

BEFORE THE MANAWATU-WANGANUI REGIONAL COUNCIL

UNDER the Resource Management Act 1991

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

SECTION 42A REPORT OF STUART STANDEN

COMPLIANCE

26 August 2016

A. Qualifications and Experience

1. My name is Stuart Glen Standen. I am currently employed by the Manawatu-Wanganui Regional Council (**Horizons**) as a Senior Consents Monitoring Officer in the Regulatory Team. I have worked for Horizons since 2012 and have been responsible for assessing compliance against the consent conditions for the Levin Landfill during this time.
2. I graduated from Massey University in 2011 with a Bachelor of Applied Science in Natural Resource Management and in 2014 gained a Post Graduate Certificate in Science.
3. In my duties as a Senior Consents Monitoring Officer, I have been involved in assessing resource consents for the discharge of contaminants into and onto land, air and water from various activities including milk powder dairy plants, meat works, rendering plants, earthworks, wastewater treatment plants, and landfills.

B. Introduction

4. I have been requested by Mr Andrew Bashford, the Council's reporting planner for these applications, to provide a section 42A report examining the compliance history of the landfill odour issues and the leachate daylighting into the Tatana Drain. Mr Bashford has also asked me to review and comment on certain conditions proposed in the Horowhenua District Council's (HDC) s127 application and it's response to 2015 notice of review.
5. I have visited the Levin Landfill for compliance inspections since 31 May 2012 and I have assessed their quarterly and annual monitoring data, therefore I am familiar with the landfill site.
6. I have also visited the Grange's property as recent as 16 August 2016 in response to odour complaints.

C. Odour Complaints

7. Since late 2013 Horizons has received regular complaints from the Grange's stating offensive and objectionable landfill odour is detected at their residence and property.
8. The increase in odour complaints corresponds with the filling of Stage 2 with refuse and the outages of the landfill gas flare.
9. Since 13 February 2014 the Grange's have filled out a Horizons Regional Council Odour Diary. The odour diary notes the date, time, duration and intensity of the odour events. In addition to the odour diary, the Grange's notify Horizons via email when landfill odours have been detected at their residence. Based on the Grange's odour diary and email notifications the scale and nature of the odour complaints is as follows;
 - i) On average, odour is detected at the Grange's residence three times per week when calm weather conditions are present;
 - ii) The odour events last between one to two hours with the occasional all day event;
 - iii) Odour is often detected between 6.00 a.m. and 8.00 a.m. following a still and cold night or during still conditions during the evening; and
 - iv) The odour intensity ranges from 1 (very weak) to 6 (extremely strong).
10. The Grange's rate the odour intensity on the following scale between 1 to 6;
 1. Very weak
 2. Weak
 3. Distinct
 4. Strong
 5. Very strong
 6. Extremely strong.
11. The odour diary and email notification covers the period from 13 February 2014 to 9 August 2016. During this period the Grange's have recorded 158 dates where landfill odours have been detected at their residence.

12. Based on the Grange's odour diary and email notifications, the following is the distribution of odour complaints and intensity for the period 13 February 2014 to 9 August 2016:

1. Very weak (57);
2. Weak (42)
3. Distinct (31)
4. Strong (15)
5. Very strong (8)
6. Extremely strong (7).

13. In relation to the on-going nature of the odour complaints Horizons graded condition 3 of resource consent 6011 as significant non-comply in a compliance report dated 9 February 2015. Condition 3 of resource consent 6011 states:

There shall be no discharge of odour or dust from the landfill that in the opinion of a Regional Council Enforcement Officer is noxious, dangerous, offensive or objectionable beyond the property boundary.

14. The significant non-comply report states:

Based on the complainant's odour diary I have deemed there has been 27 occasions during the above period (22 March 2014 to 30 September 2014) where the intensity and character of odour discharged beyond the landfill boundary would be offensive or objectionable to an extent where it would adversely effect the complainant's environment.

15. In response to the significant non-compliance report HDC engaged MWH Consultants to carry out an odour assessment investigation of the Levin Landfill. This assessment was carried out at the Levin Landfill 18 and 19 November 2014 with findings contained in a MWH Consultants report titled *Levin Landfill Odour Assessment* and dated February 2015¹.

16. Horowhenua District Council also engaged MWH Consultants to monitor hydrogen sulphide concentrations at the Grange's property. The findings of this monitoring are contained in a MWH report titled *Continuous Ambient Air Quality Monitoring for Hydrogen Sulphide – Levin Landfill* and dated 10 July 2015².

17. An informal arrangement between the Granges, HDC and Horizons was agreed where the Grange's were to telephone HDCs Solid Waste Officer when odour was detected at their residence.

¹ See Tab 4, Volume 2 of the Hearing Folders.

² See Tab 5, Volume 2 of the Hearing Folders.

18. The purpose of the arrangement was to allow for a quick response from the Solid Waste Officer to assess the odour at the Grange's residence. I am not aware of any instance where the Solid Waste Officer has detected landfill odours at the Grange's residence.
19. Recently the relationship between the Solid Waste Officer and the Grange's has deteriorated and the Grange's no longer telephone the Solids Waste Officer when odour is detected at their residence.
20. Since this relationship deteriorated, I have carried out six proactive odour assessments at the Grange's residence. The odour assessments were prearranged with the Grange's and were carried out between 6.00 a.m. and 7.00 a.m. or between 6.00 p.m. and 7.00 p.m. The reason why the odour assessments are prearranged and proactive, rather than reactive, is due to the lag time between the odour notification from the Grange's and travelling from Palmerston North to Levin. During this lag time it is highly likely the odour, according to the odour diary, has dissipated from the complainant's residence.
21. The proactive odour assessment involved "sniffing the air" around the Grange's residence and along Hokio Beach Road at locations adjacent to the Levin Landfill. I have not detected any landfill odours at any location during these proactive assessments.
22. Based on the on-going nature of the odour complaints, it is evident there is an odour issue affecting the Grange's and that the landfill is the contributing factor. Since the issuing of the significant non-compliance report to HDC, Horizons has deemed it appropriate for an Enforcement Officer to detect odours beyond the landfill boundary in order to consider further enforcement action.

D. Landfill Leachate Daylighting into the Tatana Drain

23. On 14 October 2014, I carried out a routine site visit to a paddock located to the north of the landfill and owned by Johnson and Nancy Tatana. The site visit was in response to concerns raised by a member of the general public about landfill leachate from the closed and unlined landfill entering the roadside drain. Two water quality samples were collected from a drain within the property ("the Tatana Drain"), one sample from ponded water on the Tatana's property and one sample from the Hokio Beach Road drain.
24. These water quality samples show that groundwater contaminated with landfill leachate from the landfill is "day lighting" into the Tatana Drain. The Tatana Drain discharges into the Hokio Stream. In relation to the "day lighting" into the Tatana Drain, Council graded condition 2 of resource consent 6010 as significant non-comply in a compliance report dated 31 October 2014. Condition 2 states:

Landfill leachate shall not contaminate adjoining land.

25. Leachate from the unlined landfill is known to influence the shallow groundwater aquifer. This is because the groundwater monitoring bores downgradient of the unlined landfill show elevated leachate indicator parameters (i.e. ammonia, conductivity, and chloride) when compared to shallow groundwater up gradient of the unlined landfill.
26. The significant non-comply report recommended that HDC develop a Sampling Management Plan (SMP) to determine the scale, nature and volume of landfill leachate entering the Tatana Drain and potential and actual effects on the Hokio Stream. It was also recommended the SMP should include mitigation options to cease the discharge of landfill leachate to adjoining properties.
27. A draft SMP prepared by HDC was submitted to Horizons on 7 November 2014 and a report titled *Levin Landfill Water Quality Investigation* and dated March 2015 was submitted to Council. My assessment of the investigation report concluded the report was inadequate to address the key issues of the Tatana Drain non-compliance. This is because the investigation report did not characterise the scale, nature and volume of landfill leachate entering the Tatana Drain and potential and actual effects on the Hokio Stream. The report did not include options to cease the discharge of landfill leachate to adjoining properties as recommended in the significant non-comply report.
28. The *Levin Landfill Water Quality Investigation* report stated that the original intention of condition 2 was to collect runoff from the unlined landfill when it was operational. The investigation report also pointed out that all Tatana Drain water quality samples comply with the ANZECC stock watering limits referenced in condition 11(a) of resource consent 6010.
29. It is considered that condition 2 is not strong enough to uphold the significant non-compliance of contaminated groundwater “day lighting” into the Tatana Drain. This is because the drain was installed to capture leachate runoff and the water quality parameters complied with the limits referenced in condition 11(a). The significant non-compliance was rescinded in an email dated 10 April 2015 from Horizons to HDC.
30. All water quality samples collected post 14 October 2014 shows that groundwater contaminated with landfill leachate from the closed landfill continues to “day light” into the Tatana Drain.

E. Horowhenua District Council s127 Application and Response to 2015 Notice of Review Report

31. HDC proposes to delete condition 2 of resource consent 6010 which prohibits landfill leachate from contaminating adjoining land. It is my opinion that this condition should remain to prohibit the contamination of adjoining land from any source from within the landfill. For example, condition 2 would be useful in a situation where leachate from the leachate pond discharged onto and into land and contaminated adjoining property.
32. HDC proposes to delete conditions 18 through to 27 of resource consent 6010 which authorises the irrigation of leachate to land. HDC has not irrigated leachate to land for approximately five years. I do not object to the deletion of these conditions subject to a new condition that prohibits the discharge or irrigation of landfill leachate onto and into land at the landfill. This is to ensure that there is a condition that governs the discharge or irrigation of leachate to land.
33. HDC has proposed to change the annual report due date to Council and the Neighbour Liaison Group from 31 August to 30 September. I have no objections to this request.
34. HDC proposes to remove condition 10 of resource consent 6010 which requires a duplicate sample to be completed in the event a laboratory does not have accreditation for a particular test parameter. HDC uses International Accreditation New Zealand (IANZ) accredited Eurofins ELS for all water quality analysis. Eurofins ELS does not have accreditation for Volatile Fatty Acid (VFA); however, they follow an APHA method for VFA analysis.
35. Hills Laboratories use a different test method for VFA analysis compared to Eurofins ELS thus making a comparison between the two laboratories not useful. Horizons has previously informed HDC that a duplicate VFA test is not required as long as the laboratory carrying out the analysis is IANZ accredited.
36. I support the removal of condition 10 of resource consent 6010 subject to the insertion of a new condition that requires all analysis to be undertaken by an IANZ accredited laboratory.
37. HDC proposes to delete condition 14(m) of resource consent 6009 which requires a compost feasibility study to be commissioned. This has been completed and is incorporated into the landfill management plan which concludes the composting is not feasible. I have no objections to the removal of this condition.

38. HDC proposes to amend the wording of condition 28(d) of resource consent 6009 to change the protective material on the side slopes from sand to gravel. This change has been implemented, with Horizons approval, for Stage 3. Therefore I support the amending of condition 28(d).
39. HDC proposes to amend condition 5 of resource consent 102259 from a position that requires the stormwater system to be clear of refuse at all times, to a position where the stormwater system is to be clear of refuse at the time of fortnightly inspection only. I understand HDCs proposed condition would therefore permit refuse to be present in the stormwater system for 13 days out of the fortnight, or at times between the fortnightly inspection. I believe HDCs proposed consent condition would be impracticable to assess, as a routine site inspection would have to coincide with HDCs fortnightly stormwater system inspection to determine if the stormwater network is clear of refuse.
40. In relation to this condition I understand that HDC is concerned that the presence of any amount of refuse, regardless of type and potential environmental impact, would put this condition at risk of non-compliance. For example, a windblown plastic bag present in the stormwater drain would be seen as non-compliance. It is my position that this example would not warrant non-compliance and would be assessed under condition 4 of resource consent 6009 which requires HDC to monitor the landfill for the build up of litter, paper and other deposits outside of the active landfilling areas, and to remove such material as required. Therefore, I do not agree with HDCs proposed amendment of condition 5 of resource consent 102259 as it is important to have a condition that requires the stormwater system to be clear of refuse.
41. HDC proposes to amend condition 9 of resource consent 102259 to reflect the change in stormwater disposal that is occurring on site. I support this amendment as it reflects the disposal of stormwater on site.

F. Compliance History

42. Table 1 outlines a summary of the compliance history of the Levin Landfill consents for the period 1 January 2011 to 19 August 2016. The compliance history includes the assessment of the Levin Landfill quarterly and annual reports, as well as routine site inspections.

Table 1 Compliance History Summary

Compliance Report Date	Assessment Details	Report Compliance Grading
19 May 2011	16 November 2010 and 27 February 2011 routine site inspections. 2009/10 annual report, July 2010, October 2010 and January 2011 quarterly report assessment.	Comply
25 October 2011	15 September 2011 routine site inspection.	Comply
31 May 2012	31 May 2012 routine site inspection.	Comply
13 September 2012	13 September 2012 routine site inspection. 2011/12 annual report assessment.	Comply
2 November 2012	July 2012 quarterly report assessment.	Comply
7 November 2012	October 2012 quarterly report assessment.	Comply
24 January 2013	24 January 2013 routine site inspection. January 2013 quarterly report assessment.	Comply
28 May 2013	April 2013 quarterly report assessment.	Comply
9 September 2013	8 August 2013 routine site inspection. 2012/13 annual report assessment.	Comply
21 October 2013	July 2013 quarterly report assessment	Comply
11 December 2013	October 2013 quarterly report assessment	Comply

Compliance Report Date	Assessment Details	Report Compliance Grading
2 April 2014	18 March 2014 routine site inspection. January 2014 quarterly report assessment.	Comply
4 May 2015	25 March routine site inspection. October 2014 and January 2015 quarterly report assessment.	Comply – Full Comply – At Risk
30 May 2014	April 2014 quarterly report assessment	Comply
31 October 2014	Complaint visit to Tatana Drain.	Significant Non-Comply
17 September 2014	11 September 2014 routine site inspection. July 2014 quarterly report assessment.	Comply – Full
9 February 2015	Assessment of a complainant's odour diary.	Significant Non-Comply
1 December 2015	26 November 2015 routine site inspection. April 2015 and July 2015 quarterly report assessment. 2014/15 annual report assessment.	Comply – Full
1 June 2016	October 2015 and January 2016 quarterly report assessment.	Comply – Full
16 August 2016	15 August 2016 routine site inspection	Non-Comply