SMOOTH HILL LANDFILL DRAFT ORC CONSENT CONDITIONS – 29 APRIL 2022

A. General conditions

1. The construction, operation, closure and aftercare of the landfill and road upgrades, including all associated discharges of contaminants to land, water, and air, must be undertaken in general accordance with the following documents, except where modified by other conditions of this consent. In the event of differences or conflict, between the measures in the documents and the conditions, the conditions shall prevail:
   a. [insert references to final consent documents]
2. Pursuant to Section 128 of the Resource Management Act 1991 the consent authority may in [insert month] each year serve notice of its intention to review the conditions of this consent for the purposes of:
   a. Determining whether the conditions of this consent are adequate to deal with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage, or which becomes evident after the date of commencement of the consent.
   b. Ensuring the conditions of this consent are consistent with any National Environmental Standards, relevant regional plans, and/or the Otago Regional Policy Statement.
   c. Reviewing the frequency of monitoring or reporting required under this consent.
   d. Amending the monitoring requirements .
   e. Requiring the adoption of the best practicable option to reduce any adverse effect on the environment.

B. Conditions to be met during detailed design, construction, and operation

General

3. All investigations, detailed design, and supervision of construction of the initial landfill development works, works for each stage of the landfill, and road upgrades must be supervised by a suitably experienced Chartered Professional Engineer (CPEng).
4. The consent holder must establish and retain at its own cost, an independent peer review panel to review the design, construction and operation of all stages of the landfill and road upgrades, and the management of environmental and ecological effects, and to assess whether or not the work has been undertaken by appropriately qualified personnel in accordance with the consents and good practice.

   The independent Peer Review Panel must comprise at least three persons who together must be:

   a. Independent of the consent holder.
   b. Independent of the planning, design, construction, management, and monitoring of the site.
   c. Experienced in landfill design, construction, and management.
   d. Experienced in geotechnical, groundwater, and surface water aspects of landfill design, construction and operation.
   e. Experienced in terrestrial and freshwater ecology.
   f. Recognised by their peers as having such experience, knowledge and skill.
   g. Approved in writing by Otago Regional Council.

Commented [RvV1]: As noted by Commissioner Caunter the ORC consent document should be restructured commencing with a General Conditions section that contains matters relevant to all ORC consents eg: (compliance with application documents and plans (which should be listed); site meeting with ORC staff prior to commencement; briefing of contractors; community liaison group establishment and role (including servicing by consent holder); peer review panel establishment, role and servicing; complaints process; lapsing; duration; s128 review; bond; annual reporting to ORC; list of management plans; management plan certification process; etc.
Followed by a series of headings based on the actual consents required from ORC with relevant consent specific conditions under each heading. EG
- Discharge waste to land
- Discharge leachate to land
- Discharge landfill gas to air and flare gas
- Discharge dust and odour to air
- Discharge contaminated water (attenuation pond and sediment pond) to water
- Take and use groundwater
- Divert surface water
- Dam surface water
- NES - consents

That structure will help ensure only relevant conditions are imposed and avoid repetition and overlapping conditions

There needs to be a condition suite setting out the certification process for management plans and amendments to them. This should be included in the "General Conditions" portion of the ORC consent document. For an example wording that can be modified for use here refer to the **Management Plan Certification Process** conditions imposed on the QLDC designation for the Queenstown Town Centre Arterial by the Expert Consentin...

Commented [RvV2]: No earthworks or vegetation clearance consents are required from ORC within the Designated site under the regional plans. Some narrow scope earthwork and vegetation clearance consents are triggered by NES-FW in relation to potential natural wetlan...

Commented [RvV3]: Need to avoid overlap with DCC conditions.

Commented [RvV4]: See first comment on scope of conditions. Hereafter simply noted as "see first comment"

Commented [RvV5]: Need to avoid overlap with DCC conditions.

Commented [RvV6]: Why split out ecological effects?

Commented [RvV7]: What work?

Commented [RvV8]: See first comment

Commented [RvV9]: See first comment.

Commented [RvV10]: What does that mean? How is that to be determined?

Commented [RvV11]: Delegated approval in conditions is generally inappropriate? Perhaps certification process instead?

5. At least 3 months prior to commencing the construction of the initial landfill development works, a new landfill stage, and road upgrades the consent holder must submit a design report and design drawings to the independent peer review panel for certification that it meets the requirements of the consent. The independent peer review panel must communicate this certification to Otago Regional Council. Construction must not commence until Otago Regional Council has confirmed the requirements of the condition have been met.

6. The completed initial landfill development works, works for each stage of the landfill, and road upgrade works must be certified by the suitably experienced Chartered Professional Engineer (CPEng) that they have been completed in accordance with the detailed design certified by the independent peer review panel. A Construction Quality Assurance (CQA) report must be prepared and submitted to the independent peer review panel within 3 months following completion.

7. The independent peer review panel must prepare an annual report to be submitted to Otago Regional Council and Dunedin International Airport Limited prior to 1 March each year, on the adequacy of the following matters in relation to meeting requirements of the consents:

    a. Any management or monitoring plans reviewed during the year.

    b. Any designs reviewed during the year.

    c. Construction activities undertaken including:

        i. Initial landfill development works.

        ii. Site preparation.

        iii. Liner construction.

        iv. Leachate collection system installation.

        v. Landfill gas collection system installation.

    d. Landfill operation including:

        i. Water control, including stormwater and leachate management.

        ii. Waste compaction.

        iii. Waste acceptance.

        iv. Daily and intermediate cover placement.

        v. Leachate system.

        vi. Landfill gas system.

    e. Monitoring results and records.

    f. Capping and rehabilitation.

    g. Management of adverse environmental effects.

    h. Ecological management.

    This report must be informed by at least the following:

    a. A review of the landfill annual monitoring report required by condition 112.

    b. Review of designs and management plans submitted during the year.

    c. Review of construction CQA reports.

Commented [RvV12]: See first comment.

Commented [RvV13]: Avoid overlap with DCC consents. Same comment applies to all subsequent references to road upgrade works.

Commented [RvV14]: Inappropriate for peer review panel to certify things. They could instead recommend to ORC whether or not the ORC should certify things. Same comment applies to other conditions indicating peer review panel certification.

Commented [RvV15]: Which consents conditions does the peer review panel ned to consider here?

Commented [RvV16]: See first comment.

Commented [RvV17]: ORC should be the certifying body.

Commented [RvV18]: See first comment.

Commented [RvV19]: Defined where?

Commented [RvV20]: We can't condition a third party. Instead "Consent holder must commission the peer review panel to ….

Commented [RvV21]: It would seem more appropriate for the consent holder to prepare this report and to have it reviewed by the peer review panel perhaps?

Commented [RvV22]: Need a process for certifying amended management plans and monitoring plans.

Commented [RvV23]: See first comment.

Commented [RvV24]: See first comment.

Commented [RvV25]: Is that a peer review panel task or a consent holder task?

Commented [RvV26]: Is that a peer review panel task or a consent holder task?

Commented [RvV27]: What does that mean?
Is that a peer reviewed panel task or a consent holder task?

Commented [RvV28]: See first comment?
What does 'ecological effects' mean?
Is that a peer review panel task or a consent holder task?

d. Any further enquiries and inspections required by the independent peer review panel to allow them to carry out their duties.

The consent holder must make the report publicly available on its website.

Land Stability

8. Additional geotechnical investigations must be carried out as necessary as part of the detailed design of the landfill to generate a robust site encompassing geotechnical ground model for the site. The performance of the in-situ Henley Breccia is critical to the cut slope stability; further investigation must include verification of the dip and dip direction of the Henley Breccia and strength assessment of the contacts between units. The location of investigation points will be determined during the initial stages of the detailed design process where specific confirmation is required.

9. A Site Specific Probabilistic Seismic Hazard Assessment (SSSHA) must be undertaken as part of Detailed Design of the landfill to ensure seismic risks are addressed so the landfill's performance under seismic load is consistent with an IL4 structure as defined in Table 3.2 NZS 1170.0.2004 Structural Design Actions - Part 0 General Principles (facilities containing hazardous materials capable of causing hazardous conditions that extend beyond the property boundaries) and Table 3.3 for appropriate annual probability of exceedances based on design life. The detailed design and construction of the landfill, in particular for permanent and temporary slopes, must be modified as necessary to incorporate any changes in seismic design parameters identified by the SSSHA.

10. The detailed design of the landfill must demonstrate the short (construction and operation) and long-term (closure to post closure) stability of all cut and fill slopes of the landform. This will be achieved by undertaking quantitative limit equilibrium slope stability assessment of the design landform and earth fill retaining bund to demonstrate a factor of safety for cut and fill slopes in the static load case of ≥1.5, and for the seismic load case where the factor of safety is <1 in the pseudo-static seismic load case, the displacement method must be considered as per Section 6.3.2 of the Waka Kotahi NZTA Bridge Manual (3rd Edition Oct 2018).

11. The detailed design of the landfill must include stability analysis to verify the placement of waste achieves waste stability in the short (construction/operation) and long-term (closure/post closure) and ensures the interface friction angle at the base of the landfill between the waste and liner protects against a base slide failure or a potential circular slip failure through the base. This must include:

    a. Veneer slope stability analysis of the proposed liner and capping arrangements for each stage.

    b. Waste stability analysis of the proposed landfill stages.

    The analysis shall utilise site specific parameters where possible for the various materials, and/or publicly available material data where site-specific information is not available. Where publicly available material data is used, a verification programme must be included as part of the detailed design documentation provided to the independent peer review panel for certification that the construction materials align with any assumptions made as part of the slope stability analysis.

Surface water, groundwater, and leachate management

12. The landfill must be designed and constructed with a:

    a. Landfill liner to isolate leachate from the underlying strata, and which meets the minimum requirements of the WasteMINZ *Technical Guidelines for Disposal to Land 2018* for a class 1 landfill.

    b. Leachate collection system to remove leachate from the landfill, and which meets the WasteMINZ *Technical Guidelines for Disposal to Land 2018* for a class 1 landfill and configured to ensure the

Commented [RvV29]: See first comment.

Commented [RvV30]: See first comment.
Perhaps this could relate to the "discharge waste to land" consent?

Commented [RvV31]: See first comment.

maximum head of leachate on the liner is no greater than 300mm over all areas of the liner under normal operating conditions, apart from the sumps.

c. Groundwater collection system beneath the landfill liner which is sized and configured to ensure effective sub-liner drainage and control of groundwater, with a separate groundwater quality monitoring sump from the leachate collection system.

d. Stormwater system that is sized and configured to collect and divert stormwater away from open sections of the landfill and discharge it to the unnamed tributary of the Otokia Creek.

13. The stormwater perimeter drain, other permanent drainage diversion channels and culverts, and attenuation basin must be designed and constructed to manage a 1% AEP (Annual Exceedance Probability) storm event. Diversion channels must be designed such that if this capacity is exceeded the preferential (secondary) flow path is, as far as practicable, away from the landfill.

14. All stormwater from the site must be discharged to the unnamed tributary of Ōtokia Creek as follows:

a. Stormwater collected within the area of Stage 1 of the landfill development must be discharged via a pipe through the toe bund to the unnamed tributary of Ōtokia Creek, until Stage 1 is completed.

b. Except as provided by (a) above, stormwater from gullies upstream of the attenuation basin, the perimeter swale drain, and landfill operational areas (other than open sections of the landfill), upper facilities area, and final cap must be directed to the attenuation basin for infiltration to ground, and discharge to the unnamed tributary of Ōtokia Creek.

15. Suitable scour protection must be placed within the landfill perimeter drain where design flows exceed 0.8m/s, and placed at the outlet and spillway of the attenuation basin, to prevent scour.

16. The vehicle wash bay must be designed, constructed, and operated to ensure water used passes through sumps with oil and sediment traps with the capacity to cater for the proposed discharge of water. Discharges from the vehicle wash bay must be directed to a sediment retention pond prior to discharge to the unnamed tributary of Ōtokia Creek.

17. The wheel wash must be designed, constructed, and operated to ensure used water passes through sediment traps and flocculation ponds of capacity to cater for the proposed discharge, prior to being recycled to the wheel wash. Excess discharges from the wheel wash must be directed to the landfill attenuation basin.

18. Stormwater, erosion and sediment control management measures must be implemented during the construction and operation of the landfill, and construction of the road upgrades, which ensure:

a. The area of soil surfaces exposed at any one time is minimised.

b. Cut off drains are installed upslope of exposed soil surfaces to intercept stormwater and minimise flow over exposed soil.

c. All stormwater from exposed soil surfaces within the landfill footprint is directed to and treated in sediment retention ponds, prior to discharge to the landfill attenuation basin or the unnamed tributary of Ōtokia Creek.

d. Temporary measures such as silt fences, sediment traps, sediment retention ponds, and temporary cover and stabilisation are installed to minimise the transport of sediment from exposed soil surfaces and stockpile areas.

e. Completed earthworked areas are stabilised with vegetation or other means as soon as practicable.

19. All erosion and sediment control measures must take into account site specific conditions and be designed and implemented to in accordance with Auckland Council Publication GD05 – *Erosion and Sediment*

Commented [RvV32]: See first comment.

Commented [RvV33]: Will (a) to (e) be specified in an ESCP?
Do we have a condition requiring a ESCP with standard ESCP requirement conditions that follow?

Control Guide for Land Disturbing Activities in the Auckland Region – June 2016 for the sizing of ponds, and Environment Canterbury *Erosion and Sediment Control Toolbox*, or other best practice guidelines, for the identification of the most appropriate control measures taking into account site specific conditions. Sediment control ponds must be designed to manage a 10% AEP (Annual Exceedance Event) storm event, with provision to pass a 1% storm event. Scour protection must be placed at the outlet of sedimentation ponds to prevent scour.

20. The take of groundwater from the groundwater collection system must only be used for non-potable water supply, and the quantity taken for this purpose must not exceed 50m^3/day. Any groundwater that is not taken for this purpose must be discharged immediately to the unnamed tributary of Ōtokia Creek.

21. The take of groundwater under condition 20 must be measured and recorded as follows:

    a. Prior to the first exercise of this consent, the consent holder must install a:

        i. Water meter that will measure the rate and volume of water taken to within an accuracy of +/- 5%. The water meter must be capable of output to a datalogger.

        ii. A datalogger that time stamps a pulse from the datalogger at least once every 15 minutes and has the capacity to hold at least twelve months data of water taken; and

        iii. A telemetry unit which sends all of the data to the Otago Regional Council.

    b. The consent holder must provide telemetry data once daily to the Otago Regional Council. The consent holder must ensure data compatibility with the Otago Regional Council's time-series database and conform with Otago Regional Council's data standards.

    c. Within 20 working days of the installation of the water meter/datalogger/telemetry unit and any subsequent replacement of a water meter/datalogger/telemetry unit and at 5-yearly intervals thereafter, and at any time when requested by the Otago Regional Council, the consent holder must provide written certification to the Otago Regional Council signed by a suitably qualified person certifying, and demonstrating by means of a clear diagram, that:

        i. Each device is installed in accordance with the manufacturer's specifications; and

        ii. Data from the recording device can be readily accessed and/or retrieved in accordance with the conditions above.

    d. The water meter/datalogger/telemetry unit must be installed and maintained throughout the duration of the consent in accordance with the manufacturer's instructions.

    e. All practicable measures must be taken to ensure that the recording device(s) are fully functional at all times.

    f. The Consent Holder must report any malfunction of the water meter/datalogger/telemetry unit to the Otago Regional Council within 5 working days of observation of the malfunction. The malfunction must be repaired within 10 working days of observation of the malfunction and the consent holder must provide proof of the repairs to the Otago Regional Council within 5 working days of the completion of repairs.

Advice Note: the water meter, data logger and telemetry unit should be safely accessible by the Consent Authority and its contractors at all times. The Water Measuring Device Verification Form and Calibration Form are available on the Otago Regional Council' website.

22. The landfill perimeter drain, other permanent drainage diversion channels and culverts, attenuation basin, and groundwater collection system must regularly inspected and maintained in perpetuity.

Commented [RvV34]: Would this be better included as part of conditions requiring the preparation of a ESCP and linked back to the stormwater discharge consent?

Commented [RvV35]: But first part of conditions prohibits any taking for uses that are not non-potable?

Commented [RvV36]: What does 'regularly inspected' mean?

23. The installation of the landfill lining system must be subject to independent construction quality assurance (CQA), to include the soil and geosynthetic components of the lining system. On completion of each stage of lining system construction a CQA report must be prepared and must include all of the test results, a description of the observations undertaken and certification that the lining system has been installed in accordance with the specification. This report must be submitted to the independent peer review panel.

24. Leachate storage and management facilities must be provided as follows:

    a. Leachate storage and management facilities must be designed for a capacity 50% greater than the calculated (as calibrated against the previous two year's results) maximum leachate volume produced over a three-day period for any stage of operation of the landfill. To demonstrate compliance with this condition, the calculated maximum leachate volume and the leachate storage and management facilities must be described in the LMP required by condition 113.

    b. For the first two years of operation of the landfill where there are insufficient records to calibrate the leachate storage and management systems, such systems must be designed to accommodate theoretical storage and flow rates based on the leachate which would be generated by a 1% AEP event for the extent of landfill to be developed over that two-year period.

Commented [RvV37]: Compliance should relate to monitoring records of leachate produced?

Commented [RvV38]: Or "calculated" or "modelled"?

Commented [RvV39]: What sort of event?

25. Leachate not removed from the site must only be discharged onto or into land within the landfill liner extent shown on drawing 12506381-01-C201.

26. On-site standby electrical supply must be provided at all times to ensure that the operation of the leachate collection system is not interrupted through loss of mains power supply.

Groundwater and surface water monitoring

27. The following additional groundwater monitoring wells and piezometers must be installed:

    (a) Three additional groundwater monitoring wells at locations GW1, GW5, and GW7 as shown on drawing 12506381-C309 must be installed at least 36 months prior to construction of the landfill to enable collection of groundwater level and groundwater quality data. The additional wells at GW1 and GW5 must be installed to monitor the deep groundwater system with a screen between 90 and 85m RL. The additional monitoring well at GW7 must be installed to monitor the shallow groundwater system with a screen between 99 and 96 mRL. The additional monitoring wells must be constructed in accordance with *NZ4411:2001 Environmental Standard for Drilling of Soil and Rock*.

    (b) Six wetland piezometers at the approximate locations WT1-WT6 as shown on drawing 12506381-C309 must be installed at least 36 months prior to construction of the landfill to enable the collection of water levels. The piezometers must be installed to allow monitoring of sub-surface water levels within the wetland.

    (c) Four groundwater monitoring wells must be installed within and downgradient of the landfill footprint to form a transect(s) in the direction of shallow groundwater flow to the wetland in the vicinity of wetland monitoring locations WT2 to WT4 as shown on drawing 12506381-C309 to enable the collection of water levels. These monitoring wells must be screened at an elevation that allows monitoring of the shallow groundwater system. The additional monitoring wells must be constructed in accordance with *NZ4411:2001 Environmental Standard for Drilling of Soil and Rock*.

28. The groundwater monitoring wells described in the table below as shown on drawing 12506381-C309 must be retained to enable collection of baseline groundwater level and groundwater quality data and monitoring for leachate contamination of groundwater during operation.

Monitoring well	Description

GW1	Additional monitoring well to be installed with screen between 90-85m RL (down hydraulic gradient deep GW system). See condition 27.
GW2	Existing wells BH02a and BH02b (shallow GW system).
GW3	Existing well BH04a (shallow GW system) and BH04b (deep GW system)
GW5	Existing wells BH01a and BH01b (shallow GW system). Additional monitoring well (BH01c) to be installed with screen between 90-85 m RL (up hydraulic gradient deep GW system). See condition 27.
GW6	Existing well BH09
GW7	Additional monitoring well to be installed with screen between 99-96m RL (shallow GW system). See condition 27.
BH202	sting well BH202 (deep GW system)

29. Water monitoring to collect baseline groundwater level and quality data, and surface water level and quality data must commence at least 36 months prior to construction of the landfill at the monitoring wells described in condition 28, and surface water monitoring at locations SW1 – SW7 (and SW8 if access is available) shown on drawing 12506381-C309. Baseline water level and quality data must be used to inform the development of monitoring trigger levels. Sampling of groundwater must occur at least every 3 months and sampling of surface water every month for the 36 month baseline monitoring period. Monitoring and sample analytes must be for the full suite of parameters set out in **Attachment 1** for those locations.

Commented [RvV40]: Prior to the commencement of construction works? Can these works be defined?

Commented [RvV41]: Available from whom?

30. Automated monitoring equipment must be installed at the approximate locations described in the table below and as shown on drawing 2506381-C309 to enable automated collection of baseline data for the identified parameters for 36 months prior to construction of the landfill.

Commented [RvV42]: This table should be labelled and might be better placed as an Attachment / appendix?

Monitoring Location	Monitoring Parameter	Minimum Frequency of Monitoring	Minimum Precision
Wetlands			
WT1	Water Level	Hourly	0.01 m
WT2			
WT3			
WT4			
WT5			
WT6			
Groundwater			
GW1	Water Level	Hourly	0.01 m

GW2			
GW3			
GW4			
GW5			
GW6			
Landfill Transect Wells			
Surface Water			
SW7	Water Level	Hourly	0.01 m
	Water Velocity		0.1 m/s
	Soluble Nitrate	Daily	0.5 mg/L
	Soluble Ammonia		0.5 mg/L
	Electrical conductivity		5 uS/cm
	Dissolved Oxygen		1 mg/L
	Temperature		1°C
SW8/SW3*	Water Level	Hourly	0.01 m
	Water Velocity		0.1 m/s
	Soluble Nitrate	Daily	0.5 mg/L
	Soluble Ammonia		0.5 mg/L
	Electrical conductivity		5 uS/cm
	Dissolved Oxygen		1 mg/L
	Temperature		1°C

** Advice Note: Where permanent access to location SW8 for monitoring cannot be secured for continuous monitoring equipment must be installed at location SW3.*

31. Rainfall data collected at the automatic weather station at the site required under condition 41 must be recorded over the 36 month monitoring period stipulated in condition 29 and 30. On-site rainfall data must be compared with the groundwater and wetland level data from each monitoring well, piezometer, or water logger to identify when recharge from rainfall has influenced observed water levels.

32. At the conclusion of the monitoring period identified in condition 29 and 30, the baseline data must be reviewed to confirm or make any required adjustments to the conceptual site model and predicted

Commented [RvV43]: Daily, weekly, monthly ?

Commented [RvV44]: When should this comparison occur? How is it reported to ORC?

Commented [RvV45]: What is that? Need to cross-refer to where this 'conceptual model' is described / defined?

environmental effects. The monitoring results for the entire monitoring period, along with any updates to the conceptual model must be reported to the independent peer review panel. This report must include the Receiving Waters Environment Monitoring Plan required under condition 33 and 34, detailing the requirements of long-term monitoring.

33. A Receiving Waters Environment Monitoring Plan must be developed to achieve the following objectives:

    a. Ensure construction management controls are adequate and being operated and maintained to ensure effective operation.

    b. Identify potential leachate discharge to the environment at or near source to confirm efficacy of the management system or the need for remedial actions.

    c. Protection of the receiving environment downstream and downgradient of the landfill by ensuring that the landfill does not have an adverse effect on water quality and levels.

34. The Receiving Waters Environment Monitoring Plan shall include the following as a minimum:

    a. Long term groundwater and surface water quality monitoring requirements, including locations, parameters and frequency. As a minimum this is to include monitoring requirements detailed in conditions 36 - 38 below.

    b. Groundwater and surface water quality trigger levels for each monitoring location and monitoring parameter.

    c. Hydrological and water level monitoring requirements for the wetland and unnamed tributary of Ōtokia Creek, including locations, parameters and frequency.

    d. Hydrological and water level trigger levels for each monitoring location and monitoring parameter

    e. Actions to be undertaken in the event of trigger level exceedance. As a minimum this is to include monitoring requirements detailed in condition 36 below.

    f. Monitoring methodology

    g. A plan review process that includes Te Rūnanga o Ōtākou, the independent peer review panel, and Otago Regional Council.

    The plan must be submitted to the independent peer review panel no less than 3 months prior to the commencement of construction for certification that it addresses the requirements of this condition. The independent peer review panel shall communicate this certification to Otago Regional Council. Construction must not commence until Otago Regional Council has confirmed the requirements of the condition have been met. The certified plan must be implemented during the operation of the landfill.

35. Water quality trigger levels included in the Receiving Waters Environment Monitoring Plan must be developed for the indicated parameters set out in **Attachment 1** to detect leachate leakage effects on groundwater; and leachate, suspended solids, and turbidity on surface water quality, when monitored at the following locations:

    a. The monitoring wells described in condition 28.

    b. The groundwater collection system prior to discharge to the unnamed tributary of Ōtokia Creek, or abstraction for non-potable water supply.

    c. During stage 1 works, the sediment retention pond prior to discharge to the unnamed tributary of Ōtokia Creek. During subsequent stages, the attenuation basin prior to discharge to the unnamed tributary of Ōtokia Creek.

    d. The surface water monitoring points shown as SW1 – SW7 (and SW8 if access is available) on drawing 12506381-C309.

Commented [RvV46]: What are these?

Commented [RvV47]: What is that period?

Commented [RvV48]: What is the purpose of this report?

Commented [RvV49]: See first comment.

Commented [RvV50]: What does this mean?

Commented [RvV51]: What management system?

Commented [RvV52]: To achieve what?

Commented [RvV53]: Is this absolutely worded condition practical and achievable?

Commented [RvV54]: Which wetland?

Commented [RvV55]: Is the determination of these trigger levels detailed in another condition?

Commented [RvV56]: Are these actions specified in conditions?

Commented [RvV57]: Do you mean developed and included in the Plan?

Commented [RvV58]: Do the trigger levels relate to effects or do they mean that water quality is potentially being adversely affected and so further investigative and possibly remedial actions (in terms of reducing leachate contamination of receiving waters) is required?

Commented [RvV59]: Is that necessary – is the abstraction for non-potable supply affected the receiving environment?

The baseline water data collected under condition 29 and 30 must be used to establish trigger level values for the indicated parameters in **Attachment 1**. Development of trigger levels must meet the following requirements:

a. Establishment of levels for groundwater and surface water quality must use a trend analysis approach to ensure changing land use over time (forestry cycles), slow rate of change over time, and variability in baseline quality are accounted for.

b. Trigger levels for suspended sediments in surface water (SW1 – SW8) for typical flows must be the upper limit of turbidity values recorded during baseline monitoring or the Regional Plan for Otago: Water Schedule 15 turbidity limit, whichever is higher.

c. Trigger levels for suspended sediments in surface water (SW1 – SW8) for flood events (where out of channel flows occur), shall be based on visual inspection with no conspicuous adverse change in colour or visual clarity after reasonable mixing occurring in the receiving waters.

Commented [RvV60]: What does this mean? Defined where?

Commented [RvV61]: See first comment.

Commented [RvV62]: What does that mean?

Commented [RvV63]: What does this mean? Defined where?

Commented [RvV64]: So (b) is not based on trend analysis? Is that correct or appropriate?

Commented [RvV65]: Why is it necessary to monitor turbidity during flood events?

36. During operation of the landfill the monitoring of groundwater levels and quality, and surface water levels and quality outlined in the table below must occur and be assessed against the trigger levels established under condition 35, and the results reported annually to the Te Rūnanga o Ōtākou, the independent peer review panel and Otago Regional Council in accordance with condition 112. Where there is any exceedance of the water quality trigger levels caused by leachate or sediment, the specified actions must be implemented.

Monitoring Point as shown on drawing 2506381-C309	**Frequency**	**Parameters**	**Monitoring point and parameter specific actions where trigger levels are exceeded**	**Actions for all trigger level exceedances**
Sub-liner groundwater drainage system prior to discharge to the unnamed tributary of Ōtokia Creek or abstraction for non-potable water supply.	Continuous	• Electrical conductivity (uS/cm) • pH • Ammoniacal nitrogen (mg/L)	The manhole outlet from the groundwater collection system shall be closed immediately following any exceedance being detected, and groundwater redirected to the leachate collection system. Contaminated groundwater shall be directed to the leachate collection system for disposal off site until such time as the conditions have reduced below the trigger level or it can be demonstrated that the effects of discharging the water will not result in exceedance of surface water trigger levels for locations SW1 – SW7. An additional monitoring round will be undertaken no later than 1 week following any exceedance being detected and analysed for the full parameter suites outlined in **Attachment 1**.	An investigation is undertaken into potential causes. A report is provided to Te Rūnanga o Ōtākou, Otago Regional Council, and the independent peer review panel no later than 2 weeks following receipt of the additional monitoring round results. The report shall outline likely causes of exceedance, actions to be taken to prevent further trigger level exceedances and proposed follow up monitoring where necessary.
	Monthly	Basic suite of parameters set out in **Attachment 1** to be monitored, except that the full suite of parameters to be monitored in one monthly monitoring cycle per year		

Commented [RvV66]: Is this a condition?
Do all the actions clearly define who will do things and when they will be done by

Groundwater monitoring wells as GW1 – GW7 – and BH202	Quarterly.	Basic suite of parameters set out in **Attachment 1** and water level to be monitored, except that the full suite of parameters to be monitored in one quarterly monitoring cycle per year	An additional monitoring round will be undertaken no later than 1 week following any exceedance being detected and analysed for the full parameter suites outlined in **Attachment 1**.	
During stage 1 works, the sediment retention pond prior to discharge to the unnamed tributary of Ōtokia Creek During subsequent stages, the attenuation basin prior to discharge to the unnamed tributary of Ōtokia Creek.	Continuous (when flows occur)	• Electrical conductivity (uS/cm) • pH • Ammoniacal nitrogen (mg/L)	The outlet from the sediment retention pond or low flow outlet from the attenuation basin shall be closed immediately following any exceedance being detected in the event that leachate contaminated stormwater is flowing to the unnamed tributary of Ōtokia Creek. Contaminated stormwater shall be directed to the leachate collection system for disposal off site until such time as the conditions have reduced below the trigger level or it can be demonstrated that the effects of discharging the water will not result in exceedance of surface water trigger levels for locations SW1 – SW7. An additional monitoring round of the surface water monitoring points SW1 – SW7, and a sample from the sediment retention pond or attenuation basin, will be undertaken no later than 24 hours following any exceedance being detected and analysed for the full parameter suite outlined in **Attachment 1** for SW1 – SW7.	
Surface water monitoring points shown as SW1 – SW6, surface water monitoring point shown as SW7 (located at the	Either: Weekly (when flows occur). If continued periods of surface	Basic suite of parameters set out in **Attachment 1**to be monitored, except that the full suite of parameters to be monitored in one weekly	All known downstream surface water abstractors within the McColl Creek catchment, and Te Rūnanga o Ōtākou are notified of any exceedance no later than 1 day following the exceedance being detected.	

McLaren Gully Road culvert), and SW8 if access is available (located downstream of the downstream pond).	water discharge occur, then monitoring will occur weekly. Or: As otherwise specified in the Receiving Waters Environment Monitoring Plan.	monitoring cycle per year	An additional monitoring round will be undertaken no later than 1 week following any exceedance being detected and analysed for the full parameter suites outlined in **Attachment 1**.	
		• Suspended solids (g/L) • Turbidity (NTU)	Sediment controls shall be adjusted so that the site does not contribute a disproportionate sediment load downstream in comparison to the catchment above McLaren Gully Road.	

37. Continuous monitoring of the sub-liner groundwater drainage system, sediment retention pond for the stage 1 area, and attenuation basin under condition 36 must meet the following requirements:

    a. Continuous monitoring of electrical conductivity, pH, temperature, turbidity and ammonia must occur.

    b. The monitoring system must be configured so that exceedance of monitoring trigger levels activates an alarm notifying key site personnel.

    The Receiving Waters Environment Monitoring Plan must include response procedures in the event of an exceedance of trigger levels for continuous monitoring in condition 36. This must as a minimum include the relevant actions outlined in condition 37.

38. All groundwater and surface water sampling required under conditions 29 and 36 must meet the following requirements:

    a. Sampling must be undertaken at the specified locations indicated in conditions 29 and 36.

    b. Sampling must be undertaken, or overseen by, a suitably qualified professional and collected in accordance with the relevant National Environmental Monitoring Standard (NEMS):

        i. National Environmental Monitoring Standards Water Quality Part 1 of 4: Sampling, Measuring, Processing and Archiving of Discrete Groundwater Quality Data.

        ii. National Environmental Monitoring Standards Water Quality Part 2 of 4: Sampling, Measuring, Processing and Archiving of Discrete River Quality Data.

    c. All sample analysis carried must be performed by a laboratory that meets International Accreditation New Zealand ("IANZ") approved laboratory or otherwise as specifically certified by the independent peer review panel.

39. The construction and operation of the landfill must not cause after reasonable mixing there to be a conspicuous change in colour or visual clarity, objectionable odour, water unsuitable for consumption by

Commented [RvV67]: Instead phrase as must be undertaken by the consent holder for the following requirements?

Commented [RvV68]: How does this work for trigger levels based on trend analysis as described during the hearing by Mr Kirk?

Commented [RvV69]: 37 or 36?

Commented [RvV70]: See first comment.

farm animals, or significant effect on aquatic life in the Ōtokia Creek or any of its tributaries downstream of the discharge of stormwater from the landfill site.

Commented [RvV71]: Rather than parroting s107 should not the evidence demonstrate that these effects won't occur (otherwise we can't grant consent) and if the evidence shows that why have this condition?

Air Quality

40. Municipal Solid Waste must be accepted for disposal only if it has been transported to the landfill in sealed truck and trailer units or bins.

41. An automatic weather station must be maintained on site which records wind speed and direction, temperature, relative humidity, and rainfall.

42. No composting operation shall occur on the site.

43. To minimise odour emissions during handling of highly odorous wastes the following measures must be implemented:

    a. Highly odorous loads must only be received between the hours of 9.30am and 4.00pm.

    b. Deliveries of highly odorous wastes must be pre-booked, to ensure preparations are made including ensuring cover material is available at the pit location.

    c. Wastewater sludges, biosolids, and screenings must be treated with stabilised lime or an alternative that performs to an equivalent or higher standard of treatment for odour, prior to delivery to the site. Loads not complying must be refused entry and only accepted after treatment.

    d. Holding deliveries of unexpected highly odorous waste loads until preparations identified in (b) above are in place to enable disposal.

    e. Highly odorous wastes must be covered as soon as practicable and in any event not later than 30 minutes following placement.

    f. The landfill management plan required by condition 113 must include specific procedures for the pre-acceptance, handling, and placement of highly odorous wastes, including contingency measures in the event of an unexpected highly odorous waste load. This must include as minimum requirements for prioritising the placement of highly odorous waste, covering of waste as required by condition 43(e), using special odorous waste placement areas that maximise separation distances to receptors, and the use of odour suppressing sprays/cannons. Procedures for managing highly odorous waste must not conflict with any bird management procedures contained in the Landfill Operational Bird Management Plan under condition 78.

Commented [RvV72]: Defined where?

Commented [RvV73]: How will that be assessed?

Commented [RvV74]: Who holds them? Where are they held?

Commented [RvV75]: Shouldn't this be sorted out now so that there is no conflict?

    For the purposes of this condition, "highly odorous wastes" include, but are not limited to:

    a. Wastewater treatment sludges, biosolids, screenings.

    b. Wastewater pump station screenings, grits.

    c. Animal remains.

    d. Waste from meat processes.

    e. Woolscour, tannery, fellmongery waste.

    f. Fish waste.

44. All waste must at least be covered at the end of each working day with:

    a. non-combustible compacted soil cover to a minimum depth of 150 millimetres; or

    b. non-combustible alternative materials that perform to an equivalent or higher standard to 150 millimetres soil cover.

45. No waste shall remain exposed overnight.

46. All areas where further waste will not be placed for three months, must be covered with non-combustible compacted intermediate soil cover to a minimum depth of 300 millimetres. Grass cover must be established by hydroseed, except where within 10m of the active landfilling area.

47. Leachate conveyance and storage facilities must be sealed to minimise odour.

48. There must be no noxious, dangerous, offensive or objectionable odour or dust to the extent that it causes an adverse effect at or beyond the boundary of the site.

49. The landfill must be designed, progressively constructed, and operated with a:

    a. Landfill liner to reduce fugitive subsurface emissions of landfill gas, and which meets the minimum requirements of the WasteMINZ *Technical Guidelines for Disposal to Land 2018* for a class 1 landfill.

    b. Leachate collection system to remove leachate from the landfill, and which meets the minimum requirements of the WasteMINZ *Technical Guidelines for Disposal to Land 2018* for a class 1 landfill, and provides leachate pumping systems in accordance with relevant standards in relation to landfill gas (e.g. *AS/NZS 2381.1.1:2005*).

    c. Landfill gas collection and destruction system suitable for the anticipated rate and quantity of landfill gas emitted by the landfill, which addresses the risks identified by the Landfill Gas Risk Assessment (LFGRA) in condition 56 or 57 below and meets the minimum requirements of the WasteMINZ *Technical Guidelines for Disposal to Land 2018* for a class 1 landfill, and Resource Management (National Environmental Standards for Air Quality) Regulations 2004.

50. The landfill gas collection and destruction system shall be designed, constructed, operated, and maintained to minimise potential oxygen ingress into the landfill waste and optimise the rate of extraction of landfill gas.

51. All extracted landfill gas must be combusted in a flare(s) which meets the following requirements:

    a. A principal flare(s) that has been designed, installed, operated and maintained in accordance with the requirements of Regulations 25, 26 and 27 of the Resource Management (National Environmental Standards for Air Quality) Regulations 2004.

    b. Subject to the requirements of Condition 51(a), the principal flare(s) must be operated at all times unless it has malfunctioned or is shut down for maintenance.

    c. A backup landfill gas flare(s) that meets the requirements of Regulation 27(3) of the Resource Management (National Environmental Standards for Air Quality) Regulations 2004 must be operated if the principal flare is not operating.

52. The landfill gas collection and destruction system must be restored as soon as practicable in the event of a malfunction or fault.

53. On-site standby electrical supply must be provided to ensure the operation of landfill gas flare equipment is not interrupted through loss of mains power supply.

54. A landfill gas monitoring bore network must be installed around the perimeter of the landfill at least 12 months prior to waste being accepted to enable the collection of baseline data, and detection of landfill gas escaping laterally from the landfill and identify its location, and which meets the minimum requirements of the EPA Victoria (2015) Best Practice Environmental Management guidelines.

55. Monitoring of gas emissions from the landfill gas monitoring bore network must commence at least 12 months prior to waste being accepted to establish background ground gas data and inform the Landfill Gas Risk Assessment (LFGRA), and the development of monitoring trigger levels. Sampling of landfill gas must occur monthly for the 12-month monitoring period for the full suite of parameters set out in **Attachment 2**.

Commented [RvV76]: Are sentences one and two conjunctive?

Commented [RvV77]: Or to avoid / minimise the discharge of odour?

Commented [RvV78]: This clause (b) should be in a section specifying liner requirements as recommended by Mr Kirk during the hearing.

Commented [RvV79]: Which sections of those guidelines?

Commented [RvV80]: How does this work if monitoring occurs before waste is accepted to the site. No waste = no landfill gas?

56. At the conclusion of the monitoring period identified in condition 55, a detailed Landfill Gas Risk Assessment (LFGRA) must be completed to confirm:

    a. Potential landfill gas related risks at the site, including potential sources of landfill gas, emission pathways, receptors of emissions from the site.

    b. Locations, parameters, and frequencies for LFG monitoring, including any amendments required to the monitoring bore network.

    c. LFG management measures.

    The detailed LFGRA should further consider / investigate organic mudstone / lignite as a potential source of ground gas at the site. The LFGRA along with the monitoring results for the entire monitoring period must be provided to the independent peer review panel, prior to the development of trigger levels under condition 60.

57. The LFGRA required under condition 56 must be reviewed and updated at least every 5 years, or more regularly if new receptors are identified, waste tonnages increase beyond those anticipated, or monitoring of LFG in accordance with condition 60 identifies LFG emissions beyond those anticipated.

58. Where the LFGRA identifies the need for amendments to the monitoring bore network, including any additional bores, those amendments shall be made in advance of waste being accepted, or within 6 months following completion of any updated LFGRA.

59. Following the reporting of monitoring results and the completion of the LFGRA under conditions 56 or 57, monitoring trigger levels must be developed to achieve the following objectives:

    a. Ensure LFG controls are adequate and being operated and maintained to ensure effective operation.

    b. Identify potential escape of fugitive LFG to the environment at or near source to confirm the efficacy of the management system or need for remedial actions.

    c. Protection of the health and safety of people on and beyond the site who may be at risk of being exposed to LFG emissions.

    d. Minimise the risk of landfill fires and identify fires.

    Tigger levels must be developed for at least those parameters in **Attachment 2** relevant to detect landfill gas escape, when monitored at the following locations:

    a. The landfill gas monitoring bore network.

    b. Areas of intermediate cover

    c. Within buildings and structures, and sub-surface pits

    d. The surface of the final landfill cap.

    Best practice guidance and the baseline gas data collected under condition 55, and the LFGRA under conditions 56 or 57 must be used to establish typical ranges for each parameter and establish trigger values for these ranges. Proposed trigger levels must be provided to the independent peer review panel for certification that they are suitable to detect landfill gas at least 3 months in advance of waste being accepted or at least 3 months following completion of any updated LFGRA. The independent peer review panel must communicate this certification to Otago Regional Council. Waste must not be accepted until Otago Regional Council has confirmed the requirements of the condition have been met.

60. During operation of the landfill, landfill gas concentrations must be measured at least monthly in each of the perimeter monitoring bores, and at least every 3 months at areas of intermediate cover, within buildings, structures, and sub-surface pits, and the surface of the final landfill cap, and assessed against the trigger levels established under condition 59 and reported to the independent peer review panel and Otago

Commented [RvV81]: Should or must?

Commented [RvV82]: What does that mean?

Commented [RvV83]: Where is that defined?

Commented [RvV84]: Where is that defined?

Commented [RvV85]: How does that work?

Commented [RvV86]: Operation of what?

Commented [RvV87]: What is intermediate cover? How will that monitoring occur?

Commented [RvV88]: Which documents / guidelines are being referred to here?

Commented [RvV89]: But won't the LFG be collected and flared?

Regional Council. Where there is any exceedance, an investigation must be undertaken into potential causes. A report must be provided to Te Rūnanga o Ōtākou, the independent peer review panel and Otago Regional Council no later than 2 weeks after any exceedance is detected outlining likely causes of the exceedance, detailed actions to be taken to prevent further trigger level exceedances, and proposed follow up monitoring.

61. During operation of the landfill, a walkover site inspection must be undertaken at least monthly by the landfill operator. Any evidence of actual or potential landfill gas leaks, odour, cracks in the landfill surface, gas bubbles, leaks in the gas extraction system, or vegetation damage, must be investigated. Remedial action must be undertaken as soon as practicable where necessary to minimise fugitive emissions.

62. A final capping layer must be constructed as each stage of the landfill is completed. The final cover layer must comprise the following minimum layers, from bottom to top;

    a. 600 millimetres of compacted cohesive soils with a permeability coefficient of not more than 1×10^{-7} metres per second; and

    b. 300mm growth media layer; and

    c. 150 millimetres of topsoil (grassed, except where within 10m of the active landfilling area).

Ecology

63. There must be no clearance of indigenous vegetation, earthworks, or landfill operations in West Gullies 1, 2, 3, and 4, the Swamp Wetland, downstream Valley Floor Marsh Wetland and/or intermittent or perennial streams as identified in the *Smooth Hill Landfill, Ecological Impact Assessment Prepared for Dunedin City Council, 19 August 2020 (updated 28 May 2021)* prepared by Boffa Miskell. This does not apply to activities carried out during implementation of a certified Restoration Management Plan or Freshwater and Wetland Monitoring and Management Plan and prepared in accordance with Conditions 69 and 71.

64. The area directly impacted by construction and operation of the landfill must be limited to and not exceed 3.15 ha of (Yorkshire Fog) – Cocksfoot Grassland areas as set out in *Smooth Hill Landfill, Ecological Impact Assessment Prepared for Dunedin City Council, 19 August 2020 (updated 28 May 2021),* prepared by Boffa Miskell.

65. Adverse effects associated with construction and/or operational activities on freshwater, terrestrial and wetland ecology must be appropriately managed according to the management plans required by conditions 66, 67, and 71. Where there are residual adverse effects, offset or compensation must use methodologies that are transparent, logical and use accepted ecological principles to derive the related offset / compensation type and quantum.

66. An Eastern Falcon Management Plan based on the *Draft Smooth Hill Falcon Management Plan* prepared by Boffa Miskell Ltd, dated June 2021, must be prepared by a suitably qualified ornithologist to ensure any adverse effects on any New Zealand Eastern falcons nesting at the site during construction are effectively avoided or otherwise managed following the effects management hierarchy. The plan must be developed in consultation with Te Rūnanga o Ōtākou.

    As a minimum the plan must include:

    a. A summary of the impact assessment for Eastern Falcon.

    b. Detail of onsite surveys that have been undertaken to inform the Eastern Falcon Management Plan.

Commented [RvV90]: Of the trigger levels?

Commented [RvV91]: See first comment

Commented [RvV92]: See first comment

Commented [RvV93]: See first comment

Commented [RvV94]: What are these? Need to relate them to consented activities.

Commented [RvV95]: Which conditions require offsetting or compensation?

Commented [RvV96]: Why not refer to established guideline documents specifying how to work out offsets? But, why is this condition required if all "offsetting' is now volunteered on an Augier basis? Why not just document the offsetting that will be undertaken in a condition and have the relevant management plan address how that will be done (namely the operational details of establishing and maintaining the offset revegetation and habitat enhancement)

Commented [RvV97]: See first comment.
Is this condition required on the ORC consents?
Should it instead be part of the designation Outline Plan? If so, offer a condition to that effect, absent the detail included here?

c. Avoid, remedy, and/or mitigation measures to reduce the effects on Eastern Falcon during construction, and any appropriate methodologies as described under condition 65 for offsetting or compensating for any residual adverse effects if they are identified through monitoring.

d. Pre and during construction monitoring methodologies.

e. Provision that if mortality of nesting falcon (including nest contents) occurs on site during project-related construction works that can be attributed to the construction works, it would trigger an immediate review of the plan and a suitable remedial, offset or compensatory action will be determined by a suitably qualified and experienced ornithologist and implemented to account for the loss/es. This action will be discussed with Te Rūnanga o Ōtākou and the peer review panel prior to implementation.

f. Annual reporting requirements, which will include, but not be limited to reporting on the avoid, remedy and /or mitigation measures used to reduce effects on Eastern falcon during construction as well as any remedial, offset or compensatory actions undertaken.

g. Key responsibilities of onsite personnel.

h. An adaptive management and review process that includes Te Rūnanga o Ōtākou, the independent peer review panel, and Otago Regional Council.

The plan must be submitted to the independent peer review panel no less than 3 months prior to commencement of construction for certification that it addresses the requirements of this condition. The independent peer review panel must communicate this certification to Otago Regional Council. Construction must not commence until Otago Regional Council has confirmed the requirements of the condition have been met. The certified plan is to be implemented for the duration of any landfill construction works.

67. A Lizard Management Plan based on the *Draft Smooth Hill Lizard Management Plan* prepared by Boffa Miskell Ltd, dated June 2021 must be prepared by a suitably qualified herpetologist to ensure any adverse effects to lizards during construction are effectively avoided or otherwise managed following the effects management hierarchy. The plan must be developed in consultation with Te Rūnanga o Ōtākou and the Department of Conservation following their guidelines for lizard salvage and transfer in New Zealand. As a minimum the plan must include:

a. A revision of the lizard values onsite through a desktop assessment and on-site survey.

b. A summary of the impact assessment for lizards.

c. Detail of onsite surveys that have been undertaken to inform the Lizard Management Plan.

d. Avoid, remedy, and mitigation methodologies including salvage and relocation, and any predator control, and habitat enhancement measures undertaken in accordance with condition 69 and 71 to reduce the effects on lizards during construction.

e. Any appropriate methodologies as described under condition 65 for offsetting or compensating for any residual adverse effects if they are identified through monitoring.

f. Pre and during construction monitoring methodologies, including any post release monitoring.

g. Annual reporting requirements, which will include, but not be limited to reporting on the avoid, remedy and /or mitigation measures used to reduce effects on lizards during construction as well as any remedial, offset or compensatory actions undertaken.

h. Key responsibilities of onsite personnel.

Commented [RvV98]: See first comment.
Is this condition required on the ORC consents?
Should it instead be part of the designation Outline Plan? If so, offer a condition to that effect, absent the detail included here?

i. An adaptive management and review process that includes Te Rūnanga o Ōtākou, the independent peer review panel, and Otago Regional Council.

The plan must be submitted to the independent peer review panel no less than 12 months prior to commencement of construction for certification that it addresses the requirements of this condition. The independent peer review panel must communicate this certification to Otago Regional Council. Construction must not commence until Otago Regional Council has confirmed the requirements of the condition have been met. The certified plan is to be implemented for the duration of any landfill construction works.

68. Annual baseline wetland ecology monitoring must be undertaken by a suitably qualified wetland ecologist and must commence no less than 36 months prior to construction of the landfill and preparation of the Vegetation Restoration Management Plan under condition 69. The purpose of the monitoring is to:

a. Determine the extent of existing wetland habitat and indigenous plant values within wetland areas in West Gully 3, West Gully 4, and the swamp wetland as identified in the *Smooth Hill Landfill, Ecological Impact Assessment Prepared for Dunedin City Council, 19 August 2020 (updated 28 May 2021)* prepared by Boffa Miskell.

b. Establish a baseline with which to compare to any monitoring of ecological conditions during construction and operation of the landfill.

c. To assess the impact of the construction and operation of the landfill on downstream wetlands and indigenous species, to ensure residual or ongoing adverse effects are effectively remedied or otherwise managed.

To define wetland extent, vegetation transects using national wetland delineation protocols (e.g., Clarkson et al. 2013) must be carried out in a cross-section of wetland areas at the WT1, WT2-4, WT5, and WT6 locations shown on drawing 12506381-C309. 12-monthly monitoring must be undertaken between November and April at least three times prior to the commencement of landfill construction. These cross sections must occur at the same location as baseline water level monitoring sites.

At the conclusion of the 36-month monitoring period, the baseline data must be reviewed and used to inform the Vegetation Restoration Management Plan required under condition 69, which will detail monitoring triggers and requirements of any long-term ecological monitoring.

69. A Vegetation Restoration Management Plan based on the Draft Smooth Hill Vegetation Restoration Plan prepared by Boffa Miskell Ltd, dated June 2021, must be prepared by a suitably qualified ecologist to address the loss of or impact to, wetland and terrestrial environments caused as a result of the exercise of this consent to achieve no net loss of habitat / features in terms of type, amount, or condition. The plan must be developed in consultation with Te Rūnanga o Ōtākou.

As a minimum the plan must include:

a. A summary of the impact assessment for wetland, and terrestrial environments.

b. A summary of baseline wetland ecology monitoring that has been undertaken to inform the Vegetation Restoration Management Plan under condition 68.

c. Wetland restoration measures, which as a minimum must include:

i. Wetland restoration that not only includes the area of wetland to be restored itself, but also a 10 m buffer from the wetland edge, other than where the landfill toe bund is within 10 m of the wetland edge.

Commented [RvV99]: See first comment.
Why are these gullies referred to in the ORC consents? Should they instead be part of the designation Outline Plan? If so, offer a condition to that effect, absent the detail included here?

Commented [RvV100]: See first comment.

Commented [RvV101]: See first comment

Commented [RvV102]: What species – flora or fauna?

Commented [RvV103]: What do you mean by residual effects?

Commented [RvV104]: Should this be limited to the 'swamp wetland'?

Commented [RvV105]: See first comment
Should it instead be part of the designation Outline Plan? If so, offer a condition to that effect, absent the detail included here?

Commented [RvV106]: Should this be limited to the 'swamp wetland'?

Commented [RvV107]: See first comment

Commented [RvV108]: Should i, ii and iv be actual consent conditions

ii. Stock exclusion from any restoration area using permanent fencing including gates for access.

iii. Pest plant control methods, including types of pest plant species to be controlled, areas in which they are to be controlled (including targets to be met), and in which areas or circumstances gorse (or another specified plant pest) may be tolerated as a nurse crop.

iv. Pest animal control, including annual performance pest animal targets for the site using standardised Department of Conservation residual trap catch, tracking tunnel or chew card indices.

v. A process for reviewing and adapting pest plant and animal controls in the event that the performance targets are not achieved over two consecutive years. This review process must include Te Rūnanga o Ōtākou, the independent peer review panel, and Otago Regional Council.

vi. Ground preparation, planting and maintenance specifications. All plants used for restoration must be eco-sourced from the same eco-region and be free of pest plants. Plant size and densities must be relevant to the location of where they are being placed and restoration outcomes.

vii. A detailed programme of works.

viii. Standardised methodologies for onsite biosecurity control (bring onto site / onsite / taking off site).

ix. Long term success-based monitoring at year 0, 1, 3, 5, 10, 15, 25 and 30. Monitoring must be based on performance standards that at a minimum must include measures of restoration planting success in terms of survival and growth.

d. Key responsibilities of onsite personnel.

e. An adaptive management and review process that includes Te Rūnanga o Ōtākou, the independent peer review panel, and Otago Regional Council.

The plan must be certified by a suitably qualified expert in bird strike risk assessment that any proposals for restoration will not increase aviation risk from birds.

Following certification, the plan must be submitted to the independent peer review panel no less than 3 months prior to commencement of construction for their certification that it addresses the requirements of this condition. The independent peer review panel must communicate this certification to Otago Regional Council. Construction must not commence until Otago Regional Council has confirmed the requirements of the condition have been met. The certified plan is to be implemented during the construction of the landfill and road upgrades, and operation of the landfill.

70. Twice yearly freshwater ecology monitoring by a suitably qualified freshwater ecologist must commence no less than 36 months prior to construction of the landfill and prior to the preparation of the Freshwater and Wetland Monitoring and Management Plan under condition 71. The purpose of the monitoring is to:

a. Determine the extent of existing freshwater habitat and the freshwater ecology values, including macroinvertebrate and fish communities, and how these may vary naturally seasonally and in response to the changes in the surrounding land use.

b. Establish a baseline with which to compare to any monitoring of ecological conditions during construction and operation of the landfill.

Commented [RvV109]: See first comment

Commented [RvV110]: Hasn't this already been done and presented in evidence?

c. To assess the impact of the construction and operation of the landfill on the downstream freshwater environment and indigenous species, to ensure residual or ongoing adverse effects are effectively remedied or otherwise managed.

The freshwater ecology monitoring must be carried out at the SW3, SW7, and SW8 (if access is available) locations shown on drawing 12506381-C309. Sampling must be undertaken during the months between December and April. These freshwater ecology monitoring sites must occur at the same location as baseline water level and quality monitoring sites.

Monitoring methods must include assessments of in-stream habitat conditions closely following national protocols (e.g., Biggs and Kilory, 2000; Clapcott et al., 2011; Harding et al., 2009), sampling of the macroinvertebrate community in accordance with protocols C1 and/or C2 of Stark et al. (2001) and Joy et al. 2013, and assessment of the fish community in following protocols of Joy et al. 2013 and/or using passive sampler devices for environmental DNA (e.g., following standard protocol of Wilderlab).

At the conclusion of the 36-month monitoring period, the baseline data must be reviewed and used to inform the Freshwater and Wetland Monitoring and Management Plan required under condition 71, which will detail monitoring triggers and requirements of any long-term ecological monitoring.

71. A Freshwater and Wetland Monitoring and Management Plan must be prepared by a suitably qualified freshwater and wetland ecologist(s) to ensure and adverse effects to freshwater or wetland environments or indigenous species that arise from the exercise of this consent are effectively remedied or otherwise managed following the effects management hierarchy. The plan must be developed in consultation with Te Rūnanga o Ōtākou. As a minimum the plan must include:

a. A summary of the impact (direct and indirect) assessment for surface water bodies and wetlands.

b. A summary of the baseline wetland monitoring freshwater ecology monitoring undertaken to inform the Freshwater and Wetland Management Plan under conditions 68 and 70.

c. A summary of the ongoing monitoring of groundwater and surface water quality and quantity as detailed by the Receiving Waters Environment Monitoring Plan.

d. Pre, during and post construction monitoring methodologies with the aim of establishing any indirect effects on down catchment freshwater and wetland environments These must include performance standards in relation to baseline wetland extent and relative cover within the wetlands of indigenous wetland plant species. Monitoring may include monitoring of freshwater habitat conditions, and freshwater macroinvertebrate and fish communities in response to triggers developed as determined by the baseline monitoring data collected and the monitoring detailed in the Receiving Waters Environment Monitoring Plan.

e. Avoid, remedy, and/or mitigation measures to reduce the effects on downstream freshwater and wetland environments during landfill construction and operation, and any appropriate methodologies as described under condition 65 for offsetting or compensating for any residual adverse effects if they are identified through monitoring.

f. Annual reporting requirements, which will include, but not be limited to reporting on avoid, remedy, and mitigation measures used to reduce effects on downstream freshwater and wetland environments during landfill construction and operation, as well as any remedial, offset or compensatory actions undertaken.

g.

h. Key responsibilities of onsite personnel.

Commented [RvV111]: See first comment

Commented [RvV112]: Instead, should the condition 70 monitoring be undertaken to assess if there is an adverse effect on 'freshwater ecology' (which would need to be defined in terms of species and locations) and if there are adverse effects then an investigation would be undertaken to determine if the adverse effects are attributable to consented landfill discharges and if so then develop suitable 'offset and compensation" measures if the contaminated landfill discharge cannot be ceased or reduced to a suitable level. Condition 71 appears to presume there will be more than minor adverse effects whereas the applicant's evidence is that there will not be any such effects?

Commented [RvV113]: See first comment

Commented [RvV114]: What might these be?

Commented [RvV115]: See first comment

i. An adaptive management and review process that includes Te Rūnanga o Ōtākou, the independent peer review panel, and Otago Regional Council.

The plan must be certified by a suitably qualified expert in bird strike risk assessment that any proposals for restoration will not increase aviation risk from birds.

Following certification, the plan must be submitted to the independent peer review panel no less than 3 months prior to commencement of construction for their certification that it addresses the requirements of this condition. The independent peer review panel must communicate this certification to Otago Regional Council. Construction must not commence until Otago Regional Council has confirmed the requirements of the condition have been met. The certified plan is to be implemented during the construction of the landfill and road upgrades, and operation of the landfill.

72. A Plant and Animal Pest Control Programme must be prepared prior to the commencement of construction, to ensure adverse effects on vegetation, avifauna, and herpetofauna from exotic pest plant species, and mammalian pests (rodents and mustelids) due to construction and operation of the landfill operation are minimised. The plan must be developed in consultation with Te Rūnanga o Ōtākou. The programme must be provided to the independent peer review panel at least 3 months prior to construction for certification that it addresses the requirements of this condition. The independent peer review panel must communicate this certification to Otago Regional Council. Construction must not commence until Otago Regional Council has confirmed the requirements of the condition have been met. The plan is to be implemented during construction and operation of the landfill.

Commented [RvV116]: If this is an Augier condition it should be included in a suite of conditions that sets out the Augier "vegetation / wetland" enhancement that is still being offered.

Bird Management

73. Smooth Hill landfill must not be available to the general public for the disposal of waste. Waste must be consolidated off-site prior to transport in bulk to Smooth Hill landfill.

74. Food and garden organic waste streams must be collected and processed separately and off site to minimise disposal of this material at Smooth Hill landfill.

75. To the extent practicable, residual putrescible waste must be removed from the general waste stream and processed separately prior to transfer and final disposal of general waste at Smooth Hill landfill. To achieve this the consent holder must implement the methodology set out in **Attachment 3**.

76. The attenuation basin must be covered with a net or an array of closely spaced wires to prevent the basin attracting birds.

77. Monthly bird monitoring by a suitably qualified ornithologist over at least a 12-month period must occur prior to the preparation of the Landfill Operational Bird Management Plan under condition 78. The purpose of the monitoring is to:

a. Determine the year-round behaviour patterns of key bird species and their populations in the Dunedin area, especially black-backed gulls.

b. Determine how black-backed gulls and other species, respond to management initiatives at Green Island Landfill leading up to its closure to organic waste.

c. Establish a baseline estimate of risk at and around Dunedin Airport through structured regular surveys that allow risk assessment models to be updated.

The bird monitoring must be conducted in accordance with the methods in the *Draft Smooth Hill Bird Management Plan prepared by Boffa Miskell Ltd and Avisure, dated June 2021,* and *Smooth Hill Preliminary Bird Hazard Assessment, Aviesure, May 2021*, and include:

Commented [RvV117]: How does this relate to existing and yet to be completed bird monitoring that was explained by Mr Shaw at the hearing? Is this that monitoring or some different monitoring?

Commented [RvV118]: Means what?

Commented [RvV119]: How does this relate to existing and yet to be completed the bird monitoring that was explained by Mr Shaw at the hearing? Is this that monitoring or some different monitoring?

a. On airport surveys at Dunedin International Airport.

b. Off-airport surveys at three locations in close proximity to Dunedin Airport.

c. Green Island landfill surveys.

d. Pre-development Smooth Hill landfill surveys

The bird monitoring must inform the updated risk assessment under condition 77(d).

78. A Landfill Operational Bird Management Plan, that adopts the *Draft Smooth Hill Bird Management Plan* prepared by Boffa Miskell Ltd and Avisure, dated June 2021, must be prepared by a suitably qualified person to address the management of birds to ensure that aviation risk is kept at an acceptably low level. The plan must be developed in consultation with Dunedin International Airport Limited and Te Rūnanga o Ōtākou. As a minimum the plan must include:

a. Birds are managed to ensure that operations including wetland restoration do not increase aviation risk in accordance with a Landfill Operational Bird Management Plan.

b. A summary from a New Zealand perspective covering the attraction of birds to landfills and bird strike risk with aircraft.

c. Details of the baseline bird monitoring undertaken under Condition 77 across all seasons, updated information on what the waste stream will consist of, and how it will be handled, and a review of key factors contributing to the low bird numbers at Kate Valley.

d. An updated bird strike risk assessment based on the information obtained under condition 78(c).

e. All of the recommendations from the Preliminary Bird Hazard Assessment undertaken by Avisure, dated May 2021, or any alternative and/or additional recommendations contained in the updated risk assessment required by condition 78(d).

f. Detailed operational procedures, including for reducing putrescible/organic waste, daily cover of waste, minimising the extent of the active landfilling area, minimising open earthworks and pools of water, and reducing barren areas.

g. Bird species greater than 50 g that must be managed to zero densities daily.

h. Detailed bird deterrence and control methods, including triggers and management actions in accordance with condition 80.

i. Training and key bird management responsibilities of onsite personnel including the appointment of a Bird Control Officer.

j. Liaison with and sharing of information with Dunedin International Airport Limited on bird management in accordance with conditions 7, 79 - 83, and 112.

k. Maintenance of Landfill Operational Bird Management registers in accordance with Condition 79.

l. A bird monitoring regime which enables comparisons to be made between the baseline (pre-operation) bird monitoring under condition 77 to assess aviation strike risk and success of bird management at the landfill.

m. An adaptive management and review process in accordance with conditions 82 - 83

The plan must be provided to Dunedin International Airport Limited for review and feedback, before being submitted to the independent peer review panel no less than 3 months prior to commencement of construction for certification that it addresses the requirements of this condition. The independent peer review panel shall communicate this certification to Otago Regional Council and Dunedin International Airport Limited. Construction must not commence until Otago Regional Council has confirmed the

Commented [RvV120]: Can conditions apply to third party land?

Commented [RvV121]: Can conditions apply to third party land?

Commented [RvV122]: Do we need this Plan, or should conditions 79 and 80 simply codify the monitoring and escalating bird control measures that must be taken? What use will the Plan be if conditions 79 and 80 are diligently implemented?

Commented [RvV123]: What does that mean?

Commented [RvV124]: Defined where?

Commented [RvV125]: Or instead "increase risk beyond the level of existing risk at DIAL" as set out in the evidence of Mr Shaw?

Commented [RvV126]: What is the purpose of doing that?

Commented [RvV127]: Updated from what?

Commented [RvV128]: Where is that information required to be obtained?

requirements of the condition have been met. The certified plan must be implemented during the operation of the landfill.

79. The following bird registers shall be maintained on site and updated daily during operation of the landfill:

a. The number of black-backed gulls observed at the site.

b. The number of black-backed gulls killed by shooting.

c. The number of black-backed gulls killed by poison.

d. The number of bird species (and abundances of each species) with an individual body weight exceeding 50 g (as per condition 78(g) these species will be listed in the Landfill Operational Bird Management Plan).

e. The number and date of bird threshold trigger breaches with condition 80.

f. The date/s bird control measures in condition 80 are implemented and the duration of implementation.

g. A success register that documents how effective bird control measures are / were.

h. Sightings of falcon at or near the landfill (this will help inform if it is appropriate to use falcon decoys as a potential bird control option).

The registers must be provided monthly to the independent peer review panel and Dunedin International Airport Limited.

Commented [RvV129]: What does that mean? What will determine 'effectiveness'?

80. Where the bird registers in Condition 79 record the presence of any bird species with an individual body weight exceeding 50 g (as per condition 78(g) these species will be listed in the Landfill Operational Bird Management Plan), the following actions must be undertaken. Once remediation is undertaken and trigger levels are complied with, the consent holder may de-escalate management actions to the lowest compliant level.

Commented [RvV130]: This doesn't seem to accord with the evidence of Mr Shaw who said that bird numbers would be assessed daily and escalating remedial measures employed instantly.

Trigger level	**Management Action**
Where at any time there are less than 20 individuals with a typical adult body mass greater than 50 g.	Implementation of the landfill operational procedures set out in the Landfill Operational Bird Management Plan. Implementation of bird deterrence and control measures, including: a. Dispersal of birds from the active landfilling area. b. Anti-roosting strips on structures.
Where at any time there are more than 20 individuals with a typical adult body mass greater than 50 g.	In addition to the above, implementation of lethal bird control measures, including: a. Shooting b. Poisoning c. Colony control Notify Dunedin International Airport within 24 hours.
Where the lethal bird control measures above are unsuccessful and at any time there are more than 20	In addition to the above, implementation of additional bird deterrence and control measures, including:

Commented [RvV131]: Why wait 24 hours?

individuals from a species greater than 50 g, or combined numbers of these species exceeds 100 individuals.	a. Installation of wires above the active landfilling area. b. Bailing waste Notify Dunedin International Airport within 24 hours
Where there are more than 12 breaches of the threshold above in any 12-month period	Installation of a bird exclusion net over the active landfilling area. For remaining landfill area, implementation of the landfill operational procedures set out in the Landfill Operational Bird Management Plan. Notify Dunedin International Airport within 24 hours

81. An annual risk assessment must be completed by a suitably qualified expert in bird strike risk assessments to determine the contribution of the consented activity to bird strike risk, taking into account the results of bird monitoring required by condition 78(ll).

The risk assessment is to consider the following:

a. Species (behaviour, mass, tendency to flock or roost communally);

b. Land use / activity type

c. Location relative to Dunedin Airport and the approach / departure paths.

d. Location relative to nearby land uses that may also attract, or have the potential to attract, birds.

e. Species strike risk based on Dunedin Airport strike data.

The annual risk assessment must be provided to the independent peer review panel and Dunedin International Airport Limited and used to inform reviews of the Landfill Operational Bird Management Plan under Conditions 82 and 83.

82. The consent holder must establish a Bird Management Operational Group comprising the consent holder, Dunedin International Airport Limited, and the landfill operator (if any) to meet twice during the first year of operation, and annually thereafter, to review the effectiveness of the Landfill Operational Bird Management Plan, for the purposes of considering:

a) whether there is a need escalate the management actions outlined in condition 80 sooner than required by the trigger levels.

b) whether any improvements are required to the Landfill Operational Bird Management Plan.

Any member of the Bird Management Operational Group may call an urgent meeting to address an aviation bird hazard issue in connection with the operation of the landfill.

The Bird Management Operational Group may require the consent holder to escalate the management actions in condition 80 to address the identified aviation bird hazard issue whether or not the trigger levels are exceeded.

83. Following any meeting under condition 81 the consent holder must (if necessary) update the Landfill Operational Bird Management Plan. The updated plan must be provided to Dunedin International Airport Limited for review and feedback, before being submitted to the independent peer review panel for certification that it addresses the management of birds to ensure that aviation risk is kept at an acceptably low level. The independent peer review panel shall communicate this certification to Otago Regional Council and Dunedin International Airport Limited. The certified plan must be implemented during the operation of the landfill.

Commented [RvV132]: Should also refer to the effectiveness of the Condition 80 measures?

Commented [RvV133]: Must also include ORC? Mr Shaw also referred to including DOC?

Commented [RvV134]: We can't condition third parties. Consent holder could invite parties to join this Group.

Commented [RvV135]: Or the effectiveness of conditions 79 and 80?

Commented [RvV136]: Only ORC can require such things?

Commented [RvV137]: Should this condition be rewritten to say that the consent holder will undertake the "Dunedin wide" SBBG gull number reduction actions referred to by Mr Shaw and set out a process for establishing this Group to assist with the undertaking of those actions?

Landscape and Visual Effects

84. All screen planting along the boundary with Big Stone Road, and along the north-eastern edge of the landfill facilities area must be planted as part of the initial landfill construction works in accordance with the *Landscape Mitigation Plan, Boffa Miskell Limited, 29 April 2022*, and must be in place prior to the first waste being accepted.

85. All planting required by condition 84, must be maintained, and any dead trees and vegetation must be replaced by an equivalent species within the next planting season.

Archaeology

86. Prior to the commencement of construction of the landfill, a 10m buffer zone and temporary site fencing must be established around the standing structures at archaeological sites I4571 and I45/72 under the direction of the archaeologist.

87. Every practical effort must be made to avoid damage to any archaeological site, whether known, or discovered during the construction of the landfill and road upgrade works.

88. Prior to the commencement of the construction of the landfill and road upgrade works, an archaeological site briefing must be delivered to all contractors undertaking earthworks that may affect archaeology. The briefing must outline:

    a. The history of the site and its archaeological potential.

    b. The standing archaeological remains to be retained.

    c. The role of the archaeologist and requirements for archaeological involvement.

    d. What sort of archaeological features could be expected and what they might look like.

    e. What to do if a possible archaeological site is found and the archaeologist is not on site.

    f. The process required to record and investigate these archaeological deposits should any be discovered.

    a.

Waste Acceptance

89. An appropriately experienced person must be retained to supervise the operation of the landfill.

90. Waste deliveries must only be received at the landfill between the hours of:

    a. Monday to Saturday 8.00am – 5.30pm.

    b. Sunday 9.00am – 5.30pm.

    Waste deliveries must not be received at the landfill on Easter Friday, Christmas Day, New Year's Day, and the morning of Anzac Day (until 1pm).

91. Waste must only be discharged onto, or into, land within the landfill liner extent shown on drawing 12506381-01-C201.

92. Waste must only be delivered by commercial waste transporters and the Council who hold a valid Waste Acceptance Agreement confirming the material meets the waste acceptance criteria in the consent conditions.

93. No waste, other than municipal solid waste (MSW) and hazardous wastes that meet the Ministry for the Environment Module 2: Hazardous Waste Guidelines – Class A shall be accepted for disposal.

Commented [RvV138]: See first comment.
Why are these effects referred to in the ORC consents? Should they instead be part of the designation Outline Plan? If so, offer a condition to that effect, absent the detail included here?

Commented [RvV139]: See first comment.
Why are these effects referred to in the ORC consents? Should they instead be part of the designation Outline Plan? If so, offer a condition to that effect, absent the detail included here?

Commented [RvV140]: Which council?

Commented [RvV141]: What is that? Where is it defined?

94. Disposal of medical wastes must be in accordance with NZS4304:2002 Healthcare Waste Management or subsequent amendments, and disposal of asbestos in accordance with the Asbestos Regulations 1998 or subsequent amendments.

95. The following wastes must not be accepted for disposal:

    c. Liquid waste.

    d. Wastes or substances classified as explosive, flammable, oxidising or corrosive under the Hazardous Substances and New Organisms Act 1996.

    e. Waste marked with an asterisk on the NZ Waste List (L Code), except solid wastes that meet the leachability limits in the Ministry for the Environment Module 2: Hazardous Waste Guidelines – Class A; asbestos labelled, packaged, and disposed of in accordance with the Asbestos Regulations 1998; and small quantities of waste containing potentially hazardous components that can be reasonably expected to be contained in the municipal waste stream.

96 A notice must be placed at the landfill entrance which identifies the wastes that are unacceptable at the landfill.

97 Random inspections of incoming loads for the presence of hazardous waste must be undertaken at a minimum rate of 1 in 50 loads and tipping of all waste must be supervised.

98 Records must be maintained of the quantities and types of waste accepted, and load inspections, and provided annually to the independent peer review panel and Otago Regional Council.

99 Otago Regional Council must be immediately notified if any waste delivery vehicle is turned away from the landfill that contains waste that does not comply with the waste acceptance criteria in the consent conditions.

Landfill Fire Prevention and Response

100. The active landfilling area must not exceed 1000m^2 and on any day when practical it must be reduced in size to not greater than 300m^2.

101. The active landfilling area must not exceed 300 m^2 when local fire danger rating is high or extreme.

102. No burning must occur anywhere on the landfill site, and combustible materials must not be stockpiled over the landfill footprint.

103. The active landfilling area must be under observation or surveillance at all times during the operating hours.

104. All waste must at least be covered at the end of each working day with:

    a. non-combustible compacted soil cover to a minimum depth of 150 millimetres; or

    b. non-combustible materials that perform to an equivalent or higher standard to 150 millimetres soil cover.

105. No waste shall remain exposed overnight.

106. All areas where further waste will not be placed for three months, must be covered with non-combustible compacted intermediate soil cover to a minimum depth of 300 millimetres. Grass cover must be established by hydroseed, except where within 10m of the active landfilling area.

107. Final capping areas must not be revegetated within 10m of the active landfilling area.

108. A minimum stockpile of 1500m^3 of inert cover material must be maintained adjacent to the landfill stage in operation for fire response.

Commented [RvV142]: What sort of inspections?

Commented [RvV143]: By whom?

Commented [RvV144]: And rejected?

Commented [RvV145]: Are any of these conditions duplicated elsewhere? If so, why?

Commented [RvV146]: What does that mean? What would trigger it exceeding 300m^2?

Commented [RvV147]: What does local mean?

Commented [RvV148]: By whom?

Commented [RvV149]: Are the two sentences conjunctive.

109. A minimum fire water supply of 400m^3 be maintained on the site, with 200m^3 each located near the main site entrance and emergency entrance respectively.

110. A Fire Preparedness and Response Plan must be prepared by a suitably qualified person to ensure risk of landfill fires is prevented as far as practicable, and any fires are promptly detected and responded to. The plan must be developed in consultation with Fire and Emergency New Zealand (FENZ). As a minimum the plan must include:

c. Description of key site features, the scale and type of landfilling operations, operating hours, and normal on-site workforce, after hours arrangements, potential fire ignition risks.

d. Fire prevention measures to be implemented to prevent fires from igniting in the landfill and any other areas of the site.

e. Fire detection procedures to be implemented during operating hours and afterhours, and reporting and notification procedures to emergency services, neighbours, and regulators.

f. Fire risk mitigation and readiness features, including:

i. Site access road network.

ii. Main and emergency entrance gate locations.

iii. Water source locations and details of water access for fire response.

iv. Landfill cover procedures and how they serve to mitigate fire risk (and any variations to these in particular circumstances).

v. Soil cover supply available for fire response.

vi. Perimeter and other fire break locations and specifications.

vii. On-site command point for control and coordination of any fire response operations.

viii. On-site equipment types, capabilities, and availability for fire response.

ix. Readiness requirements for after-hours response.

g. Fire response procedures to be implemented, including:

i. Fire response organisation, including persons responsible for manging the response, operating on-site equipment to be used, and arrangements for control transfer and support when emergency services arrive at the site.

ii. Operating procedure for fire response.

iii. Operating procedures for ensuring personnel, equipment and the site are safe in the event of a spreading fire.

iv. Any triggers and procedures for clearing the site of personnel not needed for response.

v. Procedures for monitoring and reporting smoke and fumes from fires.

vi. Procedures for residual fire risk monitoring after the fire is reported as contained or extinguished.

h. Incident reporting and cause investigation protocol.

i. Protocol for review and evaluation of fire causes, effectiveness of fire prevention, detection mitigation and response measures, and process for continuous improvement, including conducting regular simulated fire drills.

j. External notification protocols.

k. Response and notifications contact details directory.

l. A plan review process that includes FENZ, the independent peer review panel, and Otago Regional Council.

The plan must be submitted to the independent peer review panel no less than 3 months prior to the commencement of construction for certification that it addresses the requirements of this condition. The independent peer review panel shall communicate this certification to Otago Regional Council. Construction must not commence until Otago Regional Council has confirmed the requirements of the condition have been met. The certified plan must be implemented during the operation of the landfill.

Complaints

111 A Complaints Log must be maintained during construction and operation of the landfill and road upgrades to record the receipt and management of all complaints, including those regarding objectionable or offensive odour or dust. The following details must be recorded:

a. Type, date, and time of complaint.

b. Name and address of complainant (if available).

c. Location from which the complaint arose.

d. Wind direction at the time of complaint (if relevant)

e. The likely cause of the complaint.

f. The action taken as a result of the complaint.

g. The feedback to the complainant.

The Complaints Log must be made available to the independent peer review panel, and Otago Regional Council on request.

Annual Monitoring Report

112The landfill operator must compile an annual monitoring report on the operation of the landfill, including:

a. the status of landfilling operations on the site and work completed during the preceding year;

b. any problems, which have arisen in the preceding year and measures taken to address those;

c. activities proposed for the next year of the landfill operation;

d. collated summaries and analyses of all monitoring and other data required under these consents.

e. how the operator is able to be satisfied that the proportion of putrescible material received at the landfill is in accordance with the methodology in **Attachment 3**.

The report must be forwarded to Te Rūnanga o Ōtākou, independent peer review panel, Dunedin International Airport Limited and to the Otago Regional Council by the 31st of December each year unless otherwise agreed in writing. The consent holder must make the report publicly available on its website.

C. Landfill Management Plan (LMP)

113. The detailed design, construction, and operation of the landfill must be in accordance with the provisions of a Landfill Management Plan (LMP), based on the *Draft Smooth Hill Landfill Management Plan* prepared by Boffa Miskell Ltd, dated May 2021, and developed in consultation with Te Rūnanga o Ōtākou. The LMP must be provided to the independent peer review panel for certification that it addresses the requirements of this condition at least 3 months prior to construction commencing. The independent peer review panel

Commented [RvV150]: See first comment

Commented [RvV151]: See first comment

Commented [RvV152]: Should be consent holder

Commented [RvV153]: What does that mean?

Commented [RvV154]: What sort of work?

Commented [RvV155]: What sort of problems?

Commented [RvV156]: What sort of activities?

Commented [RvV157]: This condition needs to be redrafted to separate out matters that should be in enforceable conditions and process matters that describe how those conditions will be implemented / achieved. Matters that should be in conditions are prefaced (first word) in green wash.
However, in most cases the wording will need to be amended to comply with the normal conventions for conditions (clear, certain, enforceable) and to avoid overlap with existing conditions and to avoid overlap with specified contents of other management plans.

must communicate this certification to Otago Regional Council. Construction must not commence until Otago Regional Council has confirmed the requirements of the condition have been met.

The LMP must incorporate the following specific management plans required by this consent, including:

a. Receiving Waters Environment Management Plan.

b. Landfill Operational Bird Management Plan.

c. Fire Preparedness and Response Plan.

d. Eastern Falcon Management Plan.

e. Lizard Management Plan.

f. Vegetation Restoration Management Plan.

g. Freshwater and Wetland Monitoring and Management Plan.

The LMP must include procedures, including monitoring and contingency actions, to ensure the detailed design, construction, operation, and aftercare of the landfill results in compliance with the conditions of these consents, and achieves the following objectives:

General:

a. Operate the landfill in compliance with the resource consent requirements.

b. Appropriately trained staff are retained to operate the landfill.

c. The landfill is constructed and operated safely in a way that prevents harm to self, other workers, and the public, and meets obligations under Health and Safety regulations.

d. Ensure landfill incidents including any escape of leachate or other contaminants, release of hazardous substances, or other event are promptly detected and remedied to protect the receiving environment and surrounding properties.

e. Ensure infrastructure failure or damage, including that caused by extreme events such as weather and earthquakes, are promptly detected and remedied to ensure its operation, and to protect the receiving environment.

f. Te Rūnanga o Ōtākou is provided with the opportunity to undertake monitoring alongside specialists undertaking landfill monitoring activities.

Construction management and quality assurance:

a. Landfill design and construction activities are undertaken in accordance with applicable New Zealand Standards relating to landfill construction (including geotechnical, lining system and drainage standards).

b. Earthwork materials are placed as controlled engineered fill in accordance with good earthworks practices and under strict quality construction control and assurance procedures.

c. Landfill elements (liner, cover, leachate, and LFG systems) are designed and constructed to at least the minimum thicknesses and standards recommended in WasteMINZ guidance for a Class 1 landfill facility.

d. Hours of construction of the landfill are managed to minimise disruption to neighbours in the surrounding area.

Land stability:

a. Seismic risks for the stability of the landfill are minimised.

b. Risks of slope failure for the landfill are minimised.

Commented [RvV158]: These management plans (if they are actually required) should all have their own conditions that set out the matters that need to be included in management plan conditions. Refer to the Chair's initial comment to counsel about management plans.

As can be seen from the amount of 'green wash' below, it may not be necessary to require much additional detail in the LMP if all of these discrete management plans are properly conditioned and compiled into a single LMP 'folder'.

Commented [RvV159]: Shouldn't those actions already be specified in proceeding conditions and so can just be crossed -referred to?

Commented [RvV160]: See first comment

Commented [RvV161]: That is a mandatory legal obligation and doesn't need to be in a management plan?

Commented [RvV162]: What does that mean?

Commented [RvV163]: See first comment.

Commented [RvV164]: The actual monitoring programmes that Te Runanga wish to be part of should be specified.
Will Te Runanga be remunerated for their monitoring?

Commented [RvV165]: What are these standards – name them and specify the particular relevant sections of these standards that relate to the consents required from ORC

Commented [RvV166]: See first comment

Commented [RvV167]: What are these standards – list them or cross-refer to them

Commented [RvV168]: See first comment.
Also Unnecessary – hours of operation should be specified in conditions.

c. The landfill base grade, toe embankment, and completed surface slopes are stable during landfill development and in the long term.

d. Placement of waste in the landfill ensures waste and landfill stability.

Groundwater and surface water:

a. Control groundwater beneath the landfill liner through the installation and operation of a groundwater collection system.

b. The ingress of stormwater into open and closed sections of the landfill is minimised.

c. Minimise the volume of leachate that is produced.

d. Leachate is managed and contained within the landfill footprint through the use of a high performance landfill liner, and leachate collection and storage system, that minimises migration into the underlying soil, groundwater, and surface water.

e. The risks of excessive liner hydration are minimised.

f. Protection of the landfill liner from waste tipping and compaction activity.

g. Safe disposal of leachate off site.

h. Leachate transport occurs with an incident contingency plan which meets the Ministry of the Environment Code of Practice for Transport of Hazardous and Liquid Waste.

i. Stormwater that comes into contact with waste is directed to the leachate collection system.

j. Land disturbance activities are to be undertaken in a manner that minimises sediment generation.

k. Sediment runoff from the site is effectively controlled so that that site does not contribute a disproportionate sediment load downstream in comparison to the catchment above McLaren Gully Road.

l. Any spills of fuels, hazardous substances, or other contaminants are promptly contained and remediated.

m. Monitoring wells are regularly maintained to prevent the ingress of contaminants and protected to ensure physical damage to the wells does not occur.

n. Erosion and cracking of the landfill cap is minimised.

Air quality:

a. As small as practicable active landfilling area is maintained to minimise odour.

b. Potentially highly odorous waste deliveries are identified prior to disposal.

c. All waste is covered with appropriate daily and intermediate cover material to minimise odour.

d. Adequate water supply for dust suppression is maintained.

e. Control odours and dust so that there is no odour or particulate matter that causes an objectionable effect at or beyond the boundary of the site.

f. Contain, capture, and control landfill gas through the progressive installation, operation, and maintenance of a landfill gas collection system in the landfilled waste.

g. Optimise the overall quantity of landfill gas collected from the deposited waste to minimise fugitive emissions and landfill gas related odour.

h. The destruction of recovered landfill gas by flaring.

i. Comply with the landfill gas related requirements of the NES Air Quality and recommendations of the WasteMINZ Guidelines and the Ambient Air Quality Guidelines.

Commented [RvV169]: See first comment

Commented [RvV170]: See first comment

Commented [RvV171]: How will this be achieved?

Commented [RvV172]: What does that mean. Refer to discussion in hearing whereby conditions need to specify type of liner with a process identified to opt for an alternative liner.

Commented [RvV173]: What is that?

Commented [RvV174]: Conditions need to specify what level of hydration is acceptable and the LFM should set out how that is to be achieved.

Commented [RvV175]: See first comment

Commented [RvV176]: What does that mean?

Commented [RvV177]: What does that mean?

Commented [RvV178]: How?

Commented [RvV179]: What does that mean? How will that be achieved?

j. The escape of fugitive landfill gas is minimised.

k. Erosion and cracking of the landfill cap is minimised.

l. Ensure the health and safety of people on and beyond the site who may be at risk of being exposed to landfill gas emissions by addressing the prioritised risks identified by the Landfill Gas Risk Assessment (LFGRA).

Terrestrial and freshwater ecology:

a. Prevent clearance of indigenous vegetation and wetlands, and vehicle and machinery movements in areas of indigenous vegetation and wetlands outside the landfill operational footprint.

b. Disturbance of nesting eastern falcons are avoided or otherwise managed in accordance with an Eastern Falcon Management Plan.

c. Effects to lizards during construction are effectively avoided or otherwise managed in accordance with a Lizard Management Plan.

d. Loss or impacts to wetland and terrestrial environments are remedied or otherwise managed in accordance with a Vegetation Restoration Management Plan to achieve+ no net loss of habitat / features in terms of type, amount, or condition.

e. Residual or ongoing adverse effects to any freshwater or wetland environment or indigenous species that arise from the exercise of this consent are effectively remedied or otherwise managed in accordance with a Freshwater and Wetland Monitoring and Management Plan.

g. Weed encroachment into indigenous vegetation communities, and populations of animal pests within the site are kept to below current levels in accordance with a Plant and Animal Pest Control Programme.

Landscape

a. Landscape and visual amenity effects from the landfill are minimised through perimeter planting of appropriate species.

Archaeology

a. The construction of the landfill is managed to ensure that known and unknown archaeological values are retained where possible, or otherwise appropriately recorded.

Landfill access:

a. Provide safe all-weather access to the site, and landfill for placement of waste.

b. The landfill site is securely fenced, and gates closed outside of opening hours.

c. Allow only authorised and appropriately site-inducted (or supervised) workers, inspectors or visitors onto the landfill site.

d. Traffic to, from, and within the landfill site is managed to minimise disruption on the surrounding transport network, residents, neighbours, landowners and road users as much as practicable.

e. Ensure heavy vehicles associated with the landfill use the State Highway 1 – McLaren Gully Road – Big Stone Road route, unless a hazard is present on this route which renders it inoperable.

Waste acceptance:

a. All landfill users are aware of the Waste Acceptance Criteria and acceptance procedures.

b. All waste received complies with the Waste Acceptance Criteria specified in the consent conditions.

c. Prevent the disposal of hazardous waste that does not comply with the Waste Acceptance Criteria specified in the consent conditions.

Commented [RvV180]: Note Mr Welsh has now recommended a Landfill Gas Management Plan which should cover all of these preceding land fill gas matters.

Commented [RvV181]: See first comment

Commented [RvV182]: See first comment

Commented [RvV183]: See first comment

Commented [RvV184]: Redundant clause – repeats earlier conditions?

Commented [RvV185]: See first comment

Commented [RvV186]: See first comment

Commented [RvV187]: None of these matters appear relevant to the ORC consents?

Commented [RvV188]: Duplicates DCC landuse consent?

Commented [RvV189]: See fist comment

Commented [RvV190]: See first comment

Commented [RvV191]: See first comment

Commented [RvV192]: See first comment

d. Ensure best practice management for the handling, storage and disposal of waste and hazardous materials.

e. Accurate records of all waste accepted at the landfill, load inspections, and disposal locations are maintained.

f. All waste being transported to the landfill is securely contained to prevent the escape of solid material or liquid from the vehicle.

Placing of refuse:

a. Placement of waste in the landfill ensures waste and landfill stability.

b. Protection of the landfill liner from waste tipping and compaction activity.

c. A small as practicable working active landfilling area is maintained.

d. Minimise odour, birds, pests and litter.

Fire prevention and response:

a. Risk of landfill fires are prevented as far as practicable, and any fires are promptly detected and responded to.

Bird Management

e. Birds are managed to ensure that operations including wetland restoration do not increase aviation risk in accordance with a Landfill Operational Bird Management Plan.

Noise:

b. Noise from the landfill site complies with the designation conditions and is minimised where practicable.

General amenity and public health and safety:

a. Ensure the health and safety of people on and beyond the site.

b. Prevent windblown litter outside the site boundaries.

c. Clear areas of illegal dumping outside the site.

d. Maintain a clean and tidy site.

e. Prevent the establishment of vermin and nuisance insect populations.

Communications and complaints:

a. Members of the public can contact the landfill operator at all times in relation to the construction and operation of the landfill, and in the case of emergency.

b. Maintain a complaints management, investigation, and reporting system.

c. All complaints received in relation to the landfill must be investigated and responded to promptly, including investigations into whether any improvements to the operations of the landfill should be made.

114 The landfill must be operated at all times in accordance with the current provisions of the LMP.

115 The consent holder must annually complete a review of the LMP in consultation with Te Rūnanga o Ōtākou and the independent peer review panel to ensure that management practices result in compliance with the conditions of these consents. Any proposed revisions must be forwarded to the independent peer review panel for certification. The independent peer review panel must communicate this certification to Otago Regional Council.

Commented [RvV193]: What does that mean? Where is that 'best practice' defined?

Commented [RvV194]: See first comment

Commented [RvV195]: See fist comment

Commented [RvV196]: Also collect windblown litter from roads and neighbouring properties?

Commented [RvV197]: See first comment – noise is not an ORC function outside of the CMA

Commented [RvV198]: See first comment

Commented [RvV199]: See first comment

D. Advice Notes

a. *For the purposes of this consent 'site' means the landfill site as described in section 4.1 of Application RM20.280 – Assessment of Environmental Effects (updated May 2021).*

b. *For the purpose of this consent, the term 'stormwater' means water running off from any impervious surface such as roads, carparks, roofs, as well as any other surface run-off that is collected and/or intercepted.*

c. *For the purposes of this consent 'active landfilling area' means the area of exposed waste.*

d. *The function of the independent peer review panel is not a substitute of Otago Regional Council's function in auditing compliance with consent conditions. Otago Regional Council will make the ultimate determination regarding whether the Consent Holder has achieved compliance with the conditions of this* consent, even if this is inconsistent with the opinion of the peer review panel.

ATTACHMENT 1 TO OTAGO REGIONAL COUNCIL RESOURCE CONSENTS FOR DISCHARGES TO WATER

Table 1 below sets out the monitoring parameters to detect leachate leakage effects on groundwater quality; and leachate, suspended solids, and turbidity on surface water when monitored at the following locations in accordance with condition 36:

a. The groundwater monitoring wells described in condition 29.

b. The groundwater collection system prior to discharge to the unnamed tributary of Ōtokia Creek, or abstraction for non-potable water supply.

c. During stage 1 works, the sediment retention pond for stage 1 prior to discharge to the unnamed tributary of Ōtokia Creek. During subsequent stages, the attenuation basin prior to discharge to the unnamed tributary of Ōtokia Creek.

d. The surface water monitoring points shown as SW1 – SW7 (and SW8 if access is available) on drawing 12506381-C309 or as otherwise specified in the Receiving Waters Environment Monitoring Plan.

Basic and full suite parameters and trigger levels to be monitored at each location are identified with a "X" in the table. Trigger levels for each parameter are to be established in accordance with conditions 36.

For groundwater samples all metal, metalloid and trace element parameters are the dissolved fraction of water sample only. For surface water and stormwater samples all metal, metalloid and trace element parameters are both dissolved fraction and total fraction of water sample.

Where automated monitoring of water quality is specified within the Receiving Waters Environment Monitoring Plan as an alternative method for surface water monitoring, the monitoring and trigger level parameters will be specified within the Receiving Waters Environment Monitoring Plan.

Table 1 – Water Quality Monitoring Parameters

	Monitoring Location							
	GW monitoring Bores GW1-GW7, BH202 and Groundwater collection system prior to discharge to the unnamed tributary of Ōtokia Creek			**Sediment Retention Pond for Stage 1 and groundwater collection system prior to discharge to the unnamed tributary of Ōtokia Creek**		**Surface Water monitoring points SW1 - SW8**		
Parameter (mg/L unless stated otherwise)	**Basic Suite**	**Full Suite**	**Trigger level**	**Continuous Monitoring**	**Trigger level**	**Basic Suite**	**Full Suite**	**Trigger level**
Aluminium		X					X	
Arsenic	X	X	X			X	X	X

Boron		X	X				X	X
Cadmium	X	X	X			X	X	X
Calcium	X	X					X	
Chloride	X	X					X	
Chromium		X	X				X	X
Copper	X	X	X			X	X	X
Iron	X	X				X	X	
Lead	X	X	X			X	X	X
Magnesium	X	X					X	
Manganese		X					X	
Nickel	X	X	X			X	X	X
Potassium	X	X					X	
Sodium	X	X					X	
Sulphate	X	X	X				X	
Zinc	X	X	X			X	X	X
Dissolved Reactive Phosphorus		X	X				X	X
Total Phosphorous							X	X
Ammoniacal Nitrogen	X	X	X	X	X	X	X	X
Kjeldahl Nitrogen	X	X				X	X	
Nitrite Nitrogen	x	x				x	x	x
Nitrate Nitrogen	X	X				X	X	X
Alkalinity	X	X	X			X	X	
Organic Carbon		X						

Total Volatile organic compounds		X	X				X	X
Total Semi-volatile organic compounds		X	X				X	X
PFOS + PFHxS		X					X	
PFOA		X					X	
pH (ph units)	X	X		X	X	X	X	X
Temperature (degrees Celsius)	X	X				X	X	
Electrical conductivity (µS/cm)	X	X		X	X	X	X	
Water Level (m RL)	X	X				X	X	
Flow rate (l/s)						X	X	
Suspended solids							X	X
Turbidity (NTU)							X	X

ATTACHMENT 2 TO OTAGO REGIONAL COUNCIL RESOURCE CONSENTS FOR DISCHARGES TO AIR

Table 2 below sets out the monitoring parameters to detect detect landfill gas escape, when monitored at the following locations in accordance with condition 60:

a. The landfill gas monitoring bore network.

b. Areas of intermediate cover

c. Within buildings and structures, and sub-surface pits

d. The surface of the final landfill cap.

Parameters and trigger levels to be monitored at each location are identified with a "X" in the table. Trigger levels for each parameter are to be established in accordance with condition 59.

Table 2 – Landfill Gas Monitoring Parameters

	Monitoring Location			
Parameter	**The landfill gas monitoring bore network**	**Areas of intermediate cover**	**Within buildings and structures, and sub-surface pits**	**The surface of the final landfill cap**
Gas flowrate (litres/hour)	X			
Methane (%v/v)	X	X	X	X
Oxygen (%v/v)	X			
Carbon dioxide (%v/v)	X			
Carbon monoxide (ppm)	X			
Hydrogen sulphide (ppm)	X			
Residual nitrogen (%v/v), calculated as the balance of methane, oxygen, carbon dioxide, carbon monoxide, and hydrogen sulphide.	X			
Ambient temperature (^{O}C)	X			
Gas pressure (mb)	X			
Barometric pressure (mb)	X			

ATTACHMENT 3 – RESIDUAL PUTRESCIBLE WASTE SEPERATION METHODOLOGY

Overview

1. As part of the 10 year plan 2021-31 Dunedin City Council adopted a new kerbside collection system consisting of:
    a. Fortnightly 45L glass bin;
    b. Fortnightly 80 or 240L mixed recycling bin;
    c. Fortnightly 80 or 140L general waste bin;
    d. Weekly 23L food waste bin; and
    e. Fortnightly 240L garden waste bin (optional).

2. Providing residents with options for the collection of both food and garden waste, separated from collections for general waste, will significantly reduce the amount of putrescible waste contained in the general waste stream. Additional measures (described below) will be implemented to further remove putrescible waste contamination from the general waste stream.

3. Alongside the adoption of a new kerbside collection system Council also resolved to fund construction of the following waste diversion facilities to support the new services:
    a. Organics Processing Facility (OPF);
    b. Material Recovery facility (MRF);
    c. Construction and Demolition Recovery Facility (CDRF); and
    d. Bulk Waste Transfer Station (BWTS).

4. The new kerbside collection system is due to be implemented 1 July 2023.

Commented [RvV200]: None of this 'Overview' constitutes a condition. Perhaps it could be included in the LMP under suitable heading?

Methodology

Residual putrescible waste will be removed from the general waste stream and processed separately prior to transfer and final disposal of general waste at Smooth Hill landfill, with the goal that putrescible waste will initially make up less than 10% of the waste going to Smooth Hill, reducing to 5% over time. The process for removing putrescible waste from the general waste stream has three components set out below.

1. Removal of putrescible waste from the general waste stream at source:

    a. The contract for kerbside collection services includes three additional Full Time Equivalent positions to support Council's education and enforcement activities. These positions are:
        i. One Education Facilitator; and
        ii. Two Contamination Inspectors

    These roles will be dedicated to the reduction of contamination in kerbside bins presented for collection.

    b. The Contamination Inspectors will audit kerbside bins in advance of the collection vehicles and identify bins with high levels of contamination. These bins will not be collected, and education material will be left for the householder;
    c. A 'three strike' system will be used to remove services from households that continually present highly contaminated bins for collection;
    d. The Education Facilitator will continually evaluate the results of the kerbside bin audits and will also monitor contamination levels in waste loads at the OPF and MRF. The information collected will be used to work alongside Council to develop education campaigns aimed at reducing contamination by targeting specific materials, or targeting specific areas of Dunedin for kerbside audits.

2. Removal of putrescible waste from the general waste stream at BWTS:

Commented [RvV201]: All of this 'Methodology' text is the sort of text that should be included in the LMP to set out how conditions requiring the minimisation of putrescible waste and conditions specifying the disposal of contaminated wastes will be achieved. Remember management plans set out how conditions will be implemented / achieved (or set out a process for that that will be achieved) rather than setting out limits, standards or requirements.

a. There will be no public access for waste disposal at Smooth Hill landfill;
b. All general waste from all sources (Council collections, commercial, and general public) will be deposited at the BWTS prior to consolidation and transfer to Smooth Hill;
c. At the BWTS all general waste will be deposited on the 'tipping floor' prior to consolidation and transfer into bulk transfer containers via mechanical handlers;
d. Staff monitoring the tipping floor will identify any highly contaminated waste prior to consolidation and:
    i. Remove contamination and divert it to the OPF where possible; or
    ii. If contamination cannot be removed, these loads will be quarantined for separate disposal in accordance with the disposal procedures described in the Special Disposal Procedure for contaminated wastes set out below.

3. Removal of putrescible contamination from OPF and MRF:

    a. Organics entering the OPF may be contaminated with general waste, meaning it would be unable to be processed at the OPF.
    b. Recycling entering the MRF could be contaminated with organics, meaning it would be unable to be processed at the MRF.
    c. In both cases above the organics containing contaminated waste will be screened to separate the organic contaminated waste prior to processing; and
    d. The separated organic contaminated waste will be quarantined for disposal in accordance with the disposal procedures described in Special Disposal Procedure for contaminated wastes.

Special Disposal Procedure for contaminated wastes

1. Quarantined waste from the BWTS, OPF and MRF will be transported to the Smooth Hill landfill in sealed truck and trailer units or bins.
2. Deliveries of quarantined waste will be pre-booked, to ensure preparations are made including ensuring cover material is available at the tipface disposal location.
3. Deliveries of quarantined wastes will be covered immediately and prioritised for disposal ahead of more general waste and loads.