



Annual Compliance Audit Report

Horowhenua District Council – Levin Landfill

February 2022

Consents:

ATH-2002003982.03 (6009), ATH-2002003983.02 (6010), ATH-2002003984.02 (6011), ATH-2002003985.01 (6012), ATH-2002003680.02 (7289), ATH-2002009801.02 (102259), and ATH-2014015044.01 (106798)

Reporting Period

July 2020 – June 2021

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Front Cover Photo
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EXECUTIVE SUMMARY

This report assesses compliance against resource consents held by Horowhenua District Council (HDC) in relation to the operation of the Levin landfill for July 2020 to June 2021 assessment period;

- ATH-2002003982.03 (6009) – discharge of solid waste to land
- ATH-2002003983.02 (6010) – discharge of landfill leachate onto and into land
- ATH-2002003984.02 (6011) – discharge of landfill gas, odour, and dust to air
- ATH-2002003985.01 (6012) – diversion of stormwater
- ATH-200200368.02 (7289) – discharge of liquid waste onto and into land
- ATH-2002009801.02 (102259) – discharge of stormwater to land
- ATH-2014015044.00 (106798) – discharge to air (gas flare)

As a result of this assessment the Levin Landfill has been rated as Moderately Non-Compliant.

This rating has been given primarily due to Moderate Non Compliances in relation to monitoring conditions as set out under Discharge Permit ATH2002003984.02 (6011) for the discharge of landfill gas, odour and dust to air.

Specifically ongoing non-compliances with monitoring requirements set out under condition 5 in relation to the performance of the biofilter.

It is acknowledged that the ongoing use of the biofilter is subject to a resource consent application to vary conditions of consent currently lodged with Horizons Regional Council (Horizons); however, as this consent is currently active all conditions of consent are required to be complied with.

Condition 2A of ATH-2002003983.02 (6010) requires the selected leachate remediation option is fully implemented by June 2023.

The report requires information (as set out under the condition assessment below) to be provided to Horizons by **1 August 2022** -

- Landfill Aftercare Management Plan (ATH-2002003982.03 (6009) condition 14),
- Offal and dead animal burial details (depths and locations) (ATH-2002003982.03 (6009) conditions 15, 18, and 25),
- An update on the BPO for leachate remediation (ATH-2002003983.02 (6010) condition 2A),
- Details on current capping status at the landfill (ATH-2002003983.02 (6010) condition 25, and ATH-2002003984.02 (6011) condition 5d), and
- Details on Biofilter maintenance and monitoring (ATH-2002003984.02 (6011) condition 5k),

It is understood that the long-term future of the Levin Landfill is being reviewed by Horowhenua District Council please advise Horizons of any decisions made. It is recommended that the Horizons Consents Team is contacted to discuss any consenting implications in relation to potential closure of Levin landfill.

1. BACKGROUND

The Levin Landfill is owned by Horowhenua District Council (HDC) and is operated by EnviroWaste Services Ltd under subcontract to Midwest Disposals Ltd. The landfill consists of an old unlined section that is under permanent capping and a "new" lined section that was in operation during this assessment period. This lined area consists of multiple lined cells under varying levels of capping.

HDC hold a suite of consents in relation to the operation of the landfill as follows:

- ATH-2002003982.03 (6009) – discharge of solid waste to land
- ATH-2002003983.02 (6010) – discharge of landfill leachate onto and into land
- ATH-2002003984.02 (6011) – discharge of landfill gas, odour, and dust to air
- ATH-2002003985.01 (6012) – diversion of stormwater
- ATH-200200368.02 (7289) – discharge of liquid waste onto and into land
- ATH-2002009801.02 (102259) – discharge of stormwater to land
- ATH-2014015044.00 (106798) – discharge to air (gas flare)

It is understood that HDC is currently reviewing the future of the landfill and the site is currently under either final capping or temporary cap, with no refuse currently being accepted at the site. HDC is due to make a decision on the long term future of the landfill along with management and consenting requirements for the potential closure of the landfill.

1.1. Site

The Levin Landfill is located on Hōkio 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 Hōkio 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 Hōkio Beach is located approximately 1.5 kilometres to the north-west. The Ngatokowaru marae (Ngāti Pareraukawa, Ngāti Raukawa) is located approximately 500 metres north-east of the landfill property, while the Kawiu marae (Muaūpoko) is on the northern shore of Lake Horowhenua.



Figure 1: Aerial Photo of Levin Landfill Site

1.2. Complaints Received

During this assessment period, 1 July 2020 – 30 June 2021, four complaints were received by Horizons via the Pollution Hotline in relation to the Levin Landfill. Of the four complaints in relation to odour, two were attended by Horizons Officers; however, no odour was detected by the duty officer at the time of these inspections (further detail on complaints received provided under condition 3 of resource consent ATH-2002003984.02(6011)).

SCOPE OF THE REPORT

This assessment is based off information provided by the consent holder entitled Levin Landfill Annual Compliance Report July 2020 – June 2021, prepared for the Horowhenua District Council by Stantec (Annual Report), the Levin Landfill Gas Flare Annual Report 2020/2021 produced by the Horowhenua District Council (Flare Report), and other relevant information held on file by Horizons.

GENERAL ASSESSMENT OF CONDITIONS APPLICABLE TO ATH-2002003982.03 (6009) – DISCAHRGE OF SOLID WASTE TO LAND

Consent is granted to the Horowhenua District Council to **discharge solid waste to land** at the Levin *landfill, Hōkio 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.

Information in the Annual Report notes that "No liquid waste was accepted at the Levin Landfill in 2020-2021, neither were any applications received for liquid waste disposal at the landfill in 2020-2021.

Compliance Rating: Comply – Full

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.

No information on tip face area or daily cover operations over the assessment period was provided in the Annual Report as such Horizons is unable to assess this condition; however, no complaints in relation to the discharge of refuse to surrounding land have been received by Horizons during this assessment period.

At the time of writing the entire landfill is under final or temporary cover awaiting decisions on future use of the site. HDC has advised that the landfill ceased receiving refuse in **November 2021**, as such there is currently no open tip face and the entire landfill is either under temporary or permanent cap.

Compliance Rating: Not Assessed

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.

No complaints have been made regarding litter escaping the property boundary during the reporting period. The operator conducts site walk overs to assess the level of litter outside of works area and this is generally picked up at the time of inspection or noted for collection.

Compliance Rating: Comply – Full

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.

HDC have provided copies of site walk over reports for the assessment period undertaken on a weekly basis. These site walk overs assess the level of litter outside of works area and this is generally picked up at the time of inspection or noted for collection.

Compliance Rating: Comply – Full

5. The Permit Holder shall regularly inspect for the presence of vermin, birds and other pests take appropriate measures to control them.

Information in the Annual Report notes “the operator is aware of the presence of feral cats. Shooting of feral cats and seagulls is carried out regularly. Bait stations are used, and the operator will be aware of the need to replace baits if there is more increased vermin activity”. Presence of vermin, birds and other pests is also noted in the weekly site walkover reports.

Compliance Rating: Comply – Full

6. The Permit Holder shall regularly inspect the landfill for noxious weeds, and take appropriate measures to control those noxious weeds.

Information in the Annual Report notes “Spaying of gorse took place at the Levin Landfill in *November 2020. This was managed by HDC’s Parks and Property team and completed by Hayes Spraying Ltd*”.

Compliance Rating: Comply – Full

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.

Envirowaste keeps a log of hazardous waste received which indicates that no loads of hazardous waste were received over the past year and HDC has confirmed that no applications were received for the disposal of hazardous waste.

Compliance Rating: Comply – Full

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 30 September each year for the term of this Permit.

Envirowaste keeps a log of hazardous waste received which indicates that no loads of hazardous waste were received during this assessment period and HDC has confirmed that no applications were received for the disposal of hazardous waste.

Compliance Rating: Comply – Full

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.

No information on this facility was provided in the Annual Report; however, Section 5.5.8 of the LMP states this facility makes use of a shipping container that has been specifically designed for this purpose which is located near the site office.

Compliance Rating: Comply Full

10. Hazardous waste stored at the facility described in Condition 9 shall be stored in a sealed and banded area to avoid adverse effects from spills.

The LMP states this shipping container is appropriately banded and sealed to avoid adverse effects from spills.

Compliance Rating: Not Assessed

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)*.

The hazardous waste log indicates that no hazardous waste was disposed of at the landfill during the reporting period.

Compliance Rating: Not Applicable

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.

The existing landfill as described in this consent is described as the old closed (unlined) landfill or Stage 1 by the operators and HDC. This stage of the landfill has final capping in place.

Compliance Rating: Comply – Full

13. All new fill should be placed on top of at least 2 metres of existing material in the existing landfill.

As detailed in Condition 12, final capping is in place and this condition was verified as being compliant in Horizons Compliance Report 42517 dated 19 May 2011.

Compliance Rating: Comply – Full

14. The Permit Holder shall update the Landfill Management Plan in respect of the operations on the lined landfill to the satisfaction of the Regulatory Manager at the Regional Council before November 2019. 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. **[deleted]**

The Permit Holder shall prepare a Closed Landfill Aftercare Management Plan in respect of the closed unlined 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 30 September each year for the duration of this Permit documenting the condition of the unlined landfill and any maintenance carried out during the previous year. The annual report shall address but not be limited to those aspects listed in Conditions 14(n) to 14(r) above. The annual report shall include a plan of the unlined landfill specifically documenting the shape of the closed landfill and any changes during the previous year related to Condition 14(q) [The annual report can be written in conjunction with the annual report required as part of Condition 15 (f) for Consent Number 6010]

The latest update of the Levin Landfill Management Plan (Ver.3 dated January 2021) was reviewed, and given technical certification in June 2022.

Information from previous compliance reports notes that the "Closed Landfill Aftercare Management Plan" was submitted in 2011. It is understood that no changes have been made since then and is considered current; unfortunately a copy of this plan could not be located on Horizons files. Please provide Horizons with an updated copy of this plan by **1 August 2022**.

The required Annual Report was published on line and made available to Horizons on 30 September 2021.

Information provided in the Annual Report included the required plan of the unlined landfill.
Compliance Rating: Comply – Full

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.

The procedure for disposing of offal is outlined in Section 5.5.5 of the LMP, which includes the requirement for immediate burial to a depth of 0.6m and only after a special waste permit has been issued to the waste generator. The special waste log indicates that three loads of dead frozen chickens from Tegel Foods Ltd were received during the reporting period, totalling 13.4 m³ and one dead cow resulting from road kill.

No information on burial depths was provided in the Annual Report, please provide confirmation of burial depths for this material to Horizons by **1 August 2022** to show compliance with this condition.

Compliance Rating: Not Assessed

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.

Procedures for disposal of diseased animals are detailed in Section 5.5.5 of the LMP which specifies that they must be immediately buried to a depth of at least 1.0m. No information on the disposal of diseased animals was provided in the Annual Report; however, the special waste log does not show any disposal of diseased animals over the assessment period.

Compliance Rating: Not Assessed

17. Pits for the burial of offal and animals shall be excavated in mature refuse and shall be away from the public tipping area.

There is no public tipping at the Levin Landfill and no information on burial locations for these waste was provided in the Annual Report; however, Section 5.5.5 of the LMP states that *"If the contractor excavates and prepares holes for the disposal of offal and dead animals, they will be in a closed previous tipping area and shall be at least 10 metres from any landfill batter slope."* Please provide confirmation of burial location for this material to Horizons by **1 August 2022** to show compliance with this condition..

Compliance Rating: Not Assessed

18. Pits for the burial of offal and animals shall be at least 10 metres from any landfill batter slope.

No information on burial locations for these wastes was provided with the Annual Report; however, as detailed under Condition 17 above, the LMP requires that all offal and dead animals are to be buried at least 10m from any batter slope. Please provide confirmation of burial locations for this material to Horizons by **1 August 2022** to show compliance with this condition.

Compliance Rating: Not Assessed

19. Pits for the burial of offal and animals shall not exceed a maximum size of two metres by 15 metres.

No information on the burial of these wastes was provided in the Annual Report; however, section 5.5.5 of the LMP states: *"If used, the offal holes shall be excavated to a depth of at least 2.5 metres and to a maximum size of 2m by 15m."* Please provide confirmation of burial pit sizes for this material to Horizons by **1 August 2022** to show compliance with this condition..

Compliance Rating: Not Assessed

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.

No information on the burial of these wastes was provided in the Annual Report; however, section 5.5.5 of the LMP states: *"All materials placed in the offal hole shall be covered within one hour of being deposited. The intermediate cover material shall be to a minimum depth of at least 100mm, with a final cover of greater than 300mm provided when closing that hole. The contractor shall maintain the surface over a closed offal hole as a level surface."* Please provide confirmation of cover and compaction for the burial of this material to Horizons by **1 August 2022** to show compliance with this condition..

Compliance Rating: Not Assessed

21. Pits for the burial of offal and animals shall be demarcated as such and shall be fenced off.

No information on the burial of these wastes was provided in the Annual Report; however, section 5.5.5 of the LMP states: "*Offal holes shall be fenced off and the location recorded and sign-posted accordingly.*" Please provide confirmation on demarcation and fencing of any areas used for the burial of for this material to Horizons by **1 August 2022** to show compliance with this condition.

Compliance Rating: Not Assessed

22. Any other malodorous wastes not already covered specifically by these conditions shall be covered immediately upon disposal.

No information on "other malodorous wastes" disposed of onsite was provided as part of the Annual Report; however, Section 5.5.5 of the LMP states: "*All other materials requiring specific burial shall be immediately buried to the specified depth in the presence of the relevant observers.*" Please provide information of disposal of any "other malodorous wastes" to Horizons by **1 August 2022** to show compliance with this condition.

Compliance Rating: Not Assessed

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.

The LMP states that only biosolids and sludges that do not contain free liquids may be accepted at the landfill. HDC maintains a special waste log which records, among other things, when sludges and biosolids are disposed of at the landfill. A copy of the special waste log was provided as part of the Annual Report. This information indicates that 1288.4 tonnes of sludge and 32.7 tonnes of biosolids (wastewater treatment plant screenings) were disposed of at the landfill during the assessment period.

Compliance Rating: Comply – Full

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"*.

No information on how these materials were disposed of was provided in the Annual Report. Section 5.5.6 of the LMP details the procedure for disposal if biosolids or sludges are not co-disposed. Please provide information of disposal of any biosolids or sludges to Horizons by **1 August 2022** to show compliance with this condition.

Compliance Rating: Not Assessed

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.

All waste including special wastes are categorised, weighed and recorded across a weigh bridge prior to disposal at the Levin Landfill. HDC maintains a special waste log which was provided as part of the Annual Report.

The information provided in the special waste log; however, did not provide disposal locations. The Landfill management plan notes in section 5.5.6 that bio solids and sludge will be "co-disposed"; however, this does not extend to offal and dead animals (section 5.5.5) which are to be immediately buried in a closed previous tipping area or dedicated offal hole.

Please provide information on the location of disposal for the four logged instances of dead animal disposal by **1 August 2022**.

Compliance Rating: Comply – Low Risk Non Compliance

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.

All leachate generated from the newer lined landfill is piped directly to the Levin Waste Water Treatment Plant.

Compliance Rating: Not Applicable

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.

The latest cell constructed on site was for Stage 3. Horizons certified the liner design by way of letter dated 1 July 2013 following external review in accordance with this condition.
Compliance Rating: Comply – Not Applicable

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 side slopes a confining layer of gravel 300 mm thick, lain on top of a protective geo fabric and geo-grid, appropriately designed for the site conditions.
 - 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.

The design specifications for liner system as certified under Condition 27 above, included the requirements listed above.

Compliance Rating: Not Applicable

29. **[deleted]**

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 tangata whenua. Further work in the vicinity of the find shall be suspended while relevant tangata whenua 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.

There have been no discoveries of human remains or artefacts made during the course of earthworks during this reporting period.

Compliance Rating: Not Applicable

31. The Regional Council may initiate a review of Conditions 2, 8, 14(a) to (m), 28, 32, 33, and 34 of this permit during the month of October in 2024, 2029 and 2034. 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.

Horizons has not initiated a review of conditions of consent during this assessment period with the next review date being October 2024.

Compliance Rating: Not Applicable

Specific Conditions – *Neighbourhood Liaison Group (hereinafter "NLG")*

32. The Permit Holder shall establish an NLG. Members of the NLG will suggest available and suitably qualified nominees for an independent facilitator in advance of or at the first meeting. The list of nominees must be limited to six nominees. The Permit Holder will confirm that the list of nominees contains suitably qualified people for the facilitator role. The NLG will appoint an independent facilitator from the list of nominees confirmed by the Permit Holder at that same meeting. In the event consensus cannot be reached an independent facilitator will be appointed from the list of nominees by a majority vote of community NLG representatives as identified in (a) to (d) and (g).

The following parties shall be eligible to be members of the NLG with one representative each at NLG meetings:

- a. the Lake Horowhenua Trustees;
- b. Mr Charles Rudd;
- c. Ngati Pareraukawa;
- d. Each of the owners and occupiers of those properties adjoining the Levin Landfill property described as A through to N on Drawing 2181 attached;
- e. Horowhenua District Council
- f. the Manawatu-Wanganui Regional Council; and
- g. Two representatives of the owners and occupiers of the properties affected by the landfill.

Advice Note:

Technical advisors as appointed by any member(s) of the NLG may be invited to NLG meetings if the NLG member(s) consider it reasonable to assist the discussions with the NLG (at the members own cost).

The Permit Holder's staff and contractor shall be able to attend and participate in the NLG meetings and assist on the invitation of the Permit Holder's representative.

At the invitation of the Permit Holder and/or NLG, other parties may attend NLG meetings as jointly agreed by both the Permit Holder and NLG.

The representatives on the NLG are responsible for reporting back to their members and interested parties. The Permit Holder will make (unless confidential) the reports and information provided to the NLG and the minutes of the NLG available on its website.

The Permit Holder is responsible solely for the reasonable costs of administering the NLG, such as providing a venue, the facilitator's costs and drafting up of minutes.

The facilitator will be paid in accordance with level 2 of the fees range for members under Cabinet Office circular (12) 6: "Fees framework for members appointed to bodies in which the Crown has an interest".

HDC has established an NLG which is open to the members as outlined above. An independent facilitator was appointed in accordance with the process outlined above at the first meeting held following the Environment Court Order (dated 19 December 2019) which took place on 30 July 2020.

Compliance Rating: Comply – Full

33. The Permit Holder shall:

- a. Convene one meeting by the end of June 2019 to appoint an independent facilitator in accordance with clause 32:

Horizons note Ms Jenny Rowan has been appointed as the independent facilitator. This condition was previously assessed in Horizons Compliance Report dated 8 June 2021.

Compliance Rating: Not Applicable

- b. Convene a further meeting within two months of the appointment of the independent facilitator;

This condition was previously assessed in Horizons Compliance Report dated 8 June 2021.
Compliance Rating: Not Applicable

- c. Thereafter convene a meeting at intervals of six months for the following 18 months; and

The latest NLG Meeting was held on 21 September 2021 with the previous meeting being in April 2021 (delayed from March 2021 due to COVID-19 lockdowns), within the required six monthly timeframe. Following this timeframe the next NLG meeting was held in March 2022. This meeting was held as a "site visit" undertaken on 28 March 2022, with an additional NLG meeting scheduled to be held in the second half of 2022.

Following this meeting the required 18 month period is expired and meetings may revert to 12 monthly meetings going forward.

Compliance Rating: Comply Full

- d. Thereafter convene a meeting at intervals of no more than twelve months unless all NLG representatives agree that changes are acceptable.

NLG meetings are able to be reduced to 12 monthly with agreement from all NLG Members.
Compliance Rating: Not Applicable

34. The purpose of the NLG is to create a forum in which the Permit Holder, Horizons Regional Council and community can engage for the purpose of reviewing and sharing perspectives on monitoring results, and where appropriate, discuss strategies for maintaining or improving the landfill operation, consistent with the consent conditions.

NLG meeting minutes to date show there has been robust discussion regarding monitoring results and, strategies for maintaining or improving the landfill operation.

Compliance Rating: Comply – Full

35. The Permit Holder Shall:

- a. Supply notes of each meeting to the Group Members;

Minutes of the meetings are made available via the HDC website and the Solid Waste Newsletter which is emailed to all group members.

Compliance Rating: Comply – Full

- b. Forward an annual report to members and to the Regional Council and the District Council;

HDC has provided copies of the Annual Report to Horizons and NLG members via their Solid Waste Newsletter, with the latest issue being December 2021.

Compliance Rating: Comply – Full

- c. Forward any other information to the Group Members, in accordance with the conditions of the consents; and

The information assessed as part of this report indicates relevant reports and other information required by these consents is forwarded to the NLG group members via the Solid Waste Newsletter.

Compliance Rating: Comply – Full

- d. The Permit Holder shall ensure the NLG members are:
 - i. Able to advise the Permit Holder of potential members of the NLG, such new members to be at the agreement of the Permit Holder.

HDC give the NLG members this opportunity during the meetings.

Compliance Rating: Comply – Full

- 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 and Landfill Operator. The Permit Holder and the Landfill Operator 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 regulations, including health and safety regulations and the Management Plan.

NLG members were invited by HDC to attend a site visit to the landfill. This meeting was undertaken on 28 March 2022 which is outside of this assessment period. On review of previous NLG minutes no mention of prior site inspections were found; however this does not indicate that the opportunity has not previously been given.

Compliance Rating: Not Assessed

- iii. Consulted by the Permit Holder as a group prior to any change of conditions pursuant to section 127 of the Resource Management Act 1991 (and/or any consequential amendments).

No application to change conditions of this consent pursuant to s.127 of the Resource Management Act has been lodged with Horizons.

Compliance Rating: Not Applicable

- 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.

The Annual and Quarterly Monitoring Reports relevant to the reporting period have been distributed to Horizons and the NLG members via the Solid Waste Newsletters.

Compliance Rating: Comply – Full

- 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).

The minutes of the meetings show there has been ample discussion regarding compliance with the consent conditions.

Compliance Rating: Comply – Full

- vi. Able to provide written suggestions to the Permit Holder on possible improvements to, or concerns about, the landfilling operations that are formally acknowledged and considered by the Permit Holder at or before the next NLG meeting.

Formal minutes have been kept as above with suggested actions where appropriate.

Compliance Rating: Comply – Full

- vii. Given reasons from the Permit Holder for any comments from the NLG representatives at the annual meeting on environmental and monitoring results in relation to environmental mitigations at the Levin landfill being rejected.

The NLG continues to provide a forum for raising and responding to concerns and these are responded to as required.

Compliance Rating: Comply – Full

- viii. Formally invited to participate in the Permit Holder's Waste Management and Minimisation Plan review process.

The latest Solid Waste Newsletter invites submissions on the future of the Levin Landfill.

Compliance Rating: Comply – Full

- ix. Provided with a copy of any complaints within 10 working days of a request by the NLG.

The NLG meetings minutes do not refer to any such requests, nor is Horizons aware of any other requests being made.

Compliance Rating: Not Assessed

Charges

36. 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.*]

HDC has paid all fees to-date in accordance with this condition.

Compliance Rating: Not Assessed

Overall Compliance Rating for Resource Consent ATH-2002003982.03 (6009): Low Risk Non-Compliance

GENERAL CONDITIONS APPLICABLE TO ATH-2002003983.02 (6010) – DISCHARGE OF LANFILL LEACHATE ONTO AND INTO LAND

Consent is granted to the Horowhenua District Council to **discharge landfill leachate onto and into land at the Levin landfill, Hōkio 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.*]

HDC has paid all fees to-date in accordance with this condition.

Compliance Rating: Not Applicable

General Conditions – Discharge leachate to ground

2. There shall be no overland flow discharge of leachate beyond the site boundary.

Information in the Annual Report notes that a leachate breakout was identified on 18 December 2020 at the base of the landfill near the flare, no further information on this break out was provided. It has since been confirmed with HDC that this did not result in any discharge beyond the site boundary.

Compliance Rating: Comply Full

- 2A By the end of April 2021 the Permit Holder must complete an assessment of leachate remediation options (and a BPO) to:
 - a. cease, or if cessation is not feasible, materially reduce the discharge of *leachate to the Tatana Drain and Hōkio Stream; or*
 - b. if neither of the options in (a) are feasible then options to offset effects within *the Hōkio catchment and if that is not feasible or possible options to compensate effects within the Hōkio catchment or outside of it (either option through an ecological package).*

The Permit Holder must provide a draft of the assessment to the NLG representatives and Horizons Regional Council for comments. The Permit Holder shall decide on an option that is feasible to implement, applying the hierarchy above from the assessment. The Permit Holder must notify the Regulatory Manager of Horizons Regional Council which option it selects, and provide a copy of the final assessment. The selected leachate remediation option must be fully implemented by June 2023.

The required Summary of Leachate Remediation Options Assessment undertaken on behalf of the HDC by Tonkin and Taylor was received by Horizons via email on 29 April 2021 in line with the timeframes set out in the condition above. This assessment was noted at the NLG meeting held on 28 September 2021; however, no decision on option selection has been provided to date. Please ensure the selected leachate remediation option is fully implemented by **June 2023** to ensure ongoing compliance with this condition, and please provide an update on the selection of Leachate Remediation Options to Horizons by **1 August 2022**, and notification of option selection and final assessment is provided as required

Compliance Rating: Comply Full

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. Subsequently, conditional Annual comprehensive Quarterly indicator.
G1d, Xd1 and any other future deep monitoring well installed for background monitoring purposes.	Quarterly comprehensive for 1 year Subsequently Annual comprehensive Quarterly indicator
All monitoring wells.	Annual pesticide / semi VOC

Information in the Annual Report and Quarterly Monitoring reports for the assessment period shows that monitoring wells C2dd, E1d, E2d, Xd1, G1d, and D3rd (replacement bore) were sampled on a quarterly basis, and reported to Horizons via Quarterly Reports in July 2020, October 2020, January 2021 and April 2021.

Bores C2dd, E1d, E2d, and G1d were analysed for "Indicator" parameters for July 2020, October 2020, and January 2021 sampling. The annual comprehensive, pesticide and SVOC analysis was undertaken during the April 2021 sampling.

Bores Xd1 and D3rd received comprehensive analysis on all occasions with Pesticide and SVOC analysis in April 2021.

Previous compliance reports have confirmed the completion of the initial monitoring program therefore, this condition is fully compliant.

Compliance Rating: Comply – Full

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 Subsequently, conditional 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 Conditional Annual comprehensive Quarterly indicator
G1s and any other shallow Background monitoring well installed in the future.	Quarterly comprehensive for 1 year Subsequently, conditional Quarterly indicator
D1, D2, D3r, D6, Xs1, Xs2 and any other Early Detection wells installed in the future.	Quarterly comprehensive for 2 years Subsequently, conditional Annual comprehensive Quarterly indicator
All monitoring wells.	Annual pesticide/ semi VOC

Information provided in the Annual Report and Quarterly Monitoring reports for the assessment period shows that sampling was undertaken from all of the above wells on a quarterly basis and reported to Horizons via Quarterly Reports in July 2020, October 2020, January 2021 and April 2021.

Sampling in July, October and January was analysed for the required “indicator” analysis and the April samples were analysed for the comprehensive suite and pesticides/semi VOC as required.

Previous compliance reports have confirmed the completion of the initial monitoring program (i.e. two years of quarterly comprehensive analysis) therefore, this condition is fully compliant.

Compliance Rating: Comply – Full

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

Ground water level data taken during sampling has been included in each quarterly report.

Compliance Rating: Comply – Full

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.

Previous compliance reports have confirmed the completion of the initial monitoring program. HDC has not requested a reduction in the monitoring frequency.

Compliance Rating: Not Applicable

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.

Information provided in the annual report states that "Bores Xs1 and Xs2 were installed in *late 2020 within the Hokio Beach Road reserve. Bore Xs1 is adjacent to Tatana's property and represents groundwater quality close to Hokio Stream. Bore Xs2 is hydraulically up gradient from the old landfill site*" and, "Bore D3r was replaced in July 2021 by two bores (D3rs and D3rd) located approximately 140 metres northwards of the old D3r bore. The replacement occurred since the old D3r bore was located within the footprint of the future Stage 1B of the landfill".

The location of the replacement bore was approved by Horizons via email on 17 July 2021 and bores have been constructed in accordance with this condition.

Compliance Rating: Comply Full

Table C: Other Water Monitoring Locations, Frequencies and Parameters

Location	Parameters and frequency
HS1,	Monthly comprehensive for comparison purposes with HS1A. Monitoring to be discontinued after 2 years
HS1A, HS2, HS3	Monthly comprehensive for 2 years Subsequently, conditional Six monthly comprehensive Quarterly Indicator
TD1	Six monthly comprehensive Quarterly Indicator
Leachate Pond Outlet	Monthly comprehensive for 2 years Six monthly pesticide / semi VOC Subsequently, conditional Six monthly comprehensive Quarterly indicator Annual pesticide / semi VOC

From information provided in the annual report HS1, HS1A, HS2, HS3, and the Leachate Pond, were all sampled on a monthly basis throughout the 2020-2021 assessment period and analysed for the constituents listed under the "Comprehensive Analysis" list (HS1, HS2, HS3, and the leachate pond were not tested for phenol and VFAs in January 2021).

The Tatana Drain (TD1) was sampled, in July 2020, October 2020, March 2021, and April 2021. Analysis for the July 2020 and March 2021 samples was undertaken for the constituents set out in the "Indicator Analysis" list and the October 2020 and April 2021 samples were analysed for the constituents listed under the "Comprehensive Analysis" list including phenol and VFAs.

Compliance Rating: Comply Full

Conditions: *A reduction in sampling frequency for the Hōkio Stream monitoring locations (HS1A, HS2 and HS3) after April 2021 is conditional on:*

- I. No significant increases in the concentrations between monitoring sites HS1A and HS3, for parameters exceeding the Trigger values contained in Table C1 at Site HS3;
- J. To determine whether there is a significant increase in contaminant levels the consent holder shall engage a suitably qualified freshwater scientist to assess the 24 month water quality monitoring results obtained *for the Hōkio Stream against the* trigger values specified in Table C1, after 24 months of monthly data collection. Should any of the trigger values be exceeded at the downstream monitoring site (HS3 as per Fig. X) the consent holder shall propose a statistical analysis approach to the Regional Council for certification. The analysis shall be run, for the

parameter(s) exceeding the relevant trigger value, on the last 24 consecutive samples to determine if there are any significant increases in concentrations between upstream and downstream. This analysis shall be provided to the Regional Council within 3 months following the completion of the 24 month monitoring period;

Table C1: Trigger Values

<u>Parameter</u>	<u>Measure</u>	<u>Value</u>
Total ammoniacal nitrogen	Maximum (g/m ³)	2.1
Total ammoniacal nitrogen	Average (g/m ³)	0.400
ScBOD ₅	Monthly average (g/m ³)	2
Aluminium	Dissolved, median concentration (g/m ³)	0.055
Arsenic	Dissolved, median concentration (g/m ³)	0.024
Cadmium	Dissolved, median concentration (g/m ³)	0.0002
Chromium (Total)	Dissolved, median concentration (g/m ³)	
Copper	Dissolved, median concentration (g/m ³)	0.0014
Lead	Dissolved, median concentration (g/m ³)	0.0034
Nickel	Dissolved, median concentration (g/m ³)	0.011
Zinc	Dissolved, median concentration (g/m ³)	0.008
Mercury	Dissolved, median concentration (g/m ³)	0.0006

- K. Following the initial 24 month monitoring period, there shall be no significant increases in concentrations between monitoring sites HS1A and HS3 for parameters exceeding the Trigger values contained in Table C1 at Site HS3. The consent holder shall use a statistical approach certified by the Regional Council to determine whether there has been a significant increase in concentrations, based on samples collected over the previous 36 month period.
- L. *If the Hōkio Stream monitoring locations are being sampled on a conditional frequency and do not meet condition K, the monitoring frequency for all three monitoring locations (HS1a, HS2 and HS3) shall return to the base case intensive monitoring until conditions J and K are again being fulfilled.*

HDC has not requested a reduction in the monitoring frequency.

Compliance Rating: Not Applicable

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.

HDC has not requested a reduction in the monitoring frequency.
Compliance Rating: Not Applicable

Locations: (Unless otherwise stated, locations are described on Figure 4, attached to and forming part of this consent, with some of the additional monitoring sites added in the 2015 review shown in Figure X attached to 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)	

	Xs1	<i>Adjacent to Hōkio Stream, opposite the landfill access road</i>
	Xs2	<i>Adjacent to Hōkio Stream, near the HS2 monitoring site</i>
Deep groundwater	C2dd E1d E2d G1d Xd1	South Eastern boundary of the site (proposed location)
Stream	HS1A HS1 HS2 HS3	<i>Hōkio Stream</i> – upstream site up-gradient of landfill groundwater plume (Refer Fig X) <i>Hōkio Stream</i> – opposite landfill access road (refer Fig. X) <i>Hōkio Stream</i> – alongside landfill (Refer Fig. X) <i>Hōkio Stream at or about 50 metres downstream of landfill property boundary(Refer Fig. X)</i>
Tatana Drain	TD1	South-western corner of Tatana Drain
Soils	Refer Condition 5	In land disposal area
Leachate		Pond outlet

Appendix C of the annual report notes locations of all sampling points and shows the locations of all of the above points.

Compliance Rating: Comply – Full

Alternative Sampling Sites: Some of the sampling sites are located on land that is not owned by the consent holder. Sampling at these sites is subject to the land owner approval. If that approval is not given, then samples must be collected from the nearest suitable and accessible site, as agreed to with the Regulatory Manager at the Regional Council.

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, scBOD ₅
Nutrients*	NO ₃ -N, NH ₄ -N, DRP, SO ₄
Metals*	Al, As, Cd, Cr, Cu, Fe, Mg, Mn, Ni, Pb, Zn, Hg
Other elements	B, Ca, Cl, K, Na
Organics	Total organic carbon, total phenols, volatile acids
Biological	E.coli

* 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, scBOD ₅
*Nutrients	NO ₃ -N, NH ₄ -N
*Metals	Al, Mn, Ni, Pb, Hg
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.

This condition has already been complied with and as such further assessment is not required.

Compliance Rating: Not Applicable

R. Quarterly monitoring referred to in Tables A and B shall be carried out in January, April, July and October.

The quarterly monitoring referred to in Tables A and B has been undertaken in the months as prescribed.

Compliance Rating: Comply – Full

S. Six monthly monitoring referred to in Tables A and B shall be carried out in April and October.

Six monthly sampling was only required for the first 2 years of consent and as such is no longer applicable.

Compliance Rating: Not Applicable

T. Annual monitoring referred to in Table A shall be carried out in April.

Annual monitoring in accordance with the comprehensive analysis list was undertaken in April as required.

Compliance Rating: Comply – Full

U. The Permit Holder shall invite NLG to nominate a representative who shall, at the *person's own cost, be permitted to observe the quarterly and six monthly* monitoring referred to in Table C.

It is noted in the NLG meeting minutes from 28 September 2021 that "Viv Bold" has offered to witness sampling.

Compliance Rating: Comply – Full

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 Subsequently, conditional 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.

Leachate from the newer lined landfill was irrigated during the period 2004 to October 2008. From June 2009 leachate from the newer lined landfill was pumped off site to the Levin Wastewater Treatment Plant (WWTP) with some recirculation through Stage 1a.

Since January 2012 all leachate from the newer lined landfill stages has been pumped off site to the Levin WWTP. This condition came into effect on 31 May 2010 following a review pursuant to Section 128 of the Resource Management Act 1991; this is subsequent to the last occasion leachate was irrigated to the irrigation area. On this basis soil sampling is not required.

Compliance Rating: Not Applicable

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.

Leachate from the newer lined landfill areas has been piped off-site to the Levin WWTP since 2012, as such soil sampling in the irrigation area is not considered to be applicable.

Compliance Rating: Not Applicable

5. The results of monitoring under Conditions 3 and 4 of this Permit shall be reported to the Regional Council by 30 September each year for the duration of this Permit.

Monitoring results are reported on a quarterly basis. Leachate has not been irrigated since 2012 when it began to be piped to Levin WWTP and as such monitoring in accordance with Condition 4 is not applicable.

Compliance Rating: Comply – Full

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.

The above monitoring programme is undertaken by Stantec, which is an environmental engineering consultancy, on behalf of HDC. MWH Global previously undertook this work and were approved by Horizons. In 2016 MWH Global was acquired by Stantec; accordingly Horizons approval still stands for Stantec to undertake the monitoring programme.

Compliance Rating: Comply – Full

7. The Permit Holder shall inform the Neighbourhood Liaison Group of the identity of the organisation carrying out the monitoring.

As demonstrated under Condition 35(d)(iv) of Resource Consent 6009 quarterly monitoring reports are sent out to members of the NLG. Section 1 of each report clearly states that HDC has commissioned Stantec to carry out the monitoring programme. Furthermore, Phil Landmark of Stantec is often present at NLG group meetings.

Compliance Rating: Comply – Full

8. The Permit Holder shall meet the costs of the monitoring.

All costs for monitoring are paid by HDC.

Compliance Rating: Comply – Full

9. The Permit Holder shall report the results of the monitoring to the Neighbourhood Liaison Group by 30 September each year for the duration of the Permit.

As discussed under Condition 7 of this consent, quarterly monitoring reports and the annual report are forwarded to members of the NLG via the Solid Waste Newsletter as shown under Condition 35(d)(iv) of Resource Consent 6009.

Compliance Rating: Comply – Full

10. All analyses on water quality samples shall be carried out by an IANZ accredited laboratory.

Information in the annual report notes that laboratory analyses have been undertaken by Eurofins ELS in Lower Hutt. ELS is an IANZ (International Accreditation New Zealand) approved laboratory for the tests conducted.

Compliance Rating: Comply – Full

11. (a) Should any shallow aquifer groundwater 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 then Condition 11(c) applies.

Horizons engaged Pattle Delamore Partners Ltd (PDP) to assess the recent surface water and groundwater monitoring data. PDP responded via a Memorandum entitled "Review of Levin Landfill Annual Monitoring Report" dated 12 May 2022 (PDP Memo).

The PDP Memo states "The annual monitoring report and quarterly monitoring reports for July 2020 and October 2020 indicates that groundwater quality downgradient of the Levin Landfill complies with the consent groundwater quality criteria for shallow groundwater" As such no notification was required.

Compliance Rating: Comply Full

(aa) Should any surface water parameters tested for under Condition 3 of this consent, including the Tatana Drain location, exceed the Australian and New Zealand Environment and Conservation Council Water Quality Guidelines (2000) for 95 per cent protection levels for Aquatic Ecosystems the Permit Holder shall report to the Regional Council as soon as practicable on the significance of the result. Where the change can be attributed to landfill leachate the Consent Holder shall consult with the Regional Council to determine if further investigation or remedial measures are required.

The PDP memo states "Sampling data indicates that discharges from the landfill affect water quality in Hokio Stream, although the effects do not appear to exceed the relevant guideline thresholds, apart from nitrate-nitrogen which is above the ANZECC AE 95% species protection level at all sites and shows a small increase downstream", and "At the Tatana Drain monitoring site, median water quality results for all parameters met the ANZECC AE (95%) trigger values, except for ammoniacal-n, BOD, nitrate-N, and boron concentrations". These exceedance were notified to Horizons via the Quarterly Monitoring Reports.

The PDP Memo also notes that “Based on the updated data from this monitoring report (which covers data to June 2021), a slight increase is observed in ammoniacal-nitrogen, conductivity, and chloride between upstream and downstream sites. The median concentration values for conductivity did increase between HS2 and HS3 (where the Tatana property drain joins Hokio Stream), but by a very small margin and while adverse ecological effects are not expected. Tatana Drain is still experiencing toxic concentrations of ammoniacal-nitrogen and there is still no background provided as to the ecological state of Tatana Drain (fish passage from Hokio Stream, permanent flow etc.) which limits the ability to interpret the data”; and, “the pattern of rising concentrations and potential for effects in Hokio Stream should be considered as early warning signs and preparations to manage those effects should be put in place”

Previous monitoring reports requested that further investigation into these exceedances was carried out. In response to this a “Draft Plan for Actioning Horizon’s Audit Compliance Report Actions” was produced on behalf of the consent holder by Stantec and provided in August 2021 (Stantec Memo).

This plan noted that “Given that the assessments are a requirement of the resource consent conditions, that monthly monitoring of the Hokio Stream is still required until March 2022 and that, additionally, a remediation option is to be implemented for the Tatana Drain, the question that has to be asked is whether there is any merit in implementing additional monitoring of the Tatana Drain and Hokio Stream”.

The Annual Report notes a series of recommendations to improve the understanding of the impact of the landfill, some of which have been drawn from the Stantec Memo and will be implemented during the 2021-2022 assessment period and as such have not been assessed at this time.

The leachate remediation BPO has yet to be implemented and as the exceedances have not been directly attributed to the landfill at this stage as such Horizons assess this as comply – at risk.

Compliance Rating: Comply At Risk

- (b) In the event that the statistical analysis completed under Condition 3J shows a significant increase between upstream and downstream results in the *Hōkio Stream for any parameter exceeding the trigger exceeding the Trigger* values contained in Table C1 at Site HS3 (except for scBOD₅), an investigation into the risk of significant effects due to the parameter(s) exceeding the water quality targets or trigger values at the HS3 monitoring site shall be undertaken, This investigation shall be consistent with the ANZECC guidelines framework and should consider, but not be limited to, water chemistry aspects (such as pH, water hardness, dissolved versus total concentrations etc.), and biological aspects. The Permit Holder shall report to the Regional Council, within 3 months of the date the report under condition 3J was submitted to the Regional Council, on the significance of the result and, where the change can be attributed to landfill leachate then Condition 11(c) applies.

Previous monitoring reports noted that “This condition requires 24 months of data in order to undertake the statistical analysis referred to under Condition 3J. The monitoring results indicate that monthly comprehensive sampling commenced in April 2020 therefore, Horizons recommend the statistical analysis is undertaken following completion of the April 2022 sampling round”.

The above sampling falls outside of this assessment period and has not been assessed at this time.

Compliance Rating: Not Assessed

- (c) In the event that a significant effect associated with the landfill leachate is reported pursuant to Conditions 11(a), 11(b) or 11(e) then:
 - (i) The Permit Holder must appoint an independent expert to promptly review the works implemented under condition 2A in light of the findings of the monitoring and identify whether they are working as designed. If they are not working as designed the report shall specify corrective works required and a timeframe to implement them.
 - (ii) The Permit Holder shall promptly complete all recommended corrective works in accordance with the timeframes set out in the review.
 - (iii) The Permit Holder shall provide a copy of the review to the Regional Council and NLG within 5 working days of receipt.

This condition is intended to enable a review of the leachate remediation option as implemented under Condition 2A. However, the preferred leachate remediation option does not require full implementation until June 2023, as specified under Condition 2A. Therefore, this condition is currently not applicable.

Compliance Rating: Not Applicable

- (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 Hōkio Stream*. The contaminant mass load projections shall be based primarily, but not exclusively, on the monitoring data *obtained for the “B”, “C” and “X” 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 Hōkio 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 Hōkio Stream under Condition 3*.

Information provided as part of the Annual Report contains the methodology used to calculate mass load projections, calculated mass loads and analysis as required.

The PDP memo states “The methodology for the contaminant mass loading calculations appears to have carried out in general accordance with the consent conditions. However, *in our opinion the method by which ‘background’ concentrations have been considered* does not allow for short term, acute effects, which may be important at times of low flow”.

In addition to this The PDP Memo suggests “that the contaminant mass balance calculations indicate that effects from the landfill could cause effects on Hokio Stream that exceed the guideline values” Based on the findings of the PDP Memo, Horizons assess this as comply – at risk.

Compliance Rating: Comply – At Risk

- (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 significant effect associated with the landfill leachate as identified through an investigation under Condition 3, then Condition 11(c) applies.

The PDP Memo notes that “*the contaminant mass balance calculations indicate that effects* from the landfill could cause effects on Hokio Stream that exceed the guideline values. Combined, the pattern of rising concentrations and potential for effects in Hokio Stream should be considered as early warning signs and preparations to manage those effects should be put in place”.

The preferred leachate remediation option is required to be fully implemented by **June 2023**, as specified under Condition 2A.

Please ensure the preferred option for leachate remediation is in place and operational within the above timeframe to avoid enforcement action.

Compliance Rating: Comply – Not Applicable

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.

The PDP memo states “Some exceedances of the NZDWS occurred in deeper bores for iron and manganese. However, these exceedances are more likely to reflect general background groundwater conditions rather than impacts from the landfill”.

Compliance Rating: Comply – Full

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.

The Annual Report states "*there are* several of private bores within a 1.5km radius of the site. Sampling of groundwater on a private property was last undertaken in March 2014. *The results were made available to the property owner and Horizons Regional Council.*" Please ensure Horizons are notified if any future requests from bore owners accordingly.
Compliance Rating: Not Applicable

14. Any currently active and future lined landfill area shall be closed and remediated by:

The consent holder is currently undertaking a review of the future of the land fill with a view to closure, at the time of writing a decision on this has not yet been made.

- 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

Refuse density survey data presented in the Annual Report show the density achieved was 0.92 tonnes/m³ (or 920 kg/m³). This compaction rate exceeds the requirement of this condition and will minimise any post closure settlement; however, over compaction may result in future effects such as perched leachate, potentially resulting in inefficiency of gas well performance and odour issues. As the compaction exceeds the guideline value Horizons assess this as low risk non-compliance.

Compliance Rating: Low Risk Non-Compliance

- b) Grading to a final slope of less or equal to 1V:3H (1 in 3) on any face; and

Although final slopes are not yet in place, the LMP requires all temporary fill batters to be a ratio 1V:3H.

Compliance Rating: Not Applicable

- 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

Although final capping is yet to be applied on all new landfill cells, the LMP requires capping material to meet the standard set by this condition.

Compliance Rating: Not Applicable

- 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.

As discussed final capping of the existing lined landfill is yet to occur. A final determination of compliance with this condition cannot be assessed until final capping is in place.

Compliance Rating: Not Applicable

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:

Final capping of the old existing landfill was detailed in the 2010-11 Annual Report and has been previously assessed and complied under Compliance Reports. There are annual reporting requirements as per the sub-conditions below. Where appropriate, information provided in the annual report has been used to provide a compliance rating.

- 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);

This has previously been complied with.

Compliance Rating: Not Assessed

- 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;

Information provided in the annual report shows that there has been some issues with water ponding in depressions created by vehicle movements after heavy rain. The report goes on to recommend that these areas are to be remediated once the existing capping has dried out sufficiently to allow works to be undertaken. This was also an issue noted in the last compliance assessment and was remediated at the time.

Please ensure the repairs are undertaken as soon as possible and required gradient of final capping is maintained to ensure ongoing surface ponding does not occur.

Compliance Rating: Low Risk Non-Compliance

- 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;

This has previously been complied and as this condition relates specifically to the old "existing" unlined landfill it has not been reassessed at this time.

Compliance Rating: Not Assessed

- 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;

Information provided in the annual report as part of the surface emission monitoring noted areas of dead, sparse or non-existent vegetation cover in various areas of the capped landfill (usually in areas showing erosion damage). No further comment on this was provided as to how wide spread this was or if the lack of vegetation was a result or cause of the erosion. Please ensure adequate vegetation cover is re-instated and maintained at all times.

Compliance Rating: Low Risk Non Compliance

- 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

Ten monitoring points to monitor settlement were established on top of the old landfill as part of the survey which was carried out in June 2014. The locations of the monitoring points and extent of settlement over the past year has been provided in the Annual Report, which states "The most settlement has occurred at the southern end of the closed landfill, which is not surprising since this is the area where there have been truck movements bringing in clay and topsoil materials. Monitoring point IT7 has settled the most (259mm \pm 10mm) since monitoring began, with monitoring point IT10 settling 228mm over the same period. Over this past year monitoring point IT10 settled the most (53mm) with

monitoring point IT7 settling 45mm over the same period. Settlement of the old landfill is to be expected as the underlying waste degrades”.

Compliance Rating: Comply – Full

- f) The Permit Holder shall submit an annual report to the Regional Council by 30 September each year for the duration of this Permit documenting the condition of the unlined landfill and any maintenance carried out during the previous year. The annual report shall address but not be limited to those aspects listed in Conditions 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.

The Annual Report was received by Horizons on 30 September 2020. The Annual Report includes all information as required by this condition.

Compliance Rating: Comply – Full

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.

Final remediation has not yet occurred therefore this condition cannot currently be assessed.

Compliance Rating: Not Applicable

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.

Conditions 17 to 24 (inclusive): all leachate from the lined area of the Levin Landfill is piped directly to the Levin WWTP. Further, there is no irrigation of leachate or leachate sludge to land at the Levin Landfill.

Compliance Rating: Not Applicable

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.*]

Although the landfill is currently not accepting any refuse, the long term future of the landfill has not been decided to date. Currently it is understood that all areas of the landfill are permanently capped with the exception of the western side which is under temporary capping.

Please provide confirmation that the current capping has been placed meets the requirements of condition 14(a) to (d) to Horizons by **1 August 2022**.

Compliance Rating: Comply – Full

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.

This plan was previously completed by MWH in 2010 and titled Levin Landfill Leachate Management Plan. As leachate is no longer irrigated over the landfill, it is considered that this condition is not applicable to this assessment.

Compliance Rating: Not Applicable

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.

There is no irrigation on the Levin Landfill site. All Leachate is piped to the Levin WWTP.

Compliance Rating: Not Applicable

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.

Information provided in the Annual Report states that “The current landfill is inspected weekly, and observations recorded on the Weekly Site Walkover Sheets. A consistent report has been that potholes need repairing in the unsealed access road and that there are cats and seagulls on site. A leachate breakout was recorded on 18 December 2020 at the base of the landfill near the flare. There were no other signs of ground settlement and other adverse environmental effects detected during the 2020-2021 reporting period.

Compliance Rating: Comply – Full

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.

Copies of the “Site Walkover Sheets” were provided to Horizons on request. These sheets noted the identification of the leachate breakout on 18 December 2020, as noted above. No specific information on remediation of this leachate breakout was requested by Horizons. Please provide information on the remediation of this break out to Horizons by **1 August 2022**.

Compliance Rating: Not Assessed

Review

30. The Regional Council may initiate a publicly notified review of Conditions 3, 4, 11 (a) (e), 12, 13, 14, 24, 27, 28 and 29 of this Permit during the month of October in 2024, 2029 and 2034. 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.

A review of the above condition has not been initiated by Horizons during this assessment period.

Compliance Rating: Not Applicable

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 Hōkio 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.

A review of the above condition has not been initiated by Horizons during this assessment period.

Compliance Rating: Not Applicable

Overall Compliance Rating for Resource Consent ATH-2002003983.02 (6010): Low Risk Non-Compliance

GENERAL CONDITIONS APPLICABLE TO ATH-2002003984.02 (6011) – DISCHARGE OF LANDFILL GAS, ODOUR, AND DUST TO AIR

Consent is granted to the Horowhenua District Council to **discharge landfill gas, odour and dust to air at the Levin landfill, Hōkio 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.*]

HDC has paid all fees to-date in accordance with this condition.

Compliance Rating: Not Applicable

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.

There have been no complaints to Horizons related to dust from the site. The access up to the Levin Landfill site office is sealed and the main haul roads are metaled.

Compliance Rating: Comply – Full

3. There shall be no objectionable or offensive odour or dust beyond the boundary of the site.

Advice Note: Odour investigations for the purpose of determining compliance with this condition shall be carried out in accordance with good practice measures outlined in the Ministry for the Environment Good Practice Guideline for Assessment and Management of Odour (MfE, 2016)

During this reporting period Horizons received four complaints in relation to odour from the Levin Landfill. A breakdown of these incidents is summarised in Table 1 below.

Table 1: Complaints received – 1 July 2020 to 30 June 2021

Incident #	Date	Communication Method	Odour Assessment	Comments
26172	3/08/2020	Horizons Pollution Hotline	No	No odour detected.
26673	18/12/2020	Horizons Pollution Hotline	No	Not Attended
27152	23/03/2021	Horizons Pollution Hotline	No	No odour detected
27147	25/03/2021	e-mail	No	Called complainant following morning and odour gone.

Of the complaints received:

- Two complaints were followed up with a site assessment. Odour was not detected during these assessments and as no odour was detected a FIDOL assessment was not undertaken on these occasions.
- One complaint was not attended due to officer unavailability
- The remaining complaint was not attended as the complainant advised on the phone the odour had since gone.

As there have been complaints received in relation to odour it is considered that the landfill is at risk of causing offensive odours beyond the site boundary, therefore Horizons has rated this condition as comply at risk.

Compliance Rating: Comply – At Risk

4. If an appropriately experienced officer of the Manawatu-Wanganui Regional Council or a suitably qualified independent expert considers that an objectionable odour beyond the boundary has occurred, having regard to:
- (i) a consideration of the FIDOL factors; and/or
 - (ii) receipt of complaints from neighbours or the public having considered (i); and/or
 - (iii) relevant written advice or a report from an Environmental Health Officer of a territorial authority, then

And the permit holder receives a request from the Manawatu-Wanganui Regional Council to provide them with a written report, then the report shall specify;

- (a) the activities that were occurring on the site at the time;
- (b) the cause or likely cause of the event and any factors that influenced its severity;
- (c) the nature and timing of any measures implemented by the permit holder to avoid, remedy or mitigate any adverse effects; and
- (d) the steps to be taken in future to prevent re-occurrences of similar events should this be necessary.

The permit holder shall provide its report for items (a), (b) and (c) within five days and for item (d) within 20 days of request. When notification of an alleged objectionable odour is delayed such that investigation by the permit holder is

compromised, the report should as far as practicable include the information required by (a) – (d).

Further to Condition 3 above, none of the complaints received during the reporting period resulted in objectionable odour being verified. Furthermore, Horizons have not received a statement from a suitably qualified independent expert that they consider an objectionable odour beyond the boundary has occurred.

Compliance Rating: Not Applicable

5. The Permit Holder will also ensure that:
 - a. Groundwater monitoring wells shall be sampled for landfill gas when groundwater samples are taken from the wells. As a minimum, sampling shall be undertaken for methane, carbon dioxide and oxygen.

Information provided in the Annual Report notes that “Landfill gas monitoring commenced in January 2010. Low concentrations of methane (CH₄) were detected during the October 2020, April 2021, and June/July 2021 monitoring rounds. High concentrations of methane were detected in the January 2021 monitoring round and hydrogen sulphide was detected in the June/July 20201 monitoring round”. Appendix I of the Annual Report provides full results of gas monitoring results which shows the required monitoring is being undertaken.

Compliance Rating: Comply – Full

- b. Any building constructed on the landfill site is adequately ventilated.

The only buildings on the Levin Landfill site are the main office and storage shed area. This building has roller doors and windows and doors throughout which can be opened to ventilate the building.

Compliance Rating: Comply – Full

- c. The Permit Holder must place daily cover over the entire operational fill area to a depth of at least 150mm by the end of each operating day. Daily cover material may comprise a mixture of sand, soil or mulched woody material or alternative cover options specified in the WasteMINZ Technical guidelines for the Disposal to Land (WasteMINZ, August 2018).

Little information on daily cover has been provided in the Annual Report apart from “This past year no imported wood/bark was used for daily cover”. The Landfill Management Plan states primary cover of waste shall be provided daily over the entire operational fill area to a depth of at least 150mm by the end of each operating day.

Weekly walkover inspection records provided indicate that the daily cover typically comprises a mixture of sand, clay and mulch. It is expected that full detail of daily cover activities is provided in future Annual Reports.

Compliance Rating: Comply Full

- d. The Permit Holder must ensure that intermediate cover is placed as soon as practicable over daily cover for any area that will not receive additional waste or final cover for more than three months. The Permit Holder must apply intermediate cover no later than two weeks after the last application of daily cover. The Permit Holder will strive, at all times, to minimise the active areas of the landfill for the purpose of reducing odour generation.

The depth of intermediate cover, including daily cover, over the waste shall be a minimum of 300mm and must comprise of uncontaminated soil, and/or a mixture of sand and mulched woody material.

The Permit Holder shall apply a temporary cap on top of the intermediate cover within three months of an area last receiving fill. The temporary cap shall comprise of a layer of compacted cohesive soil with a thickness of at least 200 mm for a combined thickness of 500 mm including the daily and intermediate cover. Alternatively, the temporary cap could comprise of a compacted layer of clay with a thickness of at least 50 mm that achieves the methane surface concentration requirements of condition 4f.

Advice Note: This condition is additional to Condition 14c of Permit 6010, which addresses the final landfill cap (only). Some remediation of the temporary cap may be required to meet the requirements of Condition 14c.

No information on areas that are under Intermediate Cover has been provided in the Annual Report. The Landfill Management Plan states intermediate cover is to be placed in accordance with the above. It is expected that full detail of cover activities is provided in future Annual Reports. Please provide an update on the current status of capping at the landfill to Horizons by **1 August 2022**.

Compliance Rating: Not Assessed

- e. The Permit Holder must carry out monthly methane surface monitoring for all areas of the landfill with a temporary or permanent cap and the bio-filter bed. The monitoring of surface emissions for methane shall be undertaken utilizing emission testing methods that have been given prior written certification as to their appropriateness by the Manawatu-Wanganui Regional Council's Regulatory Manager. The monitoring of surface emissions shall not be undertaken during or immediately after heavy rainfall or during strong wind speed conditions, and the meteorological conditions at the time of the monitoring shall be provided in the monitoring report.

Advice Note: Favourable meteorological conditions for methane surface monitoring include those where weather and ground conditions are dry with less than 0.5 mm of rain having fallen for at least two days, and instantaneous wind speed should be less than 25 km per hour (ideally 5 to 10 km per hour)

HDC has engaged Envirowaste to do this testing which started in April 2021, as monthly testing has not been undertaken for the entire assessment period it is considered that this condition has not been complied with for this assessment period. On the four occasions for which surface emissions have been tested, locations have been identified on the landfill surface where the concentrations of methane have exceeded the allowable levels. On all occasions the surface has been remediated using either additional clay capping material or by sealing surface fissures with bentonite granules mixed with water. Re-testing has shown the remediation to be successful on all occasions.

As this condition has previously been rated as Significantly Non-Complaint and the consent holder has now implemented this monitoring (since April 2021) a Low Risk Non-Compliance rating has been given on this occasion.

Compliance Rating: Low Risk Non-Compliance

- f. Surface concentrations of methane, as determined by monitoring carried out by condition 4(e) shall not exceed the following levels:
 - i. 100 parts per million (ppm) for permanently capped areas:
 - ii. 200 ppm for temporary capped areas: and
 - iii. 5,000 ppm for onsite buildings and structures.

An exceedance of the above levels requires remedial action to be undertaken within 24 hours and retesting within 24 hours of remediation being completed. If the second round of testing results in a continued exceedance at the same location then an action plan shall be developed and implemented to reduce methane concentrations below the specified levels. The Permit Holder shall provide details of the action plan to the Manawatu-Wanganui Regional Council within 48 hours of the retest.

Monitoring data provided in table 8.2 of the Annual Report for March, April, May and June 2021 shows that the Methane monitoring exceeded 200ppm on all occasions but retested under 200ppm after remedial actions had been carried out.

Compliance Rating: Low Risk Non-Compliance

- g. The Permit Holder shall include records of surface emission monitoring for methane must be included in the Annual Report required by Condition 39 of Discharge Permit 6009 and must also be provided to Manawatu-Wanganui Regional Council on request.

Surface emission monitoring reports for the months of March, April, May and June in 2021 were provided as an appendix to the Annual Report.

Compliance Rating: Comply Full

- h. Within six months of the commencement date of the decision of the 2015 review of conditions, the leachate collection chamber must be vented to a bio-filter. The bio-filter must be designed by a suitably qualified and experienced person.

The design of the biofilter has not been reviewed as part of this assessment.

Compliance Rating: Not Applicable

- i. The Permit Holder must appoint an appropriately qualified person to undertake a comprehensive assessment of the bio-filter performance on an annual basis. The assessment shall include, but not be limited to, an evaluation of the media size distribution and composition and effectiveness in removing contaminants, and a review of any measurements or records relating to the parameters at (j) below.

Previous assessment for this condition has noted that "Horizons have no records of this assessment having been completed for the reporting period nor knowledge that somebody has been appointed", and this condition was rated as a Moderate Non-Compliance. It is understood that the use of the biofilter is the subject of an application to change conditions of consent currently lodged with Horizons; however, it is expected that all conditions of consent are fully complied with until such time as a variation is granted. As such this condition continues to be rated as a Moderate Non-Compliance.

Compliance Rating: Moderate Non-Compliance

- j. The Permit Holder shall maintain the bio-filter, in good working order, and shall measure and record the following parameters:
- Daily visual inspection of the state of the bio-filter bed, particularly for signs of any short-circuiting, clogging of the bed, compaction and weed growth.
 - Daily inspection of the inlet gas fan and ductwork and any maintenance;
 - Continuous display of differential pressure for the bio-filter fan discharge;
 - Weekly recording of pressure across the bio-filter bed;
 - Weekly monitoring and recording of the bio-filter media moisture content
 - Monthly monitoring and recording of the pH of the bio-filter media;
 - Quarterly raking and loosening of the bio-filter media, or as otherwise required, to reduce the potential for short-circuiting, clogging of the bed, compaction and weed growth.

The Annual Report provides a summary of Bio Filter inspections and Maintenance as follows:

Requirement	Comments	Compliance
Daily visual inspection	Not fully consistent. HDC staff carry out visual checks when on site and the Contractor does a visual check weekly.	No
Continuous display of fan discharge differential pressure	Differential pressure and moisture content available on SCADA from June 2020.	Yes
Weekly monitoring and recording of the bio-filter bed moisture content	Done through SCADA telemetry	Yes
Weekly recording of pressure across the bio-filter bed	Done through SCADA telemetry	Yes
Weekly recording of the pH of the bio-filter media	Not implemented	No
Quarterly raking and loosening of bio-filter media	Commenced in August 2020	Yes

As can be seen from this table the daily visual inspections have been inconsistent, pH monitoring has not been undertaken, and the raking and loosening of the bio filter media only commenced in August 2020. As the required monitoring and maintenance of the biofilter has not been undertaken for the entire assessment period, this condition has been rated as a Moderate Non-Compliance

Compliance Rating: Moderate Non-Compliance

- k. The Permit Holder must ensure that the bio-filter and bed complies with the following limits at all times
- Pressure drop across the bio-filter air distribution system shall be less than 150mm water gauge;
 - Bio-filter media moisture content shall be between 40-60% moisture content;
 - The air flow rate shall not exceed 35 m³/hr @25°C, 1 per cubic metres of bio-filter media;
 - The pH of the filter material shall be maintained at or above pH 4 in the lower 1/3rd layer of the bed and at or above pH 5 in the upper 2/3rds layer of the bed.
 - An even distribution of gas flow through the filter bed; and
 - There shall be no short circuits of untreated air through and filter bed.

No information in relation to biofilter compliance with the above was provided in the annual report. This information was requested by Horizons as part of the previous compliance report and was provided at a later date.

Please provide a summary of these sampling results **1 August 2022** and in future this information should form part of the annual report. It is noted that the pH monitoring has not been undertaken to ensure compliance with this condition and as such a Moderate Non-Compliance rating has been given on this occasion.

Compliance Rating: Moderate Non-Compliance

- I. As soon as practicable and no later than 12 months of the commencement date of the 2015 review of conditions, the Permit Holder shall install a landfill gas collection system and flare on the site. The gas collection and flare shall be maintained and used at all times.

Advice Note: HDC holds Discharge Permit 106798 for discharges from the flare.

A candlestick flare was installed and trialled in 2014. This was upgraded to a new GF500 landfill gas flare (manufactured and installed by Windsor Engineering) in 2017. The flare is maintained and used at all times with the exception of outages as recorded in the log provided with the Levin Landfill Gas Flare Annual Report.

Compliance Rating: Comply – Full

- m. Within 2 months of the commencement date of the 2015 review of conditions, the Permit Holder shall prepare an Odour Management Plan (OMP) and provide it to the Regional Council's Regulatory Manager for technical certification. The OMP must include;
 - i. Material specifications and procedures for the application of daily and intermediate cover and temporary and final capping;
 - ii. Procedures for the documentation and handling of special and/or malodorous wastes (eg sewage sludge, animal carcasses);
 - iii. Methodology for monthly field odour monitoring;
 - iv. Methodology for monthly surface monitoring for methane;
 - v. Methodology for biofilter monitoring;
 - vi. Odour control practices relating to the leachate pond;
 - vii. Odour control practices for the working face of the landfill;
 - viii. Locations of odour control/treatment equipment (e.g. biofilter and flare);
 - ix. The odour complaints investigation and recording procedure;
 - x. The phasing of the Landfill construction and operation (filling), including the design and collection efficiency of the existing and proposed gas collection system (GCS). This shall also include a description of the thickness and type of cover and capping material used at different phases of the landfill development;
 - xi. The operational procedures regarding the use of the bio-filter and the flare and GCS, including maintenance and breakdown procedures and methods to be followed to prevent a significant discharge of odour;
 - xii. The resource consent conditions relevant to discharges to air at the landfill;
 - xiii. Staff training requirements to ensure compliance with the resource consent conditions;
 - xiv. Timing of audits and inspections and reporting to Council.

The commencement date of the 2015 review is the date of the Environment Court Order, that being 19 December 2019. The OMP was prepared by Stantec (on behalf of HDC) and submitted to Horizons on 3 February 2020; therefore, within the 2 month timeframe. This plan has been reviewed by independent experts, on behalf of Horizons, and the recommendations have been provided to HDC and Stantec for consideration and finalisation of the OMP.

Compliance Rating: Comply – Full

- n. The Permit Holder must consult the NLG during the development of the Odour Management Plan and at any time the OMP is reviewed. The views of the NLG must be incorporated where appropriate and practicable. Where the NLG comments and views are not incorporated, the outstanding issues, and reasons why they have not been incorporated, must be provided to Manawatu-Wanganui Regional Council's Regulatory Manager at the same time the Odour Management Plan is provided.

An overview of the OMP was presented to the NLG during the April 2021 meeting and the draft OMP was sent to the members of the NLG seeking feedback two follow up attempts had been made, there had been no response from the NLG.

Horizons have advised HDC as part of the last compliance report that the OMP will not be certified until the NLG have been consulted, formal evidence consultation with the NLG has not been provided to date. Therefore this condition is rated Moderate Non Compliance.
Compliance Rating: Moderate Non-Compliance

- o. Subject to the conditions of consent, the Permit Holder shall carry out its operations in general accordance with the OMP;

Due to the failure to undertake all monitoring in accordance with Condition 5, HDC has not complied with this condition.

Compliance Rating: Moderate Non-Compliance

- p. The Permit Consent Holder shall collect meteorological data from an on-site weather station. The data recorded shall consist of wind direction, wind speed, air temperature, barometric pressure, relative humidity and rainfall. The meteorological monitoring shall be:
 - i. Collected in general accordance with the Good Practice Guide for Air Quality Monitoring and Data Management, Ministry for the Environment, 2009, or subsequent updates;
 - ii. Continuous for the duration of the consent comprising, 1 min data, collected and averaged to 10-min and 1-hour time periods;
 - iii. At a point that is representative of local wind conditions across the site;
 - iv. The wind speed and direction instrumentation shall be able to operate reliably down to a maximum wind speed threshold of 0.5 m/s.

Information in the Annual Report notes that “Prior to March 2021 weather data was taken from the old weather station at 645 Hokio Beach Road. The data was recorded at this station every 15 minutes, rather than at 1-minute intervals. The new weather station was initially ordered in mid-2020, but delivery was delayed until 2021.

From April 2021 onwards weather data has been taken from the new station located at the landfill office. Issues occurred with some of the readings in June 2021 (particularly temperature and humidity) due to water ingress causing corrosion of the plug-in sensor terminals. The station has since been repaired and was reinstalled in mid-August”, and “The information collected meets the consent requirements except that monitoring was to have been at 1-minute intervals and was to be averaged to 10-minute time periods. The new weather station complies with this though the old weather station did not”. As the monitoring did not meet the requirements of this condition for the entire assessment period a low risk non-compliance rating has been given on this occasion.

Compliance Rating: Low Risk Non-Compliance

- q. The Permit Holder shall provide the Manawatu-Wanganui Regional Council with information collected from the weather station referred to in condition 5p. The data shall be in a suitable data file format that allows the Manawatu-Wanganui Regional Council to upload it on a data management system. The data shall be provided on a monthly basis, and as soon as possible upon request.

No information from collected from the weather station has been provided to Horizons for this assessment period, since September 2021 monthly data has been provided (although not consistently). Therefore as the data was not being provided for the entire period Horizons have rated this condition as a Low Risk Non Compliance.

Compliance Rating: Low Risk Non-Compliance

Overall Compliance Rating for Condition 5 – Moderate Non Compliance

6. 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.

There have been no reports or complaints made to Horizons relating to fires at the Levin Landfill. Section 4.8 of the LMP states the lighting of fires is not permitted on site.

Compliance Rating: Comply – Full

7. The Permit Holder shall take all practicable steps to avoid, remedy or mitigate significant adverse effects of the discharge of landfill gases to air.

As noted above HDC has failed to undertake a number of monitoring requirements in accordance with the OMP, due to this Horizons considers HDC has failed to appropriately take all practicable steps to avoid, remedy or mitigate significant adverse effects of the discharge of landfill gases to air. However, as there has been no verified significant adverse effect resulting from any discharge this condition has be rated as comply at risk on this occasion.

Compliance Rating: Comply At Risk

Monitoring and Reporting

8. 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. The activities that were occurring on the site at the time.

In response to a complaint and upon a request by the Regional Council, the Permit Holder shall keep a record of the following information in its complaint record:

- f. The cause or likely cause of the event and any factors that influenced its severity;
- g. Any action taken in response to the complaint including the nature and timing of any measures implemented by the Permit Holder to avoid, remedy or mitigate any adverse effects; and
- h. The steps to be taken in future to prevent re-occurrences of similar events should this be necessary.

Complaint records shall be made available within 5 days of a request by the Regional Council.

The complaint register was provided following a request form Horizons (during the preparation of this report). The register is relatively detailed however some information as required above was not recorded. This was due to all complaints being notified to the consent holder by Horizons after being received by the pollution hotline. As such the complainants' details were not released to the consent holder and other details were not able to be recorded due to delay in notification.

Compliance Rating: Comply Full

- 8A The Permit Holder shall nominate a liaison person to manage any air quality complaint received. The name and contact details, which will include a landline telephone number, a cell phone number, and email address of the liaison person, shall be provided to the Manawatu-Wanganui Regional Councils Regulatory Manager. The Permit Holder shall ensure a liaison person is available to respond to odour or dust complaints in a reasonable manner as per condition 8B below.

The contact details of the liaison person has previously been provided in accordance with the above. Please ensure this contact is kept up to date.

Compliance Rating: Comply – Full

- 8B The Permit Holder shall ensure any complaint received from a member of the general public regarding odour or dust originating from the landfill site is investigated as soon as practicable and within 24 hours of the complaint being received, or at a time mutually agreeable with the party making the complaint.

No public complaints were received directly to the consent holder during this assessment period. Please ensure any future complaints are responded to within 24 hours of receipt as required.

Compliance Rating: Not Applicable

- 8C The Permit Holder shall notify a Manawatu-Wanganui Regional Council Consents Monitoring Officer and the Mid-Central District Health Board's Medical Officer of Health as soon as practicable after becoming aware of any offensive or objectionable odour emanating beyond the boundaries of the landfill site. An explanation as to the cause of the incident, details of any remedial and follow-up actions taken and the wind speed and wind direction measured at the landfill at the time of the incident shall also be provided to the Regional Council Consents Monitoring Officer.

No complaints of objectionable or offensive odour were received by the consent holder during the assessment.

Compliance Rating: Not Applicable

- 8D The Permit Holder must undertake monthly field investigations of ambient odour at locations beyond the site boundary that are downwind of the landfill and located between the landfill and residential houses, until such time as discharges of refuse to the landfill ceases. Thereafter the frequency of investigations shall be determined in consultation with the Manawatu-Wanganui Regional Council. The monitoring shall be undertaken in accordance with good practice as specified in the Ministry for the Environment Good Practice Guide for Assessing and Managing Odour (MfE, 2016).

Information in the annual report states that "Odour monitoring at the landfill boundary has been implemented in accordance with the methodology described in the Odour Management Plan. Twenty-one odour inspections were undertaken during the reporting period with no further action being considered necessary". Appendix H of the annual report provided a tabulated summary of odour assessments undertaken during this assessment period.

The document entitled "Compliance Report Action Responses", provided in relation to the 2020-2021 Compliance Assessment, notes that "The proposed sites for investigation in the odour management plan are located at the boundary of the landfill site rather than beyond the boundary" and "It should be noted that for sites A-D the odour assessment are conducted beyond the landfill site boundary, as the adjacent properties are owned by HDC".

Compliance Rating: Comply - Full

- 8E The Permit Holder must carry out a weekly walkover site inspection of all the landfill surfaces, including the area around the bio-filter and leachate pond. The purpose of the walkover site inspection is to check for odour, cracks in the landfill surface and integrity of gas collection or leachate pipework.

Weekly walkover inspections are undertaken as required and copies of the "Levin Landfill – Site Walkover Sheets" for the assessment period were provided on request. These include those items listed above.

The document entitled "Compliance Report Action Responses", provided in relation to the 2020-2021 Compliance Assessment, notes that "Weekly walkover have been carried out to cover landfill surfaces, around the biofilter odour inspections. As for gas pipework, visual inspection cannot detect any small holes/defects in pipe. If there is any defects in gas pipework, flare shuts down automatically due to high oxygen level. We then undertake a through (sic) inspection of gas pipework. As for leachate pipework, there is only a short *section of pipework next to the leachate pond and which is inspected weekly*".

Compliance Rating: Comply Full

- 8F The Permit Holder shall maintain a log of all other inspections, investigations and actions taken in accordance with all monitoring and odour inspection conditions of this consent. The inspection and investigation log shall be made available to the Manawatu-Wanganui Regional Council on request and submitted in a summary form in the Annual Report.

The inspection log was not requested or provided as part of the annual report; however, Appendix H of the annual report provided a tabulated summary of odour assessments undertaken during this assessment period.

Compliance Rating: Comply Full

9. The Regional Council may initiate a publicly notified review of Conditions 4 and 7 of this permit during the month of October in 2024, 2029 and 2034. The reviews shall be for the purpose of:
- a. Assessing the effectiveness of Conditions 4 and 7 of this consent in avoiding, remedying or mitigating adverse effects of discharges to air from the Levin Landfill.
 - b. The review of conditions shall allow for changes and amendments to Conditions 4 and 7 of this consent to avoid, remedy or mitigate adverse effects of discharges to air from the Levin Landfill.

A review of the conditions of consent has not been initiated during this assessment and cannot be initiated until October 2024.

Compliance Rating: Not Applicable

Overall Compliance Rating for Resource Consent ATH-2002003984.02 (6011): Moderate Non-Compliance

GENERAL CONDITIONS APPLICABLE TO ATH-2002003985.01 (6012) – DIVERSION OF STORMWATER

Consent is granted to the Horowhenua District Council to divert stormwater from around *the Levin Landfill, Hōkio 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 690A 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.*]

HDC has paid all fees to date in accordance with this condition.

Compliance Rating: Not Applicable

2. Stormwater run-off contaminated by leachate to an extent that it may cause adverse environmental effects shall be regarded as leachate.

The operational fill area was not inspected as part of this assessment. The LMP states all stormwater runoff from the operational cells is retained within the lined landfill footprint and treated as leachate.

Compliance Rating: Not Assessed

3. Stormwater falling on the operational cells of any lined landfill area shall be regarded as leachate.

Previous compliance assessments note that, bunds and diversion drains have been constructed on the side slopes to retain stormwater that falls on the operational cells as required. No further information was provided in the annual report

Compliance Rating: Not Assessed

4. The Permit Holder shall carry out such stormwater or sediment control measures as are necessary to ensure that sediment is not carried and deposited beyond the boundaries of the site.

Information in the annual report states that “stormwater is discharged to a central inter-dune depression located to the west of the access road leading to the lined landfill area”. There is no further information on stormwater sediment control in the annual report. The stormwater pond is inspected as part of the weekly site walkovers.

Compliance Rating: Comply – Full

5. The Permit Holder shall ensure that:
 - a) stormwater drains within the site are maintained to ensure that the flow of stormwater around the landfill is unrestricted and the potential for stormwater contamination is reduced; and
 - b) stormwater diversion systems, including all drains and ponds, are kept clear of refuse; and
 - c) any sediment ponds are regularly cleaned to ensure effective settling out of suspended solids.

The LMP states stormwater drains shall be inspected monthly to ensure there is no refuse collecting in the drains. If so, they must be cleaned out immediately. Records of weekly walkovers show stormwater drains are inspected during the weekly site walkovers.

Compliance Rating: Comply Full

Overall Compliance Rating for Resource Consent ATH-2002003985.01 (6012): Comply – Full

GENERAL CONDITIONS APPLICABLE TO ATH-200200368.02 (7289) – DISCHARGE OF LIQUID WASTE ONTO AND INTO LAND

Consent is granted to the Horowhenua District Council to **discharge liquid waste onto and into land at the Levin landfill, Hōkio 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.*]

HDC has paid all fees to date in accordance with this condition

Compliance Rating: Not Applicable

2. Liquid wastes shall only be placed at the Levin Landfill as a contingency to normal disposal.

The LMP requires that any liquid waste, even that meeting the definition of Condition 3, must follow the application process for special waste. Information provided in the Annual Report under section 17.3 indicates that no liquid waste was disposed of during the reporting period.

Compliance Rating: Comply – Full

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.

There has been no disposal of liquid waste during this assessment period therefore this condition is not applicable.

Compliance Rating: Not Applicable

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.

The LMP defines liquid waste as per this condition.

Compliance Rating: Not Applicable

5. *The Permit Holder shall notify the Regional Council's Regulatory 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.

Conditions 5 to 16: - There has been no disposal of liquid waste to the Levin Landfill during this assessment period.

Compliance Rating: Not Applicable

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.

As stated above the LMP requires any liquid waste being disposed of at the Levin Landfill must go through the hazardous waste application process. HDC have advised there has been no disposal of liquid waste to the Levin Landfill during this assessment period. Copies of the hazardous waste logs and special waste sheets have been provided as part of the Annual Report to verify compliance with this condition.

Compliance Rating: Not Applicable

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.

This condition permits the disposal of site-generated sludges that contain free liquids from cess-pits, leachate ponds or other site activities. The Annual Report notes the disposal of biosolids and sludge along with quantities in tonnes; however, this does not identify what fraction of this material was generated on site.

Compliance Rating: Not Assessed

19. The Regional Council may initiate a publicly notified review of Conditions 5, 9, 12 and 17 of this permit during the month of October in 2024, 2029 and 2034. 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.

Horizons has not initiated a review during this assessment period. The next opportunity for review of conditions of consent is October 2024.

Compliance Rating: Not Applicable

Overall Compliance Rating for Resource Consent ATH-2002003680.02 (7289): Comply – Full

GENERAL CONDITIONS APPLICABLE TO ATH-2002009801.02 (102259) – DISCHARGE OF STORMWATER TO LAND

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, Hōkio 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.

This consent is currently active.

Compliance Rating: Comply – Full

2. Pursuant to section 125(1) of the Resource Management Act 1991, this Permit shall not lapse within its duration of 35 years.

Compliance Rating: Not Applicable

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.

The Annual Report states stormwater is discharged to a central inter-dune depression located to the west of the access road leading to the lined landfill area. From here it soaks to groundwater. When groundwater levels are high in winter, water tends to pond in the inter-dune depression.

Compliance Rating: Comply – Full

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.

Design and construction of structures relating to this discharge permit were not assessed as part of this report. Weekly walkover inspections make note of whether the structures are free of debris and the outlets clear.

Compliance Rating: Not Assessed

5. The Permit Holder shall inspect the stormwater system once a day when the site is in use to ensure the speedy recovery of any litter or refuse and shall remove any litter as soon as practicable.

No information on daily inspections of the stormwater system has been provided in the annual report. The walkover reports provided note inspection of the stormwater system; however, these do not meet the required "daily inspections" as set out in the condition above.

The LMP states daily inspection of the site and removal of all litter which is liable to be a nuisance and all litter in drains on-site shall be removed immediately.

Please ensure the stormwater system is inspected on a daily basis and these inspections are recorded and noted in future annual reports.

Compliance Rating: Low Risk Non-Compliance

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.

Weekly walkover inspections include observations of the stormwater ponds.

Compliance Rating: Comply – Full

7. [Deleted]

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.

No information on stormwater runoff or complaints of runoff has been provided to Horizons. Please ensure there is no stormwater runoff from the landfill area that results in discharge beyond the property boundary

Compliance Rating: Not Assessed

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 the centralised soakage area as shown on the latest version of the Stormwater Plan.

The Annual Report states "stormwater is discharged to a central inter-dune depression located to the west of the access road leading to the lined landfill area. From here it soaks to groundwater. When groundwater levels are high in winter, water tends to pond in the inter-dune depression".

Compliance Rating: Not Assessed

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.

The operational area has not been inspected on this occasion.

Compliance Rating: Not Assessed

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.

The LMP states stormwater falling on the operational area of the landfill will be regarded as being leachate. In the early parts of a stage when there is a large lined area without any waste, runoff of clean stormwater from part of the lined area should be diverted off the lined area to ground soakage, as far as is practicable.

Compliance Rating: Comply – Full

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.

All stormwater landing on an operational cell is treated as leachate and is piped to the Levin WWTP.

Compliance Rating: Comply- Full

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.*

This condition has previously been complied with and is considered to be no longer applicable.

Compliance Rating: Not Applicable

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

Information provided in the annual report notes that "*Based on the current understanding of groundwater flow directions, bores D3r and F3 are hydraulically up-gradient of the stormwater soakage area, and bores E1D, E1S, D4 and D2 are hydraulically down-gradient*". Water sampling is carried out on a quarterly basis. The required parameters are analysed and the results provided in the quarterly reports.

Compliance Rating: Comply – Full

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.

Sampling of the bores, mentioned under Condition 14 above, is undertaken quarterly concurrent with the monitoring program of other the other landfill consents. The results are reported with the quarterly reports prepared by Stantec.

Compliance Rating: Comply – Full

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.

Results pursuant to condition 14 are forwarded on a quarterly basis to Horizons with the quarterly reports. This includes the raw lab results.

Compliance Rating: Comply – Full

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.

All parameters monitored under condition 14 are analysed by Eurofins ELS Ltd laboratory which holds an IANZ accreditation for the parameters required.

Compliance Rating: Comply – Full

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.

Information provided in the annual report states "Groundwater bores E1D, E1S, D4 and D2 are currently understood to be located hydraulically down-gradient of the stormwater soakage area on the site, and groundwater quality in these bores was compared with the ANZECC 2000 LDW trigger values. There were no exceedances of the LDW trigger values during the 2020-2021 monitoring period".

Compliance Rating: Comply – Full

19. The Regional Council may initiate a publicly notified review of all conditions of this Permit during the month of October in 2024, 2029 and 2034. 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.

No review has been initiated by Horizons during this assessment period. The next opportunity for review is October 2024.

Compliance Rating: Not Applicable

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.*]

HDC has paid all fees to date in accordance with this condition
Compliance Rating: Comply – Full

Overall Compliance Rating for Resource Consent ATH-2002009801.02 (102259): Low Risk Non-Compliance

GENERAL CONDITIONS APPLICABLE TO ATH-2014015044.00 (106798) – DISCHARGE TO AIR (GAS FLARE)

Discharge Contaminants from Landfill Gas Collection System and Semi Enclosed Gas Flare Burner to Air at Hokio Beach Road, Levin

Descriptive Specification

1. The consent holder shall undertake the activity in general accordance with the consent application including all accompanying plans and documents first lodged with Manawatu-Whanganui Regional Council on 19 December 2014, and the original application lodged 30 August 2013 and further information received:
2. Emails received on 17 April 2015, 24 April 2015, 23 June 2015 and 30 June, confirming timeframes, changes requested to monitoring conditions and status of existing flare.

Where there may be inconsistencies between information provided by the applicant and conditions of the resource consent, the conditions of the resource consent apply.

Advice Note: Any change from the location, design concepts and parameters, implementation and / or operation may require anew resource consent or a change of consent conditions pursuant to section 127 of the Resource Management Act 1991.

[Condition 1 amended as per variation APP-2013016220.01 dated 29 July 2015]

As noted in previous compliance assessments, HDC failed to meet the timeframe specified to install the replacement flare. The Operation and Maintenance Manual prepared by Windsor Engineering Group Ltd indicates that the gas flare was commissioned 15-17 May 2017. The flare was operational as of 27 June 2017 as per an email sent that day by HDC to Horizons and various members of the NLG.

As this condition has previously been non-complied and the flare is now in operation it is considered that the activity is now being undertaken in general accordance with the documents detailed above.

Compliance Rating: Comply Full

3. The discharges authorised by this consent shall be restricted to the discharge of contaminants including Methane, CO₂, PM₁₀, NO₂, SO₂ and odour from the operation of a gas flare at the Levin Landfill on land legally described as Lot 3 DP 40743 at approximate map reference NZTopo50 BN33:871-025.

Landfill gas from the Levin landfill is discharged via a flare in accordance with the above.

Compliance Rating: Comply – Full

Pre-Development Assurance

4. The landfill gas flare shall be designed, operated and monitored in accordance with the requirements of the United States EPA Code of Federal Regulations 40 CFR Part 60, Subpart A – General Provisions, Section 60.18 (1997) and shall have the following minimum specifications:
 - (i) flame arrestor and back flow prevention devices, or similar equivalent system, approved in writing by the Manawatu-*Wanganui Regional Council's* Regulatory Manager acting in a technical certification capacity, to prevent flashback;
 - (ii) a continuous automatic ignition system; and
 - (iii) a temperature detection system to detect circumstances when temperature drops below 750°C.

The Levin Landfill Flare Operations and Management Plan (Flare OMP) notes that the “The Levin Landfill Flare (The Flare) is a model GF500, designed manufactured and installed by Windsor Engineering Group Ltd (Windsor) in May 2017”, which features an Elmac DFB-100AD flash back arrestor (which prevents any flame passing back through to the safety valves and the pipework), with a pilot light system in place and is setup up with a temperature control point of 750 °C.

Compliance Rating: Comply – Full

Environmental Standards

5. There shall be no objectionable or offensive odour, dust or particulate matter (PM₁₀), including smoke, as a result of the operation of the flare to an extent where it causes an adverse effect at or beyond the property boundary.

Advice Note: Dust and odour will only be considered offensive or objectionable, after a Manawatu-Wanganui Regional Council officer has considered the Frequency, Intensity, Duration, Offensiveness and Location of the odour (i.e. the FIDOL Factors).

Further to Condition 3 of Resource Consent 6011, four odour complaints were received during the reporting period. None of the odour complaints received during the reporting period were verified as being objectionable.

Compliance Rating: Comply – Full

6. The consent holder shall ensure that the replacement flare is installed by **1 July 2016** and shall notify the *Manawatu-Wanganui Regional Council's Regulatory Manager* in writing within **two working days** of the flare being installed. The replacement flare may be installed prior to this date.

Advice Note: The *Manawatu-Wanganui Regional Council's Regulatory Manager* or team representative can be contacted on 0508 800 800 or by emailing compliance.shared@horizons.govt.nz.

[Condition 6 amended as per variation APP-2013016220.01 dated 29 July 2015]

As noted previously the flare was not commissioned until 15-17 May 2017 and the flare was not in operational until 27 June 2017. This condition has been previously rated as non-complaint and the flare is now in operation, as such it is considered that this condition is no longer applicable.

Compliance Rating: Not Applicable

Operational Restrictions

7. The consent holder shall ensure that any combustion of landfill gases are only undertaken via the flare, except under the following circumstances:
- (i) in the event of combustion equipment failure; or
 - (ii) for combustion equipment maintenance purposes.

Advice Note: Condition 7 only applies when the flare is being used. This consent is solely for the discharge of contaminants associated with flaring of landfill gas. When the flare is not in use, the restrictions imposed by this consent do not apply.

[Condition 7 amended as per variation APP-2013016220.01 dated 29 July 2015]

The Levin Landfill Gas Flare Annual Report 2020/2021 (Flare Annual Report) for the gas flare states landfill gas is collected and transmitted to the flare where it is combusted before discharging to air. In the circumstances listed above landfill gas is discharged un-combusted.

Compliance Rating: Comply – Full

8. The consent holder shall operate the gas collection system in a manner that ensures the rate of extraction of landfill gas is maximised, while the risk of landfill fires due to over extraction is minimised.

[Condition 8 added as per variation APP-2013016220.01 dated 29 July 2015]

The Flare OMP states that well field adjustments are carried out as required when monitoring is carried out. Well field adjustments help to achieve a steady state of operation of the gas collection system by stabilising the flow and quality of the extracted landfill gas. This helps to maximise extraction of landfill gas across the landfill footprint and helps to prevent subsurface fires.

Compliance Rating: Comply – Full

9. To achieve compliance with condition 8 the consent holder shall ensure the landfill gas extraction system is operated to minimise oxygen ingress, and the extraction system shall be shut down if oxygen concentrations exceed 4 per cent.

[Condition 9 added as per variation APP-2013016220.01 dated 29 July 2015]

The Flare OMP notes that the "Levin Flare high oxygen *alarm is required to be set at 4%*". No further evidence has been provided to show this has been done. Please provide evidence that the oxygen alarm level complies with this condition by 1 August 2022.

Compliance Rating: Not Assessed

Post-Development Assurance

10. **2 months** prior to the installation of the new flare, the consent holder shall provide an Operation and Management Plan to Manawatu-*Wanganui Regional Council's* Regulatory Manager. The operation and management plan shall include but not be limited to the following:
- a. Detail on the type, design specifications and timing of installation of the new flare;
 - b. Procedures for regular inspections (both visual and maintenance inspections) of the flare, landfill gas collection field and any associated equipment;
 - c. Scheduled maintenance events for the flare, landfill gas collection field and associated equipment for the upcoming 12 month period;
 - d. Details of procedures for the design and installation of the landfill gas collection field;
 - e. Procedures for the connections of landfill gases to the flaring unit, monitoring and reporting of the flow rates and composition of the gases;
 - f. Detail on the flaring regime/s;
 - g. Detail on the planned contingency measures for dealing with malfunctions, repair and incidents; and
 - h. Records of the details of all maintenance events or any system malfunction (i.e. date, time, what was done, what went wrong, who repaired it and how

[Condition 10 amended as per variation APP-2013016220.01 dated 29 July 2015]

The current Operations and Management Plan held on file by Horizons is dated 2021-2022, this plan has not been fully reviewed as part of this assessment.

Compliance Rating: Not Assessed

11. The consent holder shall review the Operation and Management Plan annually in the month of **June** (commencing June 2017) and provide the Regulatory Manager with an updated version of any subsequent revisions or amendments to the Operation and Management Plan within one month of the amendment(s) being made.

Advice Note: Updated versions of the Operation and Management Plan can be made available to the Regulatory Manager by emailing to compliance.shared@horizons.govt.nz.

[Condition 11 amended as per variation APP-2013016220.01 dated 29 July 2015]

The next scheduled review of this plan is in June 2022 and any update should be provided to Horizons within 1 month of any updates.

Compliance Rating: Not Assessed

12. The consent holder shall ensure that the activity is undertaken in accordance with the Operation and Management Plan provided in accordance with Condition 10 and any subsequent amendments provided under Condition 11 at all times for the duration of this consent.

[Condition 12 amended as per variation APP-2013016220.01 dated 29 July 2015]

The discharge of landfill gas via a gas flare is undertaken in accordance with the current Operation and Management Plan and the Odour Management Plan.

Compliance Rating: Comply – Full

Monitoring Provision

13. The consent holder shall notify the *Manawatu-Wanganui Regional Council's* Regulatory Manager **two working days** prior to:
- (i) The commencement of flaring from the existing flare; and
 - (ii) The commencement of flaring from the replacement flare required under condition 6.

[Condition 13 added as per variation APP-2013016220.01 dated 29 July 2015]

Horizons was notified upon commencement of flaring from the replacement flare, via email. It is considered that this condition is no longer applicable.

Compliance Rating: Not Applicable

14. The consent holder shall maintain a record dates and duration of all flare outages (due to equipment failure or maintenance) in excess of 48 hours and for any occasion for which landfill gas was discharged un-combusted. A copy of this record shall be forwarded to the *Manawatu-Wanganui Regional Council's Regulatory* Manager **annually** in the month of June, commencing **June 2016** or on request.

[Condition 14 amended as per variation APP-2013016220.01 dated 29 July 2015]

The Flare Annual Report states that “from 1 July 2020 to 30 June 2021 there were 7 flare outages that exceeded 48 hours”

Compliance Rating: Comply – Full

15. The consent holder shall, once every month sample each extraction wellhead and at the flare for each of the following parameters:
- (i) gas flow rate;
 - (ii) methane (percentage);
 - (iii) carbon dioxide (percentage);
 - (iv) oxygen (percentage);
 - (v) nitrogen (percentage);
 - (vi) carbon monoxide (parts per million);
 - (vii) hydrogen sulphide (parts per million);
 - (viii) gas pressure;
 - (ix) barometric pressure; and
 - (x) Temperature.

The sampling required under this condition 15 is only required if flaring is occurring from the existing flare. Sampling is to occur at the frequency outlined in the condition.

Advice Note: The sampling required by condition 15 only requires the consent holder collect one sample of gas and analyse it for the listed parameters once month.

[Condition 15 amended as per variation APP-2013016220.01 dated 29 July 2015]

The monitoring records presented in the Flare Annual Report shows that all parameters were tested for on a monthly basis.

Compliance Rating: Comply Full

16. The results of the sampling required by Condition 15 shall be provided to the *Manawatu-Wanganui Regional Council’s Regulatory Manager within one month of monitoring being undertaken.*

[Condition 16 amended as per variation APP-2013016220.01 dated 29 July 2015]

The results of the monitoring is being provided on a monthly basis in accordance with this condition.

Compliance Rating: Comply Full

17. The consent holder shall maintain a log of all complaints (including those received via third parties including the Manawatu-Wanganui Regional Council) regarding dust, odour or other contaminants as follows:
- (i) Time and type of complaint including details of the incident, e.g. duration, location and any effects noted;
 - (ii) Name, address and contact phone number of the complainant (if provided);
 - (iii) Where practicable, the weather conditions including wind direction at the time of the incident;
 - (iv) The likely cause of the complaint and the response made by the consent holder including any corrective action undertaken;
 - (v) Future actions proposed as a result of the complaint; and
 - (vi) The response from the consent holder to the complainant.

A complaints log is provided with the Flare Annual Report. The log includes the information as listed above.

Compliance Rating: Comply – Full

18. A copy of the complaint log required by Condition 17 shall be forwarded to the Manawatu-Wanganui Regional Council's Regulatory Manager **annually** in the month of June, commencing **June 2014** and be made available on request.

[Condition 18 amended as per variation APP-2013016220.01 dated 29 July 2015]

The complaints log was included in the Flare Annual Report

Compliance Rating: Comply – Full

Review

19. The Manawatu-Wanganui Regional Council, under section 128 of the Act, may initiate a review of all conditions of this resource consent during July in the year(s) 2015, 2024 and 2034 for the purpose of reviewing the effectiveness of these conditions in avoiding or mitigating any adverse effects on the environment. The review of conditions shall allow for:
- a. deletion or amendments to any conditions of this resource consent to ensure adverse effects are appropriately mitigated; or
 - b. addition of new conditions as necessary, to avoid, remedy or mitigate any unforeseen adverse effects on the environment; or
 - c. if necessary and appropriate, the adoption of the best practicable options to avoid, remedy or mitigate any adverse effects on the environment.

No review has been initiated by Horizons during this assessment period. The next opportunity for review is October 2024.

Compliance Rating: Not Applicable

Overall Compliance Rating for Resource Consent ATH-2014015044.00 (106798): Comply
- Full

CONCLUSION

As a result of the above assessment the Levin Landfill has been rated as Moderately Non-Complaint for the 2020-2021 assessment period.

This rating has been given primarily due to Moderate Non Compliances in relation to monitoring conditions as set out under Discharge Permit ATH2002003984.02 (6011) for the discharge of landfill gas, odour and dust to air. Specifically ongoing non-compliances with monitoring requirements set out under condition 5 in relation to the performance of the biofilter. It is acknowledged that the ongoing use of the biofilter is subject to application to vary conditions of consent currently lodged with Horizons; however, as this consent is currently active all conditions of consent are required to be complied with.

Specific non compliances in relation to all of the consents for the site are as follows:

ATH-2002003982.03(6009) – Discharge of solid waste to land:

Condition 25 Low Risk Non-Compliance - Failure to report on the location of disposal for the 4 logged instances of dead animal disposal.

ATH-2002003983.02(6010) – Discharge of landfill leachate to land:

Condition 15(b) Low Risk Non-Compliance – minor ponding of surface water on capped landfill (now addressed).

Condition 15(d) Low Risk Non-Compliance - areas of dead, sparse or non-existent vegetation cover in various areas of the capped landfill.

ATH-2002003984.02 (6011) – Discharge of landfill gas, odour, and dust to air:

Condition 5(e) Low Risk Non-Compliance - Monthly methane testing has not been undertaken for the entire assessment period.

Condition 5(f) Low Risk Non-Compliance - Methane monitoring exceeded 200ppm on all occasions (compliance with maximum limit on retest).

Condition 5(i) Moderate-Non-Compliance – Failure to appoint biofilter assessor and undertake annual biofilter assessment.

Condition 5(j) Moderate-Non-Compliance – Required maintenance of biofilter not undertaken.

Condition 5(k) Moderate-Non-Compliance – Required monitoring of biofilter not undertaken.

Condition 5(n) Moderate-Non-Compliance - Required consultation with the Neighbourhood Liaison Group (NLG) over the draft Odour Management Plan (OMP) not undertaken.

Condition 5(o) Moderate Non-Compliance - Failure to undertake all monitoring in accordance with Condition 5 not in general accordance with the OMP.

Condition 5(p) Low Risk Non-Compliance – Required weather monitoring not undertaken (now rectified).

Condition 5(q) Low Risk Non-Compliance - monthly reporting of weather data not consistent throughout assessment period.

ATH-2002009801.02 (102259) – Diversion of Stormwater

Condition 5 – Low Risk Non-Compliance – daily inspections of stormwater system not undertaken.

In relation to the above non-compliances it is expected that all required monitoring is undertaken and documented. Evidence of monitoring is expected to be provided in future annual reports along with evidence of consultation with the Neighbourhood Liaison Group around the Odour Management Plan.

Please ensure the requested information as set out under the condition assessment above for the following:

- Landfill Aftercare Management Plan,
- Offal and dead animal burial details (depths and locations)
- An update on the BPO for leachate remediation
- Details on current capping status at the landfill, and
- Details on Biofilter maintenance and monitoring,

Is provided to Horizons by **1 August 2022**

RECOMMENDATION

As previously noted HDC currently have an application to vary conditions of consent in relation to the use of the biofilter. This variation in addition to those non-compliances that have already been addressed will go a long way to address the majority of the above non-compliances. Please ensure that all required monitoring is undertaken in accordance with the active consent conditions until such time as the variation is granted.

Condition 2A of ATH-2002003983.02 (6010) requires the selected leachate remediation option is fully implemented by June 2023, please provide Horizons with an update on the selection and implementation of the best practical option by 1 August 2022.

In addition the long term future of the landfill operation is currently being determined by the Horowhenua District Council and the landfill is currently closed. Please ensure the required capping is in place in accordance with the Levin Landfill Management Plan and consent requirements. It is expected that a full summary of all monitoring and status of the landfill is provided as part of the next annual report and that Horizons is kept informed of any ongoing developments in relation to the future of the landfill. It is recommended that should the decision be made permanently close the landfill that HDC contact the Horizons Consents Monitoring team to discuss ongoing consenting requirements.

If you have any queries about the attached report, please contact me via email dan.higgs@horizons.govt.nz or on 0212277188.

Yours sincerely



Dan Higgs

SENIOR CONSENTS MONITORING OFFICER

Table 1. Compliance Assessment Guidelines for Individual Consents

Site Compliance Grade	Explanation
Comply – Full	Complying with all conditions of consent.
Comply – At Risk	At Risk grading identified against key condition(s) of one or more of consents for the site.
Low Risk Non-Compliance	<p>Compliance with most of the relevant consent conditions.</p> <p>Non-compliance carries a low risk of adverse environmental effects or is technical in nature (e.g. failure to submit a monitoring report).</p>
Moderate Non-Compliance	Non-compliance with one or more of the relevant consent conditions, where there are some environmental consequences and/or there is a moderate risk of adverse environmental effects.
Significant Non-Compliance	Non-compliance with one or more of the relevant consent conditions, where there are significant environmental consequences and/or a high risk of adverse environmental effects.
Not Assessed	Monitoring has not been undertaken of this consent during the reporting period.

Table 2. Compliance Assessment Guidelines for Individual Conditions

Condition Compliance Grade	Explanation/Examples (not exhaustive)
Comply – Full	Conditions of consent are fully complied with.
Comply – At Risk	Compliant at time of inspection but management / system deficiencies indicate there is a real risk of a non-compliance occurring (e.g. insufficient effluent storage, poor irrigator performance).
Low Risk Non-Compliance	One-off failure to comply with a condition of consent (e.g. one off minor exceedance in key parameter in sampling.)
Moderate Non-Compliance	Four minor exceedances of key parameters for one year's worth of sampling/data .
Significant Non-Compliance	Water quality results indicate there is a potential for or an actual effect which is more than minor that is not authorised by the resource consent.
Not Applicable	Applies to conditions that are no longer applicable. Generally relates to historic conditions that may require provision of a management plan, which has been provided and consent requires no further action.
Not Assessed	Monitoring not undertaken of consent condition.



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