capped.

The new landfill included the installation of a synthetic liner for the new disposal area to allow leachate to be contained, controlled, collected and treated in a pond before being pumped to trickle irrigation pipelines lying on the surface of sand dunes. A life of between 20 and 30 years (i.e. from 2018 to 2028) is expected for the landfill depending on the amount of green waste disposed, based on a solid waste discharge volume of 30,000 m³ per annum.

1.3 Background to the Review

In 2004 the then Parliamentary Commissioner for the Environment (the Commissioner), Dr Morgan Williams, received complaints from several members of the local community expressing concern about the management and associated environmental effects of the Levin Landfill.

In September 2004, following a preliminary assessment of background information, members of the Commissioner's office visited the landfill and met with tangata whenua, other concerned members of the public, and staff from both HDC and Horizons. This preliminary assessment resulted in a decision to investigate the management and effects of the landfill further.

On 27 April 2005 the Commissioner wrote to Horizons, copied to HDC, recommending that Horizons should seriously consider reviewing certain conditions of the permits pertaining to the landfill. Following this recommendation, Horizons engaged Kingett Mitchell (now Golder Associates) to undertake a review of consent conditions for the landfill. This review was progressed on a non-notified basis and initiated on-going discussions with HDC.

In August 2005, Kingett Mitchell produced a report which recommended a number of changes to consent conditions as a result of their technical review. This report was forwarded to HDC in September 2005, who then engaged Montgomery Watson Harza Limited (MWH) to undertake a further independent technical review on their behalf.

MWH subsequently produced a report dated February 2006 which addressed the proposed review of conditions and contested a number of proposed changes.

In July 2006, Kingett Mitchell prepared a further report in response to the MWH concerns, however it is understood that despite the presence of this trail of technical reporting and ongoing dialogue between the parties that no substantive progress was made towards a hearing such that the matters could be formally considered.

The Commissioner had originally indicated that their formal investigations would be postponed until the consent review had been completed, however given delays in progressing the review, in July 2007 the new Commissioner, Dr Jan Wright, decided to commence an investigation and prepare a report for the benefit of all parties in an aim to resolve the matters at hand.

The Commissioner's report acknowledged that Horizons had made a decision to publicly notify a new consent review which would supersede previous negotiations between Horizons and HDC. Notwithstanding the proposed review, the Commissioner considered that there

was significant merit in releasing their findings at that particular time given the concerns of the local community and the importance of the outcome of the proposed review.

In November 2007, the Commissioner engaged Tonkin and Taylor to conduct a technical and environmental impact review of the Levin Landfill. This review was intended to assist the Commissioner in completing their investigation of the landfill. This review included five key recommendations which were taken into consideration by the Commissioner in forming their final recommendations.

The Parliamentary Commissioner for the Environment report (August 2008) and supporting technical assessment undertaken by Tonkin and Taylor (dated 25 March 2008) have been attached to this report as **Appendix B**.

It is noted that the various iterations of technical reports undertaken by Kingett Mitchell and MWH between 2005 and 2007 have not been appended to this report. It is considered that while these reports illustrate the journey that this particular review followed and outlines the historical dialogue between the respective parties' technical experts, it is considered that the most recent technical report undertaken by Golder Associates, dated 5 May 2010, has taken into account any previous reporting and any material conclusions and recommendations. Nonetheless, these previous reports are all available should they be required by any party.

1.4 Scope of the Review

The scope of the review is ultimately defined by the review conditions imposed on the original consents which reference those specific conditions which Horizons may initiate a review of and for what purpose.

The respective review conditions and specific conditions subject to review for consent numbers 6010, 6009, 6011, and 7289 are set down in that Environment Court Consent Order referred to in section 1.2 above. The conditions subject to review are identified in Table 1 below.

The review condition pertaining to consent number 102259 states that Horizons may initiate a review of all conditions of the permit. This particular consent is not included in the Environment Court Consent Order, as it was processed on a non-notified basis and hence was not subject to the same appeal process as the other discharge permits.

Table 1 – Specific conditions subject to review

| HORIZONS CONSENT NUMBER | NATURE OF CONSENT | CONDITIONS SUBJECT TO REVIEW |
|--|---|---|
| 6010 | Discharge of landfill leachate onto and into land | 3, 4, 11, 12, 13, 14, 24, 27, 28, and 29 |
| 6009 | Discharge of solid waste onto land | 2, 8, 14, 28, and 29 |
| 6011 | Discharge of landfill gas, odour and dust to air | 3 and 6 |

| | | |
|--------|--|-------------------------|
| 7289 | Discharge of liquid waste onto and into land | 5, 9, 12, and 17 |
| 102259 | Discharge of stormwater to land and potentially to groundwater via soakage | All conditions |

The public notice associated with the notification of the review also outlines the scope of the review by identifying the relevant consents and summarising those specific conditions that could be considered through the process.

It is important to acknowledge that whilst the scope of review is clearly outlined in the review conditions imposed on the original consents, there have been some changes to conditions that are technically outside the scope of the review. Such changes culminated from consultation and negotiation between Horizons, HDC, and the submitters through the pre-hearing process. Those conditions that have been subjected to amendments (or new conditions) and are not specifically referenced in Table 1, include:

- Consent Number 6010 – Conditions 15, 16, 30, and 31;
- Consent Number 6009 – Condition 31, 32, and 34;
- Consent Number 6011 – Condition 7; and
- Consent Number 7289 – Condition 19.

While these amendments are technically outside the scope of the review, it is important to note that the consent holder has agreed to the changes in order to address concerns raised by submitters through the course of several pre-hearing meetings, and as such it is considered appropriate to include these changes in the new suite of conditions attached to this report.

1.5 The Review Process

A review of the conditions of consent pertaining to the suite of resource consents associated with the Levin Landfill was publicly notified on 4 September 2008 pursuant to section 128 of the Resource Management Act 1991 (“the Act”).

The submission period closed on 3 October 2008 with a total of 9 submissions being received, all of which were in support of the review of conditions. Full copies of the original submissions are attached to this report as **Appendix C**.

The ultimate purpose of the review was to assess the effectiveness of several specific conditions of consent in avoiding, remedying or mitigating adverse effects on the environment surrounding the Levin Landfill. The review also sought to assess the adequacy of specific conditions of consent relating to the monitoring of environmental effects.

The review has been informed by several previously commissioned technical reports (as referred to in section 1.3 above), and the recommendations of the Parliamentary Commissioner for the Environment have been carefully considered and taken into account where possible.

Mr Brett Sinclair, Senior Hydrogeologist, Golder Associates (formerly Kingett Mitchell) was engaged at the outset of this review and has provided independent technical advice throughout the process. Mr Sinclair's involvement in the review, including most of the pre-hearing meetings, has culminated in a detailed report dated 5 May 2010 which provides substantive recommended changes to the existing consent conditions. This report largely forms the basis of the following assessment and has been attached in full as **Appendix F**.

Following the notification of the review, a somewhat unorthodox and time consuming process has prevailed, whereby the interested parties have participated in multiple pre-hearing meetings in an aim to collectively resolve those matters of concern outside the parameters of a formal hearing.

Pre-hearing meetings were facilitated on the following dates:

- 5 March 2009;
- 27 April 2009;
- 18 June 2009;
- 14 August 2009;
- 9 October 2009; and
- 17 December 2009.

It is considered appropriate to append the minutes of these various meetings to this report as opposed to paraphrasing the specific outcomes in the interests of avoiding duplication and traversing retrospective points that have already been recorded and taken into account where appropriate in this report in any event. The minutes from each meeting have been attached to this report as **Appendix D**.

With each pre-hearing meeting, progress was made with respect to resolving the concerns of the submitters and refining those amendments that would be required to the conditions to appropriately reflect these resolutions. This iterative process did take a significant period of time, however following the final pre-hearing meeting on 17 December 2009 mutual agreement was reached between all parties.

The process by which resolution was reached was obviously facilitated by the pre-hearings meetings and culminated in a letter being sent to all submitters on 3 March 2010 to formalise the agreement. This letter summarised the process that had been followed to date, attached the final draft suite of conditions and clearly stipulated the procedural steps that submitters needed to follow in order to confirm their agreement or otherwise.

The outcome of this process resulted in all participating submitters signing a form which confirmed that they no longer wished to be heard in respect of their submission, and that they understood that in accordance with section 100 of the RMA, that a hearing would not need to be held.

A copy of the letter dated 3 March 2010 and the signed forms have been attached to this report as **Appendix E**.

It is important to note that two submitters who were required to attend those pre-hearings in June, August, October, and September 2009 failed to do so, and did not provide a reasonable excuse. The submitters who failed to attend the pre-hearings include Mr EW (Ted) Devonshire, and Mrs Vivienne Taueki.

Section 99 (8) provides the consent authority the ability to decline to consider these submissions, however rather than strictly declining to consider these submissions the concerns raised by these parties have still been taken into consideration in the review and resulting amendments to conditions.

On this basis, Horizons has not pursued the signing of forms confirming that these particular submitters no longer wish to be heard in respect of their submission in accordance with section 100 of the RMA, as these parties have not been active participants in the pre-hearing process.

2. STATUTORY CONSIDERATIONS

Pursuant to section 128 of the Resource Management Act 1991 a consent authority may, in accordance with section 129, serve notice on a consent holder of its intention to review the conditions of a resource consent at any time specified for that purpose in the consent for any of the following purposes:

- (i) *To deal with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage; or*
- (ii) *To require a holder of a discharge permit or a coastal permit to do something that would otherwise contravene section 15 or section 15B to adopt the best practicable option to remove or reduce any adverse effect on the environment; or*
- (iii) *For any other purpose specified in the consent.*

A review could also be undertaken if the information made available to the consent authority by the applicant for the consent for the purposes of the application contained inaccuracies which materially influenced the decision made on the application and the effects of the exercise of the consent are such that it is necessary to apply more appropriate conditions.

The review is a mechanism that enables a consent authority to ensure that conditions do not become outdated, irrelevant, or inadequate. It is not, however, a mechanism that enables a consent authority to amend existing conditions or impose new conditions to prevent the activity for which the resource consent was granted: *Medical Officer of Health v Canterbury RC [1995] NZRMA 49 (PT)*.

However, provided the requirements of section 128(1) are met, any new or amended condition can be added or substituted, as the power to change conditions under section 128 is wide and flexible. There is no obvious limit on how far a consent could be subtracted from or qualified by new conditions: *Feltex Carpets Ltd v Canterbury RC EnvC C103/2000*, noted [2000] BRM Gazette 90. Furthermore, the power of review allows a consent authority to consider changing conditions to make them more appropriate in the light of the circumstance triggering review: *PVL Proteins Ltd v Auckland RC EnvC A061/2001*, noted [2001] BRM Gazette 102.

Having regard to the above, it is considered that in this particular case the requirements of section 128(1) have been met, whereby the operation of the landfill had given rise to public concerns and Parliamentary Commissioner for the Environment investigations over potential adverse effects on the environment and Horizons, as consent authority, have exercised their discretion to review the conditions of consent to deal with any such effects and also require

the permit holder to adopt the best practicable option to remove or reduce any adverse effects on the environment.

Section 129 of the Resource Management Act 1991 states that:

“A notice under section 128—

- (a) Shall advise the consent holder of the conditions of the consent which are the subject of the review; and*
 - (b) Shall state the reasons for the review; and*
 - (c) Shall specify the information which the consent authority took into account in making its decision to review the consent, unless the notice is given under section 128(a); and*
 - (d) May propose, and invite the consent holder to propose within 20 working days of service of the notice, new consent conditions.*
- (2) Subject to section 130(3),[(5), and (6)], the service of a notice under section 128 and a summary of its contents shall be publicly notified in accordance with section 93—*
- (a) Where the consent holder is invited to propose new consent conditions, within 30 working days of the service of the notice; or*
 - (b) Where no such invitation is made, within 10 working days of the service of the notice.*

A notice of review was served on the consent holder on 2 September 2008, which met all of the requirements of section 129 of the Act.

It is important to note that a consent authority may change the conditions of a resource consent (other than any condition as to the duration of the consent) on a review under section 128 if, and only if, one or more of the circumstances specified in [that section] applies. As stated above, the circumstance specified in section 128(1)(a)(i) applies as adverse effects have arisen from the exercise of the original resource consent on the site.

Pursuant to section 131 (1) the matters to be considered when reviewing conditions of consent under section 128, include those matters in section 104 and whether the activity allowed by the consent will continue to be viable after the change, and the manner in which the consent has been used.

Section 131 (2) states that

Before changing the conditions of a discharge permit or a coastal permit to do something that would otherwise contravene section 15 (relating to the discharge of contaminants) or 15B to include a condition requiring the holder to adopt the best practicable option to remove or reduce any adverse effect on the environment, the consent authority shall be satisfied, in the particular circumstances and having regard to—

- (a) the nature of the discharge and the receiving environment; and*
- (b) the financial implications for the applicant of including that condition; and*
- (c) other alternatives, including a condition requiring the observance of minimum standards of quality of the receiving environment—*

that including that condition is the most efficient and effective means of removing or reducing that adverse effect.

Overall, this review is to be considered as though it is an application for resource consent where the consent holder is the applicant.

2.1 Actual and Potential Effects on the Environment (section 104(1)(a))

Section 104(1)(a) of the Act requires that the Council have regard to any actual and potential effects on the environment of allowing the activity. In the context of this review however, the consideration of effects is focused on improving the effectiveness of the consent conditions, in terms of avoiding, remedying, or mitigating adverse effects that may arise from the landfill activity.

Golder Associates have undertaken a detailed review of conditions which identifies a number of proposed changes to consent conditions to ensure that any existing or potential adverse effects that may arise from the landfill can be identified (i.e. through the refinement of monitoring programmes) and are appropriately addressed.

The discussion and recommendations resulting from this review are included in the report entitled Levin Landfill – Review of Resource Consent Conditions, prepared by Golder Associates, dated 5 May 2010, report number 0178210-815 R001 V7, attached to this report as **Appendix F**.

It is important to acknowledge Golder Associates overview findings that:

To date there is no evidence of adverse effects arising from the landfill operation, beyond the landfill site itself. This review has resulted in proposed changes to several aspects of site management. The general areas in which changes have been proposed include:

- *Refinements to the environmental monitoring requirements for the Levin Landfill.*
- *Modification to landfill cap structures and monitoring.*
- *Evaluation and documentation of the meaning of the data obtained from the environmental monitoring programme, from an effects perspective.*
- *More clearly differentiating between the monitoring and management of the closed unlined landfill areas and the current and future lined landfill areas.*

The purposes of these refinements are to:

1. *Ensure that any potential or actual adverse effects arising in the future can be identified as early as practically possible.*
2. *Ensure the documentation is provided to the HDC, Horizons, and the NLG on a regular basis clearly setting out what the monitoring results mean in terms of potential future effects.*
3. *Improving aspects of the management of closed landfill areas.*

Having reviewed the Golder Associates report, I concur with the reasoning and discussion behind the recommended refinements to the consent conditions and the specific changes themselves.

In order to avoid unnecessary duplication, the detail contained in the Golder Associates report will not be replicated in this assessment. While there is no evidence of adverse effects arising from the landfill operation, the review of conditions has sought to establish a

more robust framework to address those types of effects which may present themselves in the future, including, but not necessarily limited to:

- Effects on groundwater quality in both shallow (sand) and deep (gravel) aquifers resulting from the discharge of leachate, liquid waste and solid waste to land;
- Effects on surface water quality, particularly within the Hokio Stream, resulting from the discharge of leachate, liquid waste and solid waste to land;
- Effects on soil quality resulting from the discharge of leachate, liquid waste and solid waste to land;
- Effects on the water quality of surrounding drinking and/or stock watering bores resulting from the discharge of leachate, liquid waste and solid waste to land;
- Effects on air quality from the discharge of landfill gas, odour and dust to air;
- Effects relating to the discharge of storm water;
- Effects relating to run-off, associated soil erosion and ingress of surface water into the waste mass; and
- Effects relating to the cultural values associated with the groundwater and surface water, in particular the Hokio Stream.

Overall, it is considered that the revised conditions of consent will appropriately avoid, remedy, or mitigate those potential adverse effects identified above.

It is acknowledged that some of the changes to the consent conditions have been developed through discussions that took place during the pre-hearing process and do not necessarily relate to technical issues of landfill management, discharge monitoring and effects mitigation. These changes are reflected in the minutes of the various pre-hearings and the resultant suite of consent conditions included in this report.

2.2 Relevant Policy Statements, Plans or Proposed Plans (section 104(1)(b))

As noted above, section 131 of the Act stipulates those matters that need to be considered when reviewing the conditions of a resource consent. This includes having regard to those matters in section 104 such as any relevant provisions of policy statements, or plans or proposed plans. Having regard to this, the relevant statutory documents in this case, are addressed below.

2.2.1 Operative Regional Policy Statement

The most relevant objectives in the Operative Regional Policy Statement are Objectives 26 and 27 which seek to avoid, remedy or mitigate the adverse effects associated with landfills, industrial waste disposal and contaminated sites and the impacts of the disposal of hazardous substances on human health and the environment.

These objectives are supported by the following related policies:

Policy 26.1

To ensure that all necessary site remediation or mitigation of adverse effects is undertaken on existing landfills, industrial waste disposal sites, and contaminated sites.

Policy 26.2

To ensure that significant adverse effects of all new discharges from industrial or trade premises to land, including discharges from municipal waste disposal sites, are avoided, in particular significant adverse effects on:

- a) *surface water quality; or*
- b) *ground-water quality; or*
- c) *habitats of indigenous flora and fauna; or*
- d) *amenity values; or*
- e) *natural character; or*
- f) *Maori cultural and spiritual values; or*
- g) *animal, plant and human health.*

The avoidance, remediation, or mitigation of any adverse effects associated with the operation of the Levin Landfill is central to this review of consent conditions. The original conditions of consent were the result of an Environment Court appeal process, informed by technical, evaluative and lay evidence from several parties.

The original conditions included specific measures to remediate or mitigate any adverse effects, particularly the discharge of leachate to ground, including a requirement on the Permit Holder to close the existing landfill within two years and six months from the commencement of the consent.

This review has sought to improve the original conditions to better reflect current practices and scientific enhancements since the granting of consent. Furthermore, the changes to conditions are intended to address those concerns raised by the community and the Parliamentary Commissioner for the Environment. In order to achieve these objectives, the conditions have been reviewed and amended to set in place a stringent monitoring programme and framework for further investigation or remediation as necessary.

Accordingly, it is considered that the continued operation of the landfill is consistent with the Objectives and Policies cited above.

There are several other objectives and policies contained in the Regional Policy Statement that have been taken into consideration in this review and those recommended changes to conditions reflect this. Those objectives and policies of most relevance have been listed and commented upon as necessary below.

Objective 3 provides for the relationship of nga hapu and nga iwi of the Manawatu-Wanganui Region and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga.

It is important to recognise that members of the Ngatokowaru Marae Committee (acting body for the hapu of Ngati Pareraukawa), Ngati Rakau, Ngati Te Au, Ngati Turanga, and Muaupoko Co-operative Society, each lodged submissions in support of this review.

The recommended changes to conditions have taken into consideration the relationship of nga hapu and nga iwi and their culture and traditions with their lands and water, largely through the establishment of a more robust monitoring programme with specific testing parameters for ground water and surface water quality. This programme will be supported

by detailed reporting requirements and a clearer pathway for further investigation, evaluation, and remediation or mitigation where necessary.

Ngati Pareraukawa in particular has been actively involved throughout the pre-hearing process and their involvement in the changes to various conditions has reflected their relationship with the Hokio Stream in particular, and aim to appropriately avoid any future decline in water quality.

Objective 5 seeks to achieve sustainable land use and is supported by Policies 5.1 and 5.2 which promote sustainable land use practices to avoid, remedy, or mitigate any significant degradation of water quality and avoid adverse environmental effects from the discharge of contaminants to land.

The review of conditions has introduced the most up to date landfill management practices to ensure the ongoing operation of the facility is sustainable and that a precautionary approach is taken to avoid, remedy, or mitigate any significant degradation of water quality and environmental effects from the discharge of contaminants to land.

Objective 11 seeks to maintain or enhance surface water quality. This objective is supported by Policy 11.4 which sets out to ensure that adverse effects from hazardous substances discharged to water are avoided, remedied or mitigated, and Policy 11.9 which seeks to require major dischargers of contaminants to water to contribute to monitoring surface water quality.

Objective 13 seeks to maintain groundwater quality in the Region, and to improve groundwater quality where it is locally degraded. This objective is supported by Policies 13.1, 13.2, and 13.3 which are aimed at preventing discharges of contaminants to land or into the ground where these will have significant adverse effects on groundwater quality, groundwater used for domestic water supplies, and the disposal of hazardous waste to land or into the ground where it may contaminate groundwater.

The review of conditions has set out to specifically address the potential adverse effects associated with contaminants entering the land, underlying groundwater aquifers, and surface water. To date there is no evidence of adverse effects arising from the landfill operation, and as such the changes to conditions are centred on a monitoring programme with early detection imperatives to ensure that in the event of contamination levels reaching certain thresholds appropriate steps can be taken to prevent significant adverse effects on surface water and groundwater quality.

2.2.2 Land and Water Regional Plan

The Land and Water Regional Plan does not include any Objectives or Policies that are specific to the operation of landfills, but it does clearly identify the issues relating to degraded surface water and groundwater quality in the Horowhenua and specifies some objectives and policies which seek to improve water quality in relation to discharges to land. These include Objectives DL 1-4 and Policies DL 1-4. These provisions are not considered to be directly relevant to this review as they are predominantly focused on improving degraded groundwater and surface water. The review of conditions is not intended to enhance groundwater quality and surface water, but seeks to maintain existing quality and ensure that it does not decline as a result of the landfill's continued operation.

The Land and Water Regional Plan also contains objectives and policies relating to discharges to surface water, including Objectives DSW 1-4, however these provisions are more specific to direct discharges to water as opposed to non-point source discharges to land which will enter groundwater and surface water.

The commentary of the Regional Policy Statement and Proposed One Plan provisions adequately addresses the issues identified in the Land and Water Regional Plan with more specific relevance to the circumstances of this review, accordingly no further comments are made with respect to the Land and Water Regional Plan.

2.2.3 Proposed One Plan

The Proposed One Plan is the Consolidated Resource Policy Statement, Regional Plan and Regional Coastal Plan for the Manawatu-Wanganui Region. The Proposed One Plan was notified on 31 May 2007. The first round of submissions closed on 31 August 2007. Further Submissions were notified on 17 November 2007 and closed on 19 December 2007. Multiple pre-hearings and hearings have taken place, with provisional determinations being issued with respect to some Chapters of the Plan.

It is acknowledged that final decisions pertaining to the Proposed One Plan have yet to be made and as such technically no significant amount of weight can be placed on its provisions. Nonetheless, the following assessment has been undertaken on the basis that the provisions of the Proposed One Plan reflect the future regulatory direction of the Horizons Regional Council and as such are very relevant to the exercising of those consents subject to this review.

Those objectives of most relevance to this review include Objectives 3-2, 6-1, and 6-2, and those policies identified and commented on below.

Objective 3-2 relates to waste, hazardous substances and contaminated sites and the imperative for Horizons and Territorial Authorities to work together in a regionally consistent way to:

- i. minimise the quantity of waste requiring disposal in the Region and ensure it is disposed of appropriately;
- ii. manage adverse effects from the use, storage, disposal and transportation of hazardous substances; and
- iii. manage adverse effects from contaminated land.

Policy 3-9 relates to landfill management, and notes that landfills shall be designed, constructed, managed, operated, remediated and monitored in line with appropriate guidelines and national environmental standards:

- a. Guidelines, May 2004, Ref. ME510.
- b. Ministry for the Environment, Module 1: Hazardous Waste Guidelines – Identification and Record-keeping June 2002, Ref. ME637.
- c. Ministry for the Environment, Waste Acceptance Criteria for Class A Landfills – Final Report, September 2003, Ref. TR131.
- d. Ministry for the Environment, Good Practice Guide for Assessing and Managing Odour in New Zealand, June 2003.
- e. Ministry for the Environment, Good Practice Guide for Assessing and Managing the Environmental Effects of Dust Emissions, September 2001.

- f. Landfill gas collection and destruction or reuse as per the Resource Management (National Environmental Standards Relating to Certain Air Pollutants, Dioxins and Other Toxics) Regulations 2004.

It is noted that Golder Associates in their review of the existing consent conditions for the Levin Landfill have taken into consideration and referenced the following guidelines:

- New Zealand Ministry for the Environment, 2001: A Guide for the Management of Closing and Closed Landfills in New Zealand.
- New Zealand Ministry for the Environment, 2003: Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas.
- New Zealand Ministry for the Environment, 2004: Hazardous Waste Guidelines, Landfill Waste Acceptance Criteria and Landfill Classification.
- Resource Management (National Environmental Standards Relating to Certain Air Pollutants, Dioxins and Other Toxics) Regulations 2004: SR 2004/309.

It is considered that these guidelines are those that are most pertinent to the specific issues and potential adverse effects associated with the ongoing operation of the Levin Landfill. While not all of those guidelines cited in Policy 3-9 have been specifically cited, it is considered that the review has been generally consistent with the intent of the Policy and those guidelines that have informed the changes to conditions are deemed to be those most closely aligned to the central issues of the review.

Objective 6-1 relates to water management values and seeks to ensure that surface waterbodies are managed in a manner which sustains their life-supporting capacity and recognises and provides for the values set out in Schedule D.

Objective 6-2 relates to water quality.

- a. Surface water quality is managed to ensure that:
- i. water quality is maintained in those rivers where the existing water quality is sufficient to support the values of the river;
 - ii. water quality is enhanced in those rivers where the existing water quality is not sufficient to support the values of the river;
 - iii. accelerated eutrophication or sedimentation of lakes in the Region is prevented or minimised; and
 - iv. the special values of rivers protected by water conservation orders and local water conservation notices are maintained.
- b. Groundwater quality is managed to ensure that the existing groundwater quality is maintained.

Policy 6-1: Water management zones and values

For the purposes of managing water quality, water quantity, and activities in the beds of rivers and lakes, the rivers and lakes in the Manawatu-Wanganui Region have been divided into the water management zones shown in Schedule D. The rivers and lakes shall be managed in a manner which recognises and provides for the values identified in Schedule D for each water management zone. The values and their associated purposes are set out in Table 6.2.

Policy 6-2: Water quality standards

Water quality standards relating to the values described in Policy 6-1 have been developed for each water management zone, as shown in Schedule D. The water quality standards in Schedule D shall be used for the management of surface water quality in the manner set out in Policies 6-3, 6-4 and 6-5.

Policy 6-3: Ongoing compliance where water quality standards are met

- a. In each case where the existing water quality meets the relevant water quality standard within a water management zone, as shown in Schedule D, activities shall be managed in a manner which ensures that the water quality standard continues to be met.
- b. For the avoidance of doubt, subsection (a) applies:
 - i. in circumstances where the existing water quality of a water management zone meets all of the water quality standards for the zone (in which case subsection (a) applies to every water quality standard for the zone); and
 - ii. in circumstances where the existing water quality of a water management zone meets some of the water quality standards for the zone (in which case subsection (a) applies only to those standards met).

Policy 6-4: Enhancement where water quality standards are not met

In each case where the existing water quality does not meet the relevant water quality standard within a water management zone, as shown in Schedule D, activities shall be managed in a manner which enhances water quality in order to meet the water quality standard for the water management zone shown in Schedule D.

- a. For the avoidance of doubt, subsection (a) applies:
 - i. in circumstances where the existing water quality of a water management zone does not meet any of the water quality standards for the zone (in which case subsection (a) applies to every water quality standard for the zone); and
 - ii. in circumstances where the existing water quality of a water management zone does not meet all of the water quality standards for the zone (in which case subsection (a) applies only to those standards not met).

Policy 6-6: Maintenance of groundwater quality

- a. Discharges and land-use activities shall be managed in a manner which maintains the existing groundwater quality.
- b. Groundwater takes in the vicinity of the coast shall be managed in a manner which avoids saltwater intrusion.

In respect to the above Objectives and Policies relating to surface water and groundwater quality, the following comments are made:

- The Hokio Stream downstream of the Lake Horowhenua outlet is in the Lake Horowhenua (Hoki_1) Water Management Zone and the Hokio (Hoki_1b) Sub-Zone. Schedule D identifies the Hokio (Hoki_1b) Sub-Zone as having an ecosystem value of

life supporting capacity (LSC), which means the waterbody supports healthy aquatic life / ecosystems.

- The Hokio (Hoki_1b) Sub-Zone has been afforded the certain values within Schedule D, including Contact Recreation, Amenity, Mauri, Stockwater, Native Fish Spawning, Native Fishery, Capacity to Assimilate Pollution.
- The review and associated changes to conditions will ensure that the Hokio Stream is managed in a manner which sustains its life-supporting capacity and recognises and provides for the values set out in Schedule D.
- The monitoring programme outlined in the revised Condition 3 includes three new monitoring locations on the Hokio Stream, upstream, downstream, and alongside the landfill. The monitoring programme outlined in the revised Condition 3 also includes several new monitoring locations for shallow and deep groundwater. The parameters and frequency of the monitoring includes an initial comprehensive quarterly monitoring regime for a period of two years. Any reduction in sampling frequency is conditional on a number of grounds, including that there shall be no decline in water quality between the upstream and downstream monitoring sites on the Hokio Stream, and no decline in groundwater overall, as determined from indicator parameter trends over a period of four consecutive sampling rounds. Accordingly, the review has sought to maintain existing water quality in the Hokio Stream and groundwater quality in the shallow and deep aquifers through the addition of a more robust monitoring programme.
- Those water quality standards in Schedule D that have been deemed relevant and applicable to the specific characteristics of landfill leachate and associated contaminants have all been reflected in the comprehensive and indicator parameter lists (Tables E and F) of revised Condition 3. These parameters form the basis of the monitoring programme and hence will be utilised in managing both surface water and groundwater quality.
- The review of conditions has set out to specifically address the potential adverse effects associated with contaminants entering the land, underlying groundwater aquifers, and surface water. To date there is no evidence of adverse effects arising from the landfill operation, and as such the changes to conditions are centred on a monitoring programme with early detection imperatives to ensure that in the event of contamination levels reaching certain thresholds appropriate steps can be taken to prevent significant adverse effects on surface water and groundwater quality.

Overall, it is considered that the review of conditions has delivered a more stringent mitigation framework to ensure that the operation of the landfill is consistent with the relevant objectives and policies of the Proposed One Plan on an ongoing basis.

2.2.4 Lake Horowhenua & Hokio Stream Catchment Management Strategy (1998)

The Lake Horowhenua & Hokio Stream Catchment Management Strategy seeks to avoid the adverse effects on water quality from discharges of contaminants to land or water in the catchment.

The strategy encourages the Regional Council to regulate discharges of contaminants to land where they may reach water, or to water in the Lake Horowhenua and Hokio Stream catchment through rules in the Transitional Regional Plan by November 1998.

This strategy and the Transitional Regional Plan to which it relies on, have ultimately been superseded by subsequent planning documents. It is noted however that the imperatives of the strategy have been carried through with respect to provisions in the Regional Policy Statement and Proposed One Plan which seek to regulate discharges of contaminants to land where they may reach water, or to water in the Lake Horowhenua and Hokio Stream catchment. These provisions have been commented on above and taken in account in the review of conditions where relevant.

2.2.5 Overall Conclusion

After considering the above Regional Policy Statements and Plans, I consider that the proposed activity is generally consistent with the relevant Objectives and Policies.

3. PART II

All of the matters specified in section 104 of the RMA to which the consent authority must 'have regard to' are subject to Part II of the RMA which sets out the purpose and principles of the Act and which have been given due consideration in this review of conditions.

Section 5 – Purpose of the Act

Section 5 of Part II identifies the purpose of the RMA as being the sustainable management of natural and physical resources. This means managing the use of natural and physical resources in a way that enables people and communities to provide for their social, cultural and economic well being while sustaining those resources for future generations, protecting the life supporting capacity of ecosystems, and avoiding, remedying or mitigating adverse effects on the environment.

The Levin Landfill is a valuable asset that provides for the waste disposal needs of the community. The review of conditions will ensure that the ongoing operation of the landfill is managed in a more sustainable manner. The refinements to the existing consent conditions have been informed by up to date scientific reasoning and a transparent process to encapsulate the views of the community. The resultant suite of conditions establish a stringent framework to protect the life supporting capacity of the Hokio Stream and groundwater aquifer ecosystems, and avoid, remedy or mitigate any adverse effects on the environment.

It is considered that the review of conditions meets the purpose of the Act as set out in section 5.

Section 6 – Matters of National Importance

Section 6 of the Act sets out a number of matters of national importance, including the preservation and protection of outstanding natural features and the natural character of the coastal environment.

While the Parliamentary Commissioner for the Environment has investigated the issues at the Levin Landfill, this review is not considered to be a matter of national importance.

It is important to recognise however, that the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga as specified in section 6(e) has been a key consideration during the review process.

Consultation with local iwi and hapu representatives through the pre-hearing process has resulted in agreed changes to the consent conditions to better reflect their relationship with the groundwater and surface water, in particular the Hokio Stream. This includes a more robust monitoring programme, clear processes for further investigation and remediation if required, and ongoing opportunities for dialogue around the management and operation of the landfill. Accordingly, it is considered that the review has appropriately recognised section 6 of the Act.

Section 7 – Other Matters

Section 7 identifies a number of “other matters” to be given particular regard in the consideration of any assessment for resource consent, and includes the efficient use of natural and physical resources, and the maintenance and enhancement of amenity values.

There are no significant other matters that need consideration in relation to this proposal, other than to reaffirm that the proposal will enhance and maintain the quality and amenity of the existing environment.

Section 8 – Treaty of Waitangi

Section 8 requires the principles of the Treaty of Waitangi to be taken into account.

The proposal is considered to be consistent with the principles of the Treaty of Waitangi, particularly given the participation of local iwi in the pre-hearing process and those agreements reached in delivering the refined conditions of consent.

4. CONSENT DURATION

All of the consents subject to this review have already been consented for a term expiring 35 years from the commencement of the consents. This term is not subject to any form of review and cannot be changed as part of this process.

5. RECOMMENDATION

It is recommended that Horizons Regional Council change the conditions of resource consents 6009/1, 6010/1, 6012/1, 7289/1 and 10259 as outlined below, pursuant to section 132 of the Resource Management Act 1991 for the following reasons:

- The review of conditions has resulted in amendments that will more appropriately deal with any adverse effects on the environment arising from the exercise of consent;
- The review of conditions has resulted in amendments that will more appropriately adopt the best practicable option to remove or reduce any adverse effect on the environment;
- The review of conditions has appropriately assessed and provided for the nature of the discharges and the receiving environment;

- The revised conditions are more consistent with the relevant objectives and policies of the Operative Regional Policy Statement, Operative Land and Water Regional Plan, and Proposed One Plan; and
- The outcome of the review is consistent with the purpose and principles of the Resource Management Act 1991.

And subject to the following conditions:

The Decisions

Note: For the purposes of clarification these Permits relate to:

The **closed Levin landfill** defined as at or about Area A on Figure 1, attached to and forming part of these Permits.

The **currently utilised Levin lined landfill** defined as at or about Area B on Figure 1, attached to and forming part of these Permits.

The red text depicts and differentiates those changes to conditions that have resulted from this review process, as agreed by all parties through the pre-hearing process.

Determination – Discharge Permit 6010

Consent is granted to the Horowhenua District Council to **discharge landfill leachate onto and into land** at the Levin landfill, Hokio Beach Road, Levin, legally described as Lot 3 DP 40743 Blk II Waitohu Survey District, for a term expiring 35 years from the commencement of the consent subject to the following conditions:

1. Charges, set in accordance with section 36(1)c of the Resource Management Act 1991, and section 690 A of the Local Government Act 1974, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of this resource consent and for the carrying out of its functions under section 35 (duty to gather information, monitor, and keep records) of the Act.

[Note: Section 36(1)c of the Act provides that Council may from time to time fix charges payable by holders of resource consents. The procedure for setting administrative charges is governed by section 36(2) of the Act and is currently carried out as part of the formulation of the Council’s Annual Plan.]

General Conditions – Discharge leachate to ground

2. Landfill leachate shall not contaminate adjoining land.
3. The Permit Holder shall commence the following monitoring programme:

Table A: Landfill Groundwater Monitoring Locations, Parameters, and Frequency – Deep Aquifer Wells

| Location | Parameters and frequency |
|---|--|
| C2dd, E1d, E2d and any other future deep monitoring well unless installed for background monitoring purposes. | Quarterly comprehensive for 2 years. <i>Subsequently, conditional</i> Annual comprehensive Quarterly indicator. |
| G1d and any other future deep monitoring well installed for background monitoring purposes. | Quarterly comprehensive for 1 year <i>Subsequently</i> Annual comprehensive Quarterly indicator |
| All monitoring wells where indicator parameters show leachate influence over 3 consecutive sampling rounds. | Annual pesticide / semi VOC |

Table B: Summary of Landfill Groundwater Monitoring Locations, Parameters, and Frequency – Shallow Aquifer Wells

| Location | Parameters and frequency |
|---|---|
| C1, C2, C2ds, D4 B1, B2, B3s, E1s, E2s and any other shallow Compliance monitoring well installed in the future. | Six monthly comprehensive for 2 years Quarterly indicator <i>Subsequently, conditional</i> Annual comprehensive Quarterly indicator |
| D5, F1, F2, F3 and any other shallow monitoring well installed to monitor leachate irrigation areas in the future. | Six monthly comprehensive for 2 years Quarterly indicator <i>Conditional</i> Annual comprehensive Quarterly indicator |
| G1s and any other shallow Background monitoring well installed in the future. | Quarterly comprehensive for 1 year <i>Subsequently, conditional</i> Quarterly indicator |
| D1, D2, D3r, D6, and any other Early Detection wells installed in the future. | Quarterly comprehensive for 2 years <i>Subsequently, conditional</i> Annual comprehensive Quarterly indicator |
| All monitoring wells where indicator parameters show leachate influence over 3 consecutive sampling rounds. | Annual pesticide/ semi VOC |

Groundwater levels are to be measured and recorded during each sampling procedure.

Conditions: A reduction in sampling frequency at any groundwater monitoring point is conditional on:

- A. Completion of the initial monitoring program;

- B. Good consistency of groundwater sample analysis results, or a clearly identified reason for inconsistent results that excludes the contaminant source being landfill operations, stored waste or leachate;
- C. No decline in groundwater quality as determined from indicator parameter trends over a period of four consecutive sampling rounds;
- D. If a well being monitored on a conditional frequency becomes non-compliant with condition C, the monitoring frequency for that well should return to the initial monitoring frequency until conditions B and C are again being fulfilled.

Sampling frequency for the shallow monitoring wells installed to monitor proposed leachate irrigation areas as defined in Table B may begin on the conditional basis, however the frequency is to revert to the unconditional frequency if leachate irrigation begins and continues from that date as if the monitoring well had been newly installed.

If site management planning indicates any early detection monitoring well is likely to become buried or otherwise destroyed within the following year as a result of normal operations:

- E. This must be communicated to the regional council as soon as practicable;
- F. A replacement well is to be constructed in a position agreed upon with the Environmental Protection Manager at Horizons Regional Council;
- G. The replacement well should be installed in a position suitable to act as an early detection well and be classed as an early detection well; and
- H. The replacement well should be constructed as a nested well (or two separate wells) with screens positioned in both shallow and deep aquifers.

Table C: Other Water Monitoring Locations, Frequencies and Parameters

| Location | Parameters and frequency |
|----------------------|--|
| HS1, HS2, HS3 | Quarterly comprehensive for 2 years <i>Subsequently, conditional</i> Six monthly comprehensive Quarterly indicator |
| Leachate Pond Outlet | Quarterly comprehensive for 2 years Six monthly pesticide / semi VOC <i>Subsequently, conditional</i> Six monthly comprehensive Quarterly indicator Annual pesticide / semi VOC |

Conditions: A reduction in sampling frequency at the Hokio Stream monitoring locations is conditional on:

- I. Completion of the initial two year monitoring program;

- J. Good consistency of water sample analysis results, or a clearly identified reason for inconsistent results that excludes the contaminant source being landfill operations, stored waste or leachate;
- K. No decline in water quality between monitoring sites HS1 and HS3 as determined from indicator parameter trends over a period of four consecutive sampling rounds.
- L. If the Hokio Stream monitoring locations are being sampled on a conditional frequency and become non-compliant with condition K, the monitoring frequency for all three monitoring locations should return to the base case intensive monitoring until conditions J and K are again being fulfilled.

Conditions: A reduction in sampling frequency at the leachate pond outlet is conditional on:

- M. Completion of the initial 2 year monitoring program;
- N. Good consistency of water sample analysis results, or a clearly identified reason for inconsistent results;
- O. No decline in water quality over a period of four consecutive sampling rounds.
- P. If the leachate pond outlet is being sampled on a conditional frequency and becomes non-compliant with condition O, the monitoring frequency should return to the base case intensive monitoring until conditions N and O are again being fulfilled.

If existing analysis records indicate that the water quality at a monitoring location complies with the requirements permitting a shift to a conditional sampling schedule, this may be done immediately. If the site complies, sampling for these parameters can be instigated following the base schedule while sampling for the other parameters can be continued based on the conditional schedule.

Locations: (Unless otherwise stated, locations are described on Figure 4, attached to and forming part of this consent).

Table D: Monitoring Point Locations

| Monitoring group | Monitoring point | Location |
|---------------------|--------------------------------------|--------------------------------------|
| Shallow groundwater | B1 | |
| | B2 | |
| | B3s | |
| | C1 | |
| | C2 | |
| | C2ds | |
| | D1 | |
| | D2 | |
| | D3r | |
| | D4 | |
| | D5 | Lined landfill area groundwater bore |
| D6 | Lined landfill area groundwater bore | |

| | | |
|------------------|-------------------|---|
| | E1s | |
| | E2s | |
| | F1 | Groundwater bore downflow from irrigation area |
| | F2 | Groundwater bore downflow from irrigation area |
| | F3 | Groundwater bore downflow from irrigation area |
| | G1s | South Eastern boundary of the site (proposed location) |
| Deep groundwater | C2dd | |
| | E1d | |
| | E2d | |
| | G1d | South Eastern boundary of the site (proposed location) |
| Stream | HS1 | Hokio Stream – upstream of landfill (Refer Fig. 2) |
| | HS2 | Hokio Stream – alongside landfill (Refer Fig. 2) |
| | HS3 | Hokio Stream at or about 50 metres downstream of landfill property boundary(Refer Fig. 2) |
| Soils | Refer Condition 5 | In land disposal area |
| Leachate | | Pond outlet |

Parameters: The comprehensive and indicator parameter lists referenced in Tables A, B and C are presented in Tables E and F.

Table E: Comprehensive Analysis List

| Type | Parameters |
|----------------|--|
| Characterising | pH, electrical conductivity (EC), alkalinity, total hardness, suspended solids |
| Oxygen demand | COD, BOD |
| Nutrients* | NO ₃ -N, NH ₄ -N, DRP, SO ₄ |
| Metals* | Al, As, Cd, Cr, Cu, Fe, Mg, Mn, Ni, Pb, Zn |
| Other elements | B, Ca, Cl, K, Na |
| Organics | Total organic carbon, total phenols, volatile acids |
| Biological | Faecal coliforms |

* Analyses performed for nutrients and metals are for dissolved rather than total concentrations.

Table F: Indicator Analysis List

| Type | Parameters |
|----------------|--|
| Characterising | pH, EC |
| Oxygen demand | COD |
| *Nutrients | NO ₃ -N, NH ₄ -N |
| *Metals | Al, Mn, Ni, Pb |
| Other elements | B, Cl |

* Analyses performed for nutrients and metals are for dissolved rather than total concentrations.

Schedule: The sampling regime defined in Tables A to C shall be undertaken based on the following schedule:

- Q. The first samples for all parameters shall be taken in July 2010.
- R. Quarterly monitoring referred to in Tables A and B shall be carried out in January, April, July and October.
- S. Six monthly monitoring referred to in Tables A and B shall be carried out in April and October.
- T. Annual monitoring referred to in Table A shall be carried out in April.
- 4. The Permit Holder shall monitor soils in the irrigated areas. The first soil samples from an irrigation area shall be taken in the first year that leachate is irrigated to land in that area and shall be taken prior to irrigation. Thereafter, samples shall be taken on the schedule provided in Table H.

Table H: Soil Monitoring Locations, Parameters, and Frequencies

| Location | Parameters and frequency |
|------------------------------|--|
| All soil sampling locations. | Background prior to irrigation Six monthly metals and other elements for 2 years Annual pesticide / semi VOC <i>Subsequently, conditional</i> Annual metals and other elements |

Parameters: The analysis parameters applied for soil monitoring are presented in Table I:

Table I: Irrigated Soil Analysis List

| Type | Parameters |
|----------------|--|
| Metals | Al, As, Cd, Cr, Co, Hg, Ni, Pb, Zn |
| Other elements | Cl, B |
| Organics | Pesticides to screen concentrations Semi-volatile organic compounds |

Schedule: The sampling regime defined in Table H shall be undertaken based on the following schedule:

- A. Six monthly monitoring referred to in Table H shall be carried out in April and October.
- B. Annual monitoring referred to in Table I shall be carried out in April.

The first samples required by the schedule in Table H shall be taken during April or October immediately following the start of irrigation, whichever comes first.

Soil sample sites shall be chosen in consultation with the Regional Council. Soil samples shall be obtained from two locations within each leachate irrigation area, with the sampling locations separated by at least 50 m. In addition, a soil sample shall be obtained from one location down gradient from each leachate irrigation area, with the sampling point selected at a low point between dunes. Each soil sample shall consist of a continuous soil core obtained from the surface to a depth of 0.2 m.

Conditions: A reduction in soil sampling frequency for the sites located within a leachate irrigation area, based on the mean of the analysis results for the two sites, is conditional on:

- C. Completion of the initial two year monitoring program.
 - D. Good consistency of soil sample analysis results.
 - E. No continuous increase in contaminant concentrations in soils as determined from parameter trends for the majority of the metals tested over four consecutive sampling rounds.
 - F. If a leachate area being monitored on a conditional frequency becomes non-compliant with condition E, the monitoring frequency for that area should return to the base case intensive monitoring until conditions D and E are again being fulfilled.
 - G. Pesticides or semi-volatile organic compounds being below the screen detection limits in the leachate collected from the lined landfill during the previous two sampling rounds.
5. The results of monitoring under Conditions 3 and 4 of this Permit shall be reported to the Regional Council by 31 August each year for the duration of this Permit.
 6. The Permit Holder shall ensure the above monitoring programme is undertaken by either the Regional Council, or, an independent organisation approved by the Environmental Protection Manager of the Regional Council.
 7. The Permit Holder shall inform the Neighbourhood Liaison Group of the identity of the organisation carrying out the monitoring.
 8. The Permit Holder shall meet the costs of the monitoring.
 9. The Permit Holder shall report the results of the monitoring to the Neighbourhood Liaison Group by 31 August each year for the duration of the Permit.

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.
11. (a) Should any shallow aquifer groundwater and surface water 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.
- (b) Should any surface water parameters tested for under Condition 3 of this consent indicate a decline in water quality between monitoring points HS1 and HS3, as referred to in Table E, 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.
- (c) In the event that a report is submitted to the Regional Council pursuant to Conditions 11(a) or 11(b) and the Regional Council has determined that further investigation or remediation measures are required, then:
- (i) The Regional Council may require the Permit Holder to develop a mitigation or remediation plan.
 - (ii) In the event that the Regional Council determines that a mitigation or remediation plan is required, the Regional Council shall advise the Permit Holder of this requirement in writing within two months of receiving the Condition 11(a) or 11(b) report.
 - (iii) Within six months of receipt of advice in writing from the Regional Council pursuant to Condition 11(c) (ii), the Permit Holder shall submit a mitigation or remediation plan to the Regional Council for approval.
 - (iv) Any mitigation or remediation plan prepared in accordance with Condition 11(c) shall include a timetable for implementation.
 - (v) Following approval of a mitigation or remediation plan prepared in accordance with Condition 11(c) (iii), if the Regional Council determines that the adverse effects of the landfill activity itself on the shallow groundwater aquifer or surface water will be more than minor, the Regional Council shall require the Permit Holder to implement the plan within the timeframe specified in the timetable for implementation required by Condition 11(c) (iv).

- (d) The Permit Holder shall annually review the data derived from the groundwater monitoring program and evaluate contaminant mass load projections for discharges from the landfill to the Hokio Stream. The contaminant mass load projections shall be based primarily, but not exclusively, on the monitoring data obtained for the “B” and “C” series bores indicated in Table D of this discharge permit. The annual report required under Condition 5 shall include the following information:
- (i) A summary of the methodology used to calculate the mass load projections.
 - (ii) The calculated mass loads transported in the groundwater and comparable mass loads in the Hokio Stream.
 - (iii) An analysis of the implications of the mass load calculations with respect to ensuring discharges from the landfill would not result in a decline in the water quality in the Hokio Stream under Condition 3.
- (e) Should the groundwater parameters tested for under Condition 3 of this consent, and subsequent evaluation and indicative assessment of contaminant mass loads under Condition 11(d) of this consent indicate that contaminants sourced from either the closed or active areas of the Levin Landfill are likely to result in a future decline in the water quality of the Hokio Stream, as defined under Condition 3, then:
- (i) The Permit Holder shall include in the annual report required by Condition 5 an analysis of the significance of the result.
 - (ii) The Regional Council may at any time require the Permit Holder to undertake further investigations and/or conduct a detailed assessment of mass loads to evaluate the actual likelihood of a future decline in water quality of the Hokio Stream as a result of landfill activities as measured under Condition 3. The Permit Holder shall provide a report to the Environmental Protection Manager at the Regional Council documenting the further investigations undertaken or the methodology, procedure and outcomes of the detailed assessment.
 - (iii) If the work required under Condition 11(e) (ii) discloses an actual likelihood of a future water quality decline of the Hokio Stream as a result of landfill activities, and the Regional Council determines that this decline in water quality would constitute a more than minor effect on the water quality of the Hokio Stream, the Regional Council shall require the Permit Holder to develop a mitigation or remediation plan.
 - (iv) For the purposes of quantifying whether the adverse effects of the landfill activity itself on the water quality of the Hokio Stream will be more than minor, any determination made by the Regional Council may be independently peer reviewed, at the request of either the NLG or the Permit Holder, by an appropriately qualified and experienced person. The request for a peer review must be lodged with the Regional Council within a period of one month following the determination by the Regional Council.

The peer reviewer shall prepare a detailed report which analyses the determination of adverse effects made by the Regional Council, and provide clear recommendations as to whether implementation of a mitigation or remediation plan is required for the

purposes of adopting the best practicable option to remove or reduce the more than minor adverse effect on the water quality of the Hokio Stream. This report shall be completed within a period of three months of the request for a peer review.

Should a peer review of the determination be undertaken, the Regional Council shall take into account the outcome of the review in again determining whether this decline in the water quality of the Hokio Stream would constitute a more than minor effect on the water quality of that stream.

- (v) In the event that the Environmental Protection Manager at the Regional Council determines that a mitigation or remediation plan is required, the Regional Council shall advise the Permit Holder of this requirement in writing within two months of receiving the annual report.
- (vi) Within six months of receipt of advice in writing from the Regional Council pursuant to Condition 11(e) (v) the Permit Holder shall submit a mitigation or remediation plan to the Regional Council for approval.
- (vii) Any mitigation or remediation plan prepared in accordance with Condition 11(c) or Condition 11(e) (v) shall include a timeframe or threshold for implementation.
- (viii) Following the completion of the mitigation or remediation plan, if the Regional Council determines that the potential adverse effects of the landfill activity itself on the water quality of the Hokio Stream, as monitored under Condition 3, continue to be more than minor, the Regional Council shall require the Permit Holder to implement the plan within the timeframe specified in the timetable for implementation required by Condition 11(c) (vii) or alternatively when the threshold identified is triggered .

[Advice Note: Condition 11 may be subject to a review pursuant to s 128 (1)(a) of the Resource Management Act 1991 (see condition 31) and it is anticipated such a review will occur in the event of disagreement by either the Permit Holder or NLG with any determination of the Regional Council in relation to condition 11 (a) – (e)]

12. Should any parameters tested for under Condition 3 of this consent from the deeper gravel aquifer (bores identified as C2dd, E1, E2, the proposed G1d and any other monitoring bore intersecting the deep gravel aquifer), exceed the requirements of the Ministry of Health's Drinking Water Standards for New Zealand 2000, the Permit Holder shall report to the Regional Council as soon as practicable on the significance of the results 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.
13. Sampling of the groundwater wells within a 1.5 km radius down-flow or across-flow from the landfill property boundary is to be carried out by the Permit Holders representative upon receiving a written invitation from the bore owners. The frequency of sampling is to be decided through discussion between the bore owner and the Permit Holder. Initial analyses from individual bores are to be tested for the parameters in the Comprehensive Analysis List in Condition 3. Subsequent testing may be performed based on the Indicator Analysis List in Condition 3. Should

analysis of water obtained from any groundwater wells used for human drinking water show concentrations of parameters which exceed the requirements of the Ministry of Health's Drinking Water Standards for New Zealand 2000, or repeated sampling from a specific bore indicates a decrease in water quality, the Permit Holder shall report to the Regional Council and the bore owner as soon as practicable on the significance of the results. Where the exceedance or decreasing water quality can be attributed to landfill leachate, the Permit Holder shall consult with the Regional Council and the bore owner to determine if further investigation or remedial measures are required.

14. Any currently active and future lined landfill area shall be closed and remediated by:
- a) Compacting refuse to such an extent and consistent with CAE guidelines of 600-800 kg/m³, to ensure post closure settlement is minimised as far as practicable; and
 - b) Grading to a final slope of less or equal to 1V:3H (1 in 3) on any face; and
 - c) Ensuring the landfill cap incorporates a layer at least 700 mm thick with a permeability of no greater than 1×10^{-7} m/s, or has a material and layer structure that reduces rainwater infiltration to the waste to an equivalent extent; and
 - d) Establishing and maintaining a grass or tussock vegetation cover on the capped landfill, unless it can be demonstrated to the Regional Council's satisfaction that a different vegetation cover can produce clear benefits through reducing infiltration to the covered waste. Any vegetation cover should be consistent with an ongoing capacity to monitor and maintain the ongoing integrity of the landfill cap.

In-situ refuse density shall be determined through annual calculation based on information derived from topographic surveys of the landfill and borrow areas, and from weighbridge records. The survey shall be carried out within one month of the anniversary of the previous survey.

Specific Conditions – discharge leachate to ground from existing landfill

15. The Permit Holder shall close and remediate the existing unlined landfill by April 2011 by:
- a) Grading to a final slope on the landfill faces and caps of between 1V:3H (1 in 3) and 1V:40H (1 in 40);
 - b) Ensuring the final landfill surface is sloped to promote run-off toward the outside of the landfill footprint and prevent surface water ponding on the landfill cap;
 - c) Ensuring the landfill cap incorporates a layer at least 700 mm thick. All material added to the existing cap to bring the thickness up to 700 mm, or for future cap maintenance purposes, is to have a permeability of no greater than 1×10^{-7} m/s;

- d) Establishing and maintaining a grass or tussock vegetation cover on the capped landfill consistent with an ongoing ability to monitor and maintain the integrity of the landfill cap. The vegetation is to be managed to exclude tree species that can potentially develop root systems capable of disrupting the landfill cap and thereby enhancing rainwater infiltration;
- e) Monitoring the landfill cover on an annual basis to identify areas of differential settlement slope stability issues, erosion and changing vegetation patterns, including a topographic survey to ensure Conditions 15(a) to (d) continue to be met; and
- f) The Permit holder shall submit an annual report to the Regional Council by 31 August 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].

The area of the existing landfill to be remediated is defined as Area A on Figure 1 attached.

- 16. Within one month following the remediation of the Levin landfill, the Permit Holder shall report in writing to the Regional Council of the Permit Holder's compliance with Conditions 14 and 15 of this permit.

Specific Conditions – Discharge leachate to ground from lined landfill

Environmental Effects

- 17. There shall be no disposal of leachate sludge from the pond onto irrigation areas. Leachate sludge shall be disposed of in accordance with Condition 26 of consent number 6009 and Condition 18 of consent number 7289.
- 18. The rate of application of leachate irrigated to land shall not exceed 200 kg Nitrogen/hectare per year.
- 19. There shall be no ponding or runoff of leachate on or beyond the irrigation areas.
- 20. 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.
- 21. 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 irrigation.
- 22. 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.

Process Management

23. The daily volume of leachate irrigated to land shall be metered and recorded.
24. 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.
25. The Permit Holder shall have carried out the works described in Condition 14(a) to (d) of this permit to rehabilitate:
 - a. Any lined landfill area within four months following the closure of that lined landfill area, if the landfill area is closed before 35 years from the granting of this consent.
 - b. Any lined landfill area before 35 years from the granting of this consent.

[Note: "lined landfill area" is defined as a distinct "cell" or stage of the landfill.]

Monitoring and Reporting

26. 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:
 - a. A map showing areas to be irrigated;
 - b. Design of the recirculation, treatment and irrigation systems;
 - c. Contingency measures in case of failures in the irrigation system;
 - d. Criteria for installing aerators in the leachate pond;
 - e. Assessment of options for recirculating leachate over the lined landfill;
 - f. Assessment of groundwater profile beneath the irrigation area and effects leachate irrigation will have on groundwater;
 - g. Groundwater and soil monitoring programme, including a map showing sampling locations; and
 - h. Any other relevant matter.
27. The Permit Holder shall keep a log of:
 - a. The dates and times of leachate irrigation;

- b. The total volume of leachate irrigated daily;
- c. The volumes of leachate irrigated to specific areas;
- d. Weather and ground conditions during irrigation;
- e. Observations made during the weekly inspections of the pump, irrigation system and irrigation areas; and
- f. Repairs and maintenance carried out on the irrigation system.

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.

- 28. The Permit Holder shall inspect the landfill for leachate break out, settlement and other adverse environmental effects at least once per month until such time as discharge of refuse to the landfill ceases. Thereafter, the frequency of inspection shall be determined in consultation with the Regional Council.
- 29. The Permit Holder shall record the date, time, observations and any remedial action as a result of Condition 28. The record shall be made available to the Regional Council on request.

Review

- 30. The Regional Council shall initiate a publicly notified review of Conditions 3, 4, 11 (a) – (e), 12, 13, 14, 24, 27, 28 and 29 of this Permit in April, 2015, 2020, 2025, 2030 and 2035, unless the Neighbourhood Liaison Group (NLG) agrees that a review is unnecessary. The reviews shall be for the purpose of:
 - a. Assessing the adequacy of monitoring outlined in Conditions 3 and 4 of this consent; and/or
 - b. Assessing the effectiveness of Conditions 11(a) – (e), 12, 13, 14, 24, 27, 28 and 29 of this consent,

in avoiding, remedying or mitigating adverse effects on the environment surrounding the Levin Landfill.

The review of conditions shall allow for the:

- c. Modification of monitoring outlined in Conditions 3 and 4 of this consent;
- d. Deletion or changes to Conditions 11(a) – (e), 12, 13, 14, 24, 27, 28 and 29 of this consent;
- e. Addition of new conditions as necessary ,

to avoid, remedy or mitigate adverse effects on the environment surrounding the Levin Landfill.

31. The Regional Council may initiate a publicly notified review of Conditions 11 (a) – (e) of this Permit at any time outside those reviews required by Condition 30. The review shall be carried out pursuant to section 128 (1)(a)(i) of the Resource Management Act 1991 and shall be for the specific purpose of:
- a. Assessing the need and appropriateness of implementing a mitigation or remediation plan as the best practicable option to remove or reduce any adverse effect on the water quality of the Hokio Stream.

The review of conditions shall allow for the:

- b. Deletion or changes to Conditions 11(a) – (e) of this consent;
- c. Addition of new conditions as necessary,
to avoid, remedy or mitigate adverse effects on the environment surrounding the Levin Landfill.

The review of conditions shall have regard to:

- d. The nature of the discharge and the receiving environment; and
- e. The financial implications for the applicant of including that condition; and
- f. Other alternatives, including a new condition requiring the observance of minimum standards of quality of the receiving environment, having regard to the need to be satisfied that including that condition is the most efficient and effective means of removing or reducing that adverse effect.

Determination – Discharge Permit 6009

Consent is granted to the Horowhenua District Council to **discharge solid waste to land** at the Levin landfill, Hokio Road, Levin, legally described as Lot 3 DP 40743 Blk II Waitohu Survey District, for a term expiring 35 years from the commencement of the consent subject to the following conditions:

1. This permit does not authorise the disposal of liquid waste to land at the Levin Landfill.

Liquid waste is defined as:

Septic tank waste, grease trap waste, sewage and any material that contains free liquids.

The presence of free liquids may be determined by either of the following methods, whichever is most practicable at the time:

- i. The “Paint Filter Test”; or
- ii. Material which may be loaded, transported and deposited at the landfill without the risk of free liquid seeping from the material, and without the risk of having the deposited material flow under gravity down any slope on the landfill shall be deemed to not contain free liquids.

General Conditions – Discharge Solid Waste to Land

2. The Permit Holder shall take all practicable measures to avoid the discharge of waste from within the landfill to surrounding land. To this end, the Permit Holder shall ensure:
 - a. The amount of refuse exposed at any one time is confined in dimension to 800 square metres of tipping face; and
 - b. Exposed refuse is covered at the end of each day that refuse is received at the landfill.
3. If refuse is discharged from within the active landfill areas to land outside the legal boundary of the landfill property, the Permit Holder shall ensure that such waste is cleared and removed to the landfill as soon as practicable.
4. The Permit Holder will monitor the landfill at least once every two weeks for the build up of litter, paper and other deposits outside the active landfilling areas, and remove such material as required.
5. The Permit Holder shall regularly inspect for the presence of vermin, birds and other pests take appropriate measures to control them.
6. The Permit Holder shall regularly inspect the landfill for noxious weeds, and take appropriate measures to control those noxious weeds.

Hazardous Material

7. The Permit Holder shall not allow the disposal of waste of an explosive, flammable, reactive, toxic, corrosive or infectious nature, to an extent that the waste poses a present or future threat to the environment or the health and the safety of people.
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 by the Regional Council by 31 August each year for the term of this Permit.
9. The Permit Holder shall maintain a secure facility for any small quantities of hazardous waste, pending a decision on treatment, disposal or transfer to another facility.
10. Hazardous waste stored at the facility described in Condition 9 shall be stored in a sealed and bunded area to avoid adverse effects from spills.
11. Any hazardous waste accepted for disposal shall be disposed within an adequate volume of mature refuse, in accordance with Centre for Advanced Engineering's Landfill Guidelines (2000).

Monitoring and Reporting

Specific Conditions – Discharge Solid Waste to Land at Existing Landfill

12. No solid waste shall be disposed to the existing landfill, after two years from the commencement of this consent.
13. All new fill should be placed on top of at least 2 metres of existing material in the existing landfill.
14. The Permit Holder shall update the Landfill Management Plan in respect of the operations on the lined landfill to the satisfaction of the Environmental Protection Manager at the Regional Council within six months of the completion of the review of the consents. The Landfill Management Plan shall include, but not be limited to:
 - a. The specific conditions contained herein, related to the operation, management and monitoring of the landfill.
 - b. A description of the development and maintenance of the landfill.
 - c. A description of how the consent will be exercised in a manner to ensure compliance with the consent and the conditions thereof and the Resource Management Act 1991.

- d. A description of how the consent will be exercised to minimise adverse effects on the environment.
- e. A description of the hazardous waste acceptance criteria, including the criteria set out.
- f. The emergency procedures to be followed in the event of natural emergencies and hazardous waste spills.
- g. The methods of controlling dust and odour emissions including the criteria for assessing when, and how regularly, roadways and the landfill are dampened by water or otherwise.
- h. Details of measures to avoid nuisance effects on adjacent properties i.e. birds and vermin, as a result of landfill activities.
- i. Operational, intermediate and final capping requirements.
- j. Closure and aftercare.
- k. Procedure to update the management plan, in light of changing circumstances, to continue compliance with Conditions of this Permit.
- l. A screen planting implementation description.
- m. 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.

The Permit holder shall prepare a Closed Landfill Aftercare Management Plan in respect of the closed landfill (Area "A") to the satisfaction of the Environmental Protection Manager at the Regional Council within six months of the completion of the review of the consent conditions. The Closed Landfill Aftercare Management Plan shall include, but not be limited to those aspects that are detailed in Appendix E of the MfE publication entitled 'A guide for the Management of Closing and Closed Landfills in New Zealand (May 2001)'. The Closed Landfill Aftercare Management Plan shall require at the least:

- n. Grading to a final slope on the landfill faces and caps of between 1V:3H (1 in 3) and 1V:40H (1 in 40);
- o. Ensuring the final landfill surface is sloped to promote run-off toward the outside of the landfill footprint and prevent surface water ponding on the landfill cap;
- p. Ensuring the landfill cap incorporates a layer at least 700 mm thick. All material added to the existing cap to bring the thickness up to 700 mm, or for future cap maintenance purposes, is to have a permeability of not greater than 1×10^{-7} m/s.

- q. Establishing and maintaining a grass or tussock vegetation cover on the capped landfill consistent with an ongoing ability to monitor and maintain the integrity of the landfill cap as per Condition 15 (d) of Consent 6010.
- r. Monitoring the landfill cover on an annual basis to identify areas of differential settlement slope stability issues, erosion and changing vegetation patterns, including a topographic survey to ensure Conditions 14(n) to (q) continue to be met;

The Permit holder shall submit an annual report to the Regional Council by 31 August 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]

Specific Conditions – Discharge of Offal and Dead Animals to Land

- 15. Offal waste shall be immediately buried in depth of 0.6 metres upon delivery.
- 16. All animals disposed of as diseased animals under the Animal Act 1967 shall be immediately buried to a depth of at least 1 metre.
- 17. Pits for the burial of offal and animals shall be excavated in mature refuse and shall be away from the public tipping area.
- 18. Pits for the burial of offal and animals shall be at least 10 metres from any landfill batter slope.
- 19. Pits for the burial of offal and animals shall not exceed a maximum size of two metres by 15 metres.
- 20. The immediate cover material of all offal and animals shall be a minimum depth of at least 100 millimetres unless these conditions specify otherwise. Pits shall be filled to within one metre of the prior refuse surface level and reinstated with appropriate compaction with previously removed refuse or other suitable material.
- 21. Pits for the burial of offal and animals shall be demarcated as such and shall be fenced off.
- 22. Any other malodorous wastes not already covered specifically by these conditions shall be covered immediately upon disposal.

Specific Conditions – Discharge of Biosolids and Sludges to Land

- 23. Biosolids, sludges and similar materials which do not contain free liquids may be accepted at the landfill as solid waste. This shall include dewatered municipal wastewater treatment plant solids, dewatered processing plant solids and dewatered agricultural wastes.

The presence of free liquids may be determined by either of the following methods, whichever is most practicable at the time:

- i. The "Paint Filter Test"; or
 - ii. Material which may be loaded, transported and deposited at the landfill without the risk of free liquids seeping from the material, and without the risk of having the deposited material flow under gravity down any slope on the landfill shall be deemed to not contain free liquids.
24. If not co-disposed of within the landfill, the biosolids, sludges and similar materials shall be applied to the landfill surface in accordance with the 1992 Ministry of Health Guidelines for the "safe use of sewage effluent and sewage sludge on land".
25. The Permit Holder shall maintain records of:
- a. The type of waste received;
 - b. The volume of waste received;
 - c. Source of waste; and
 - d. The location in which the material was placed.
26. Disposal of site-generated sludge from cess-pits, leachate ponds or other site activities that contain free liquids is acceptable to facilitate site operation, provided this does not adversely affect landfill stability or face operations.

Specific Conditions – Discharge Solid Waste to Land at Lined Landfill

27. Design specifications and a set of construction drawings for the lined landfill shall be forwarded to the Regional Council (Environmental Protection Manager) for certification, to ensure compliance with the conditions of this consent and all related consents, at least three months prior to the intended construction of the lined landfill begins.
28. The Permit Holder shall construct the liner system for all new cells to include the following elements:
- a. A smooth base constructed from insitu materials the level of which is above the winter groundwater level.
 - b. A geosynthetic clay liner (GCL) a minimum of 5mm thick, with a coefficient of permeability not exceeding 3×10^{-11} m/s. The Permit Holder shall supply documentation from the manufacturer demonstrating quality control procedures ensuring that 95 % of the GCL meets the coefficient of permeability standard required.
 - c. A synthetic flexible membrane (high density polyethylene, HDPE with a minimum thickness of 1.5 mm, or polypropylene, PP with a minimum thickness of 1.0 mm).

- 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 a protective layer of sand 300 mm thick that will be placed progressively as the landfill rises.
 - e. Provision for the collection of leachate from the liner and reticulating to a treatment system outside the landfill area.
 - f. An alternative to any of the above as agreed from time to time, in writing, between the Permit Holder and the consent authority.
29. Nine months prior to 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).
30. If any ancient human remains or artefacts are discovered during any earthworks activity associated with the construction and maintenance of the landfill, then works shall cease, and the Consent Holder shall immediately inform the Environmental Protection Manager of the Regional Council and relevant iwi. Further work in the vicinity of the find shall be suspended while relevant iwi carry out their procedures for the removal of taonga. The Environmental Protection Manager of the Regional Council will inform the Consent Holder when work can recommence in the vicinity of the find.
31. The Regional Council shall initiate a publicly notified review of Conditions 2, 8, 14 (a) to (m), 28, 29, 32, 33, and 34 of this permit in April 2015, 2020, 2025, 2030 and 2035, unless the Neighbourhood Liaison Group (NLG) agrees that a review is unnecessary. The reviews shall be for the purpose of:
- a. Assessing the adequacy of the management plan outlined in Conditions 14 and 29 of this consent; and/or
 - b. Assessing the effectiveness of Conditions 2, 8 and 28 of this consent.
 - c. Assessing the effectiveness of the NLG outlined in Conditions 32, 33 and 34.

In avoiding, remedying or mitigating adverse effects on the environment surrounding the Levin Landfill, the review of conditions shall allow for:

- d. Modification of the management plan outlined in Conditions 14 and 29 of this consent;
- e. Deletion or changes to Conditions 2, 8 and 28 of this consent;
- f. Deletion or changes to Conditions 32, 33, and 34; and
- g. Addition of new conditions as necessary.
- h. An alternative to any of the above as agreed from time to time, in writing, between the Permit Holder and the consent authority.

To avoid, remedy or mitigate adverse effects on the environment surrounding the Levin Landfill.

Specific Conditions – Neighbourhood Liaison Group (hereinafter “NLG”)

32. The Permit Holder shall establish a NLG. The following shall be eligible to be members:
- a. Representation from Lake Horowhenua Trustees and Ngati Pareraukawa;
 - b. The owners and occupiers of those properties adjoining the Levin Landfill property described as A through to N on Drawing 2181 attached;
 - c. 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
 - d. A representative from each of the Horowhenua District and the Regional Council, being consent authorities.
33. The Permit Holder shall:
- a. Convene one meeting one month after the commencement of the consents;
 - b. Thereafter at intervals of six months for the first 18 months after the date of exercising the consent; and
 - c. Thereafter at intervals of no more than 12 months unless 80% of the people attending a meeting agree that changes to the intervals are acceptable.
34. The Permit Holder Shall:
- a. Supply notes of each meeting to the Group Members;
 - b. Forward an annual report to members and to the Regional Council and the District Council;
 - c. Forward any other information to the Group Members, in accordance with the conditions of the consents; and
 - d. The Permit Holder shall ensure the NLG members are:
 - i. Able to advise the Permit Holder of potential members of the NLG.
 - ii. 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. 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.

- iii. 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).
- iv. 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.
- v. 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).
- vi. 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.
- vii. Kept informed by the Permit Holder as to whether or not progress is being made towards a regional landfill.

Charges

35. Charges, set in accordance with section 36(1)c of the Resource Management Act 1991, and section 690 A of the Local Government Act 1974, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of this resource consent and for the carrying out of its functions under section 35 (duty to gather information, monitor, and keep records) of the Act.

[Note: Section 36(1)c of the Act provides that Council may from time to time fix charges payable by holders of resource consents. The procedure for setting administrative charges is governed by section 36(2) of the Act and is currently carried out as part of the formulation of the Council's Annual Plan.]

Determination – Discharge Permit 6011

Consent is granted to the Horowhenua District Council to **discharge landfill gas, odour and dust to air** at the Levin landfill, Hokio Road, Levin, legally described as Lot 3 DP 40743 Blk II Waitohu Survey District, for a term expiring 35 years from the commencement of the consent subject to the following conditions:

1. Charges, set in accordance with section 36(1)c of the Resource Management Act 1991, and section 690 A of the Local Government Act 1974, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of this resource consent and for the carrying out of its functions under section 35 (duty to gather information, monitor, and keep records) of the Act.

[Note: Section 36(1)c of the Act provides that Council may from time to time fix charges payable by holders of resource consents. The procedures for setting administrative charges are governed by section 36(2) of the Act and is currently carried out as part of the formulation of the Council's Annual Plan.]

Environmental Effects

2. The Permit Holder will ensure dust is controlled on access roads and on the landfill, if necessary, by watering or other methods.
3. There shall be no discharge of odour or dust from the landfill that in the opinion of a Regional Council Enforcement Officer is noxious, dangerous, offensive, or objectionable beyond the property boundary. The Permit Holder will also ensure that:
 - a. On-site and off-site Health and Safety Effects of landfill gas being emitted by the old landfill should be quantified by sampling groundwater monitoring wells for evidence of landfill gas when groundwater samples are taken from the wells. As a minimum, the gases tested for are to include methane, carbon dioxide and oxygen; and
 - b. Any building constructed on the landfill site is adequately ventilated.
4. There shall be no deliberate burning of waste or other material at the landfill. If fires occur at the landfill they shall be extinguished as quickly as possible.
5. The Permit Holder shall take all practicable steps to avoid, remedy or mitigate significant adverse effects of the discharge of landfill gases to air.

Monitoring and Reporting

6. The Permit Holder shall keep a record of any complaints received. The complaints record shall include the following, where possible:
 - a. Names and addresses of complainant;
 - b. Nature of complaint;

- c. Date and time of the complaint and alleged event;
- d. Weather conditions at the time of the event; and
- e. Any action taken in response to the complaint.

The record shall be made available to the Regional Council on request.

The Permit Holder shall also keep a record of landfill gas monitoring results including:

- a. Date and time of sampling;
- b. The concentrations of gasses detected.
- c. Weather conditions at the time of sampling.

The monitoring results shall be made available to the Regional Council on a quarterly basis.

- 7. The Regional Council shall initiate a publicly notified review of Conditions 3 and 6 of this permit in April 2015, 2020, 2025, 2030 and 2035, unless the Neighbourhood Liaison Group (NLG) agrees that a review is unnecessary. The reviews shall be for the purpose of:

- a. Assessing the effectiveness of Conditions 3 and 6 of this consent;

in avoiding, remedying or mitigating adverse effects on the environment surrounding the Levin Landfill, the review of conditions shall allow for the:

- b. Changes to Conditions 3 and 6 of this consent; and
- c. Addition of new conditions as necessary;

to avoid, remedy or mitigate adverse effects on the environment surrounding the Levin Landfill.

Determination – Discharge Permit 7289

Consent is granted to the Horowhenua District Council to **discharge liquid waste onto and into land** at the Levin landfill, Hokio Road, Levin, legally described as Lot 3 DP 40743 Blk II Waitohu Survey District, for a term expiring 35 years from the commencement of the consent subject to the following conditions:

1. Charges, set in accordance with section 36(1)c of the Resource Management Act 1991, and section 690 A of the Local Government Act 1974, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of this resource consent and for the carrying out of its functions under section 35 (duty to gather information, monitor, and keep records) of the Act.

[Note: Section 36(1)c of the Act provides that Council may from time to time fix charges payable by holders of resource consents. The procedure for setting administrative charges is governed by section 36(2) of the Act and is currently carried out as part of the formulation of the Council’s Annual Plan.]

2. Liquid wastes shall only be placed at the Levin Landfill as a contingency to normal disposal.
3. For the purposes of this Permit, contingency conditions are circumstances where liquid waste is unable to be treated and disposed of at its regular location, for reasons of either, unforeseen events, breakdown or temporary closure for maintenance purposes.
4. Liquid wastes are defined as the following:
 - a. Septic tank waste (“septage”);
 - b. Grease trap waste;
 - c. Sewage; and
 - d. Any material that contains free liquids.

The presence of free liquids may be determined by either of the following methods, whichever is most practicable at the time:

- i. The “Paint Filter Test”; or
 - ii. Material which may be located, transported and deposited at the landfill without the risk of free liquid seeping from the material, and without the risk of having the deposited material flow under gravity down any slope on the landfill shall be deemed to not contain free liquids.
5. The Permit Holder shall notify the Regional Council’s Environmental Protection Manager and the Neighbourhood Liaison Group 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.

The Permit Holder shall detail the reason for the discharge, volume of discharge and timing of the discharge.

Each nominated member of the Neighbourhood Liaison Group shall be notified in writing by post.

6. The maximum annual volume of liquid waste discharged shall not exceed 150 cubic metres (150 m³) in any calendar year. (Calendar year is defined as being over any 12 month or 365 day period.)
7. Subject to Condition 6, the volume of liquid waste discharge shall not exceed 75 cubic metres (75 m³) during any seven day period.
8. Subject to Condition 6 and 7 the maximum daily volume of liquid waste discharged shall not exceed 20 cubic metres (20 m³).
9. The liquid material shall be placed in trenches which are no more than 2m wide, 1.5m deep and 5m long which are excavated in compacted refuse which is at least six months old and located within a lined landfill area.
10. Only one trench shall be open at any one time.
11. Trenches shall be at least 10 metres from any landfill batter slope.
12. The open trench shall be open for no longer than two weeks.
13. Trenches shall be filled with liquid wastes to a depth of not less than 1m below the prior refuse surface level and reinstated with appropriate compaction with previously removed refuse and cover.
14. The location of placement and cumulative volume will be identified on a site plan which shall be made available to the Regional Council upon request.
15. The location and placement shall be appropriately signed and fenced.
16. The Permit Holder will ensure odours, vermin and flies are not generated from or do not accumulate in open trenches.
17. The Permit Holder shall maintain records of:
 - a. The type of liquid waste received;
 - b. The volume of liquid waste received;
 - c. The source of liquid waste; and
 - d. The location in the landfill in which the material was placed.

18. In addition to the material that is accepted on the basis set out above, the consent holder may dispose of site-generated sludges that contain free liquids from cess-pits, leachate ponds or other site activities to facilitate site operation, provided this does not adversely affect landfill stability or face operations. The disposal of such materials is not to be included within the quantity restrictions as set out in Conditions 6, 7 and 8 of this permit.
19. The Regional Council shall initiate a publicly notified review of Conditions 5, 9, 12 and 17 of this permit in April 2015, 2020, 2025, 2030 and 2035, unless the Neighbourhood Liaison Group (NLG) agrees that a review is unnecessary. The reviews shall be for the purpose of:
- a. Assessing the adequacy of the monitoring conditions outlined in Conditions 5 and 17; and
 - b. Assessing the effectiveness of Conditions 9 and 12 of this consent,

in avoiding, remedying or mitigating adverse effects on the environment surrounding the Levin Landfill.

The review of conditions shall allow for the:

- c. Modification of monitoring outlined in Conditions 5 and 17;
- d. Changes to Conditions 9 and 12 of this consent; and
- e. Addition of new conditions if necessary,

to avoid, remedy or mitigate adverse effects on the environment surrounding the Levin Landfill.

Decision – Discharge Permit 102259

The Team Leader Consents of the Manawatu-Wanganui Regional Council (trading as horizons.mw) has considered this non-notified application. On 15 May 2002 the Team Leader pursuant to delegated authority under section 34 of the Resource Management Act, grants Discharge Permit 102259 pursuant to section 105 of the Act, to Horowhenua District Council to **discharge stormwater to land and potentially to groundwater via ground soakage** from the Levin landfill, Hokio Beach Road, Levin, subject to the following conditions.

1. This Permit shall be for a term of 35 years from the date of commencement of Levin Landfill Consents 6009 – 6011 and 7289.
2. Pursuant to section 125(1) of the Resource Management Act 1991, this Permit shall not lapse within its duration of 35 years.
3. The activities authorised by this Permit shall be restricted to the discharge of stormwater to land via ground soakage originating from the existing fill site or any part of the new lined landfill that has had, or is intended to have, refuse placed beneath or upon it, as shown on Plan C102259 attached to and forming part of this Discharge Permit.
4. All works and structures relating to this Discharge Permit shall be designed and constructed to conform to best engineering practices and shall at all times be maintained to a safe and serviceable standard.
5. The Permit Holder shall ensure that the stormwater system, including all drains and ponds, is kept clear of refuse at all times.
6. The Permit Holder shall ensure the stormwater soakage ponds are inspected regularly and maintained to optimise their performance at all times. This shall include de-sludging or remediating the ponds as required.
7. There shall be no ponding in the stormwater soakage areas 12 hours after the last rain event.
8. There shall be no runoff or existing discharge of stormwater beyond the property boundary that has originated on any landfill area or new lined landfill area that has had, or is intended to have, refuse placed on it.

Management – Existing Landfill

9. As far as practically possible, the Permit Holder shall ensure that all stormwater from the existing landfill area is directed to a centralised soakage area to the south of the existing fill, as shown on Plan C 102259.

Management – New Landfill

10. Where it is practical and economical to do so, the Permit Holder shall ensure that within the operational landfill cell the minimum amount of stormwater shall be allowed to come into contact with refuse. This shall be effected by constructing impermeable

barriers, diversion drains or bunds on the side slopes and within the base of the landfill.

11. There shall be no contamination of stormwater with leachate. Leachate includes any stormwater within an operational cell that is not separated from refuse by a barrier as defined in Condition 10.
12. The Permit Holder shall ensure that a suitable stormwater soakage area is available for a given design storm and the area of the operational cell from which the stormwater is collected.
13. Areas designated for stormwater discharge to land and their catchment and reticulation system shall be identified and located on site plans and their dimensions submitted for approval by horizons.mw's Team Leader Compliance prior to their use.

Monitoring

14. The Permit Holder shall monitor groundwater quality in at least one upgradient and one downgradient bore of the existing landfill stormwater soakage area, and at least one upgradient and two downgradient bores of the new landfill area. The location and number of bores is to be determined in consultation with horizons.mw's Team Leader Compliance. Groundwater samples shall be taken quarterly in January, April, July and October for the term of this Discharge Permit, beginning in October 2002, and analysed for the following parameters:
 - PH
 - Conductivity
 - Ammonia-N
 - Nitrate-N
 - Sodium
 - Boron
 - Chloride
 - Iron
15. Monitoring bores required in Condition 14 of this Discharge Permit can be incorporated into the monitoring programme of other Levin Landfill Consents (6009-6011 and 7289), providing the information sought is obtained at the frequency specified and reported as required for this Permit.
16. The results of monitoring under Condition 14 of this permit shall be reported to Horizon Manawatu's Team Leader Compliance by 31 August each year for the duration of this Permit beginning 31 August 2003. The annual report shall be supplemented by the raw water quality analysis data being forwarded to the Regional Council as soon as practically possible following the receipt of laboratory analysis certificates.
17. If a laboratory is used for water quality analyses which does not have independent accreditation for the parameters measured, then on each sampling occasion duplicate samples from at 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 horizons.mw.

18. Should any groundwater and surface water 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.
19. The Regional Council shall initiate a publicly notified review of all conditions of this Permit in April 2015, 2020, 2025, 2030 and 2035, unless the Neighbourhood Liaison Group (NLG) agrees that a review is unnecessary. The reviews shall be for the purpose of:
- i. reviewing the effectiveness of these conditions in avoiding or mitigating any adverse effects on the environment; and/or
 - ii. reviewing the adequacy of the monitoring programme required by this discharge permit.

The review of conditions shall allow for:

- i. the deletion or amendment to any conditions of this permit; and
- ii. the amendment or addition of new conditions as necessary to avoid, remedy or mitigate any adverse effects on the environment

If necessary and appropriate, the review provided for under this condition shall require the Permit Holder to adopt the best practicable options to avoid, remedy or mitigate any significant adverse effects on the environment.

20. Charges, set in accordance with section 36(1)c of the Resource Management Act 1991, and section 690 A of the Local Government Act 1974, shall be paid to horizons.mw for the carrying out of its functions in relation to the administration, monitoring and supervision of this resource consent and for the carrying out of its functions under section 35 (duty to gather information, monitor, and keep records) of the Act.

[Note: Section 36(1)c of the Act provides that horizons.mw may from time to time fix charges payable by holders of resource consents. The procedure for setting administrative charges is governed by section 36(2) of the Act and is currently carried out as part of the formulation of horizons.mw's Annual Plan.]



Dave Moule
CONSULTANT PLANNER

6. DECISION

For the reasons reported above, the Group Manager Regional Planning and Regulatory of the Manawatu-Wanganui Regional Council (pursuant to delegated authority), approves those changes to conditions of resource consents 6009, 6010, 6012, 7289, and 10259 as outlined above, pursuant to section 132 of the Resource Management Act 1991.



Greg Carlyon

GROUP MANAGER REGIONAL PLANNING AND REGULATORY

31 May 2010

APPENDIX A

Environment Court Consent Order

APPENDIX B

Parliamentary Commissioner for the Environment Report (Aug 2008) and Tonkin and Taylor Report (March 2008)

APPENDIX C

Submissions

APPENDIX D

Pre-hearing Meeting Minutes

APPENDIX E

Letter to Submitters 3 March 2010 and Section 100 Withdrawal Forms

APPENDIX F

Golder Associates Report (5 May 2010)
