# Section 32 Evaluation Report for the Proposed Otago Land and Water Regional Plan

## Chapter 10: Contaminated Land

**This Section 32 Evaluation Report should be read together with the Proposed Otago Land and Water Regional Plan**

Otago Regional Council

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# Abbreviations

| | |
|---|---|
| FMU | Freshwater Management Unit |
| HSW Act | Health and Safety at Work Act 2015 |
| NES | National Environmental Standard |
| NESCS | National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health 2011 |
| NOF | National Objectives Framework |
| NPS | National Policy Statement |
| NPSFM | National Policy Statement for Freshwater Management 2020 |
| ORPS | Otago Regional Policy Statement 2019 |
| pORPS | Proposed Otago Regional Policy Statement 2021 |
| pLWRP | Proposed Otago Land and Water Regional Plan 2024 |
| RPS | Regional Policy Statement |
| RMA | Resource Management Act 1991 |
| SQEP | Suitably qualifed and experienced practitioner |

# Contaminated Land [CL] - Assessment of Provisions

## 1. Introduction

1. This chapter of the pLWRP seeks to manage the current environmental effects of historic practices that have led to land contamination. The Contaminated Land – CL chapter manages the passive discharges from contaminated land and the potential discharges associated with undertaking site investigations. These are classified as the following three areas for management:

    a. Site investigations;

    b. Discharges from contaminated land; and

    c. Discharges from closed landfills.

2. Discharges from operating landfills and other waste disposal activities are covered in the WASTE chapter.

3. As is the case across much of New Zealand, the past use and storage of hazardous substances has left a legacy of land contamination throughout Otago that can have adverse effects on fresh water. This legacy has largely been caused by historic practices in which chemicals were manufactured, used, stored, and disposed of in ways that are considered unacceptable by today's standards.

4. Contaminated sites are often associated with industrial activities, but commercial, agricultural, and residential land use activities can also result in contamination. Examples of past and present activities include[1]:

    a. Manufacture and use of pesticides – these activities have resulted in contamination at locations where pesticides were manufactured as well as the wider contamination associated with the use of the chemicals (eg, agrichemical sprays).

    b. Production of gas and coal products – includes old gasworks sites located in most towns and cities.

    c. Production, storage and use of petroleum products – contamination has occurred from leaking fuel storage facilities at tank farms and service stations.

    d. Historic mining – usually associated with metals leaching from old tailings dams and mine shafts.

    e. Timber treatment – pentachlorophenol (PCP) was one of a number of chemical formulations used routinely at most sawmills and timber treatment plants from the 1950s until 1988, when its use ceased.

    f. Sheep dipping – from use of DDT, dieldrin, arsenic and other chemicals to treat parasites on sheep. Old sheep dips can be located on farms with a history of sheep farming, as well as on public land used at the time as stockyards and railway sidings.

[1] Many of these activities – for example, the use of dieldrin in sheep dips and to kill insects in the 1940s to the 1960s – were not considered to be hazardous at the time.

5. Under the RMA, contaminated land is land with hazardous substances in or on it that has or is reasonably likely to have significant adverse effects on the environment.[2]

6. Site investigations are one of the first steps in contaminated land management; they are required for a variety of regulatory purposes, including determining whether the risk posed by contaminants is acceptable and the assessment of potential environmental effects of site contamination. Several types of site investigation exist, with differing levels of sampling required, ranging from desktop studies to more intrusive ground truthing investigations. Conceptual site models are produced allowing landholders and practitioners to describe the contaminant source, potential exposure pathways, and receptors. This provides decision makers with the information to better manage contaminated sites for ecological and human health.

7. A series of national guideline documents developed by the Ministry for the Environment establish best practice for evaluations of activities in relation to contaminated land. Most relevant to site investigations is the Guidelines for Reporting on Contaminated Sites (Ministry for the Environment, 2021a) and the Site Investigation and Analysis of Soils Management Guidelines (Ministry for the Environment, 2021c). Any sampling associated with site investigations is required to be performed by a suitably qualifed and experienced practitioner (SQEP) with extensive and relevant expertise (Ministry for the Environment, 2021c) and reported on appropriatley (Ministry for the Environment, 2021a). This essential activity is now highly controlled and considered to be of relativley low risk to the environment when undertaken in accordance with these guidelines.

8. Areas where historic land use activities have resulted in land contamination need careful management to prevent further adverse environmental effects from occurring, which may be in the form of discharge control or remediation of sites. Discharges may occur from the disturbance of, and associated discharge of contaminants in soil, or passive discharges from contaminated sites. Many (but nowhere near all) of Otago's contaminated land sites are identified in the Hazardous Industries and Land (HAIL) Register for the Otago Region[3], a list of activities and industries that may have involved the use of hazardous substances.

9. Table 1 below provides an overview of the number of identified contaminated sites by territorial authority in Otago as of August 2024, with over half of all the verified and unverified HAIL sites across the region present within the Dunedin City Council boundaries.

*Table 1: Number of verified and unverified HAIL sites by territorial authority (as of August 2024)*

| Territorial authority | Verified HAIL sites | Unverified HAIL sites | Total sites |
|---|---|---|---|
| Dunedin City Council | 1,382 | 82 | **1,464** |
| Queenstown-Lakes District Council | 278 | 58 | **336** |
| Central Otago District Council | 228 | 42 | **270** |
| Waitaki District Council | 170 | 62 | **232** |

[2] Section 2, RMA.

[3] Otago's HAIL register is available from the following website: https://orc-spatial-data-portal-orcnz.hub.arcgis.com/items/9e9528380f7e45169ac8c206f85d5dd5

| | | | |
|---|---|---|---|
| Clutha District Council | 151 | 9 | **139** |
| **Total sites** | **2,209** | **253** | **2,462** |

10. Table 2 below provides a summary of the ten most common category of HAIL across the Otago region. A single HAIL site may contain multiple activities/industries listed in the HAIL database. Although not exhaustive, the categories identified make up approximately 90% of all HAIL sites registered in the region as of August 2024.

*Table 2: HAIL categories (MfE with the highest number of verified and unverified HAIL sites in Otago (as of August 2024)*

| **HAIL Category (MfE 2011)** | **Verified HAIL status** | **Unverified HAIL status** | **Total** |
|---|---|---|---|
| F4: Motor vehicle workshops | 403 | 126 | 529 |
| A17: Storage tanks or drums for fuel, chemicals or liquid waste' | 401 | 172 | 573 |
| G3: Landfill sites | 338 | 79 | 417 |
| A1: Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application | 219 | 210 | 429 |
| F7: Service stations including retail or commercial refuelling facilities | 214 | 94 | 308 |
| A10: Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds' | 171 | 56 | 227 |
| I: Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment | 148 | 99 | 247 |
| D5 - D5: Engineering workshops with metal fabrication | 144 | 66 | 210 |
| G4 - G4: Scrap yards including automotive dismantling, wrecking or scrap metal yards | 118 | 42 | 160 |
| A18: Wood treatment or preservation including the commercial use of anti-sapstain chemicals during milling, or bulk storage of treated timber outside | 90 | 30 | 120 |
| **Total** | **2,246** | **974** | **3,220** |

11. Given that these sites are contaminated already, the framework within the CL-chapter seeks to ensure effective management that minimises further contamination and adverse effects from occurring. In many cases, verification and tracking of HAIL status, and leaving the contaminated site undisturbed will be the most appropriate option, whilst in some cases remediation may be necessary to reduce or avoid environmental impacts.

12. The relevant provisions for this section are:

a. CL – Contaminated Land Chapter

i. Objectives: CL-O1;

ii. Policies: CL-P1 to CL-P4;

iii. Rules: CL-R1 to CL-R3;

b. APP12 – Appendix: Background contaminant concentrations.

13. Contaminated or potentially contaminated land is also included as a locational constraint in permitted activity conditions in the EFL, DAM, WW, SW, EARTH, WASTE, and OTH chapters in the pLWRP.

# 2. Issues

14. The risk to the health of water and aquatic ecosystems from contaminated land typically arises from the transport of contaminants into groundwater by leaching and into surface water by runoff and overland flows, which can be enhanced when contaminated land is disturbed. The level of risk often depends on the proximity of contaminants to the receptors, and the susceptibility to contaminant transport processes (determined by, for example, slope, rainfall and other physical characteristics) and potential future disturbances of contaminated land from the effects of climate change.

15. The main issues associated with contaminated land, and the related effects on freshwater and soil that the Contaminated Land chapter seeks to address are:

a. Closed landfills and other contaminated sites are numerous and widely dispersed throughout the region.

b. The number and location of closed landfills and other contaminated sites is unknown.

c. Contaminated land, and particularly closed landfills, are at risk from the effects of climate change and natural hazards.

16. Additional policy issues with the status quo policy context that the CL chapter seeks to address are outlined in Section 3.3 of this chapter.

## 2.1. Closed landfills and contaminated land are numerous and widely dispersed throughout the region.

17. All closed landfills may be sources of contamination, to varying degrees, irrespective of their size. Monitoring and managing closed landfills and contaminated land is more challenging when the number of these sites is high and their distribution is wide, as more sites represent greater potential risk of adverse environmental effects. As of August 2024, ORC's HAIL register contains records of 417 verified and unverified landfill sites across the region (Table 2). Of the landfill sites identified, only 91 have information pertaining to their current land-use. Moreover, only 13 closed landfills across the region have a current consent for discharging contaminants or leachate to water or land in circumstances where a contaminant may enter water.

18. The cumulative effects of the large number of consented and unconsented sites in both urban and rural areas pose a possible threat to the health of land and water resources as well as human health. An example of this is the large number of unknown sheep dip sites which are likely present and undocumented across the region. Not knowing the location of

many landfill sites across the region also increases the complexity of managing these activities, posing difficulties for ongoing monitoring and enforcement of permitted activities.

## 2.2. Contaminated land is at risk from the effects of climate change and natural hazards.

19. The effects of climate change increase the risk of closed landfill and contaminated site disturbance which may mobilise previously contained contaminants. This may occur via processes such as waterlogging from sea level rise and flooding, enhanced erosion and surface capping failure from more frequent and severe extreme weather events (Brand & Spencer, 2024).

20. A recent report has highlighted that Otago's landfills and contaminated sites are at risk from flooding, sea level rise and salinity stress by 2040 (Tonkin & Taylor, 2021). Across the region, 9 closed landfills are exposed to potential impacts at 0.5 m of sea-level rise, a further 11 at 1.0 m, 12 at 1.5 m, and a further 18 closed landfills are exposed at 3.0 m of sea-level rise. Information recorded on the Council's HAIL register indicates that 27 closed landfills are at risk from coastal erosion. All of these landfills are located within 200 m of the coast. Most are within Dunedin City Council boundaries, with the rest located in the Waitaki and Clutha districts.

# 3. Status quo policy context (including operative regional plan provisions)

## 3.1. National direction

### 3.1.1. The Resource Management Act

21. The RMA provides the basis for the management of contaminated land in New Zealand and is the primary legislation for the development of Plan provisions for contaminated land and hazardous substances. Section 15 of the RMA states that no person may discharge contaminants into water or onto or into land in circumstances which may result in that contaminant entering water unless the discharge is expressly allowed by a national environmental standard or other regulations, a rule in a regional plan, or a resource consent. This means that, in the absence of a relevant national environmental standard or regional plan permitted activity rule, all discharges of contaminants to water or to land where they may enter water, require resource consent. One of the roles of a regional plan is to determine at what threshold a resource consent should be required. For the purposes of contaminated land this could be discharges from contaminated sites such as closed landfills in the form of leachate.

### 3.1.2. The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health

22. The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS) was introduced in 2011 and is now the primary tool for managing contaminated land under the RMA.

23. The NESCS sets a nationally consistent set of planning controls and soil contaminant values which are used to assess the potential adverse effects on human health when undertaking various activities. It does not apply to assessing and managing the potential effects on other environmental receptors, such as ecological values and the health of water, which is the role of a regional plan.

24. There are overlapping functions between territorial and regional authorities in relation to contaminated land. The NESCS requires territorial authorities to observe and enforce planning controls for certain activities occurring on contaminated or potentially contaminated land. While regional council functions are not explicitly affected by the NESCS, ORC is required to "investigate land for the purposes of identifying and monitoring contaminated land"[4].

25. To fulfil this function, most regional councils maintain a contaminated sites database (the HAIL register). In addition, regional councils also have the function to control discharges of contaminants into water and to land[5]. Therefore, once contaminated land is identified, regional council has a responsibility to control any discharge of contaminants originating from this contaminated land.

### 3.1.3. National Policy Statement for Freshwater Management

26. The NPSFM is also relevant to this topic. The objective of the NPSFM and foundation concept, Te Mana o te Wai, requires ensuring that natural and physical resources are managed in a way that prioritises:

    a. First, the health and well-being of water bodies and freshwater ecosystems.

    b. Second, the health needs of people (such as drinking water).

    c. Third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

27. The NPSFM also contains specific direction for regional councils to implement the NOF process, which includes identifying values and outcomes for freshwater bodies, and the environmental outcomes to be achieved for each FMU.

## 3.2. Regional policy statements

28. The pORPS provisions are not dissimilar to those of the operative RPS. Key changes in the pORPS which are detailed further below include clarification and stronger direction on the management of contaminated land in relation to natural hazards, and in particular the effects of climate change. The pORPS also includes direction on better recognition of Kāi Tahu rakatirataka.

### 3.2.1. The operative Regional Policy Statement for Otago

29. The operative RPS for Otago provides direction on including the management of contaminated land in the pLWRP through Objective 4.6, which states that "Hazardous substances, contaminated land and waste materials do not harm human health or the

[4] RMA, s30(1)(ca).

[5] RMA, s30(1)(f).

quality of the environment in Otago". The following policies provide strong direction on contaminated land management and identification to achieve the objective, which are to be included within regional plans:

a. Policy 4.6.4: Identify sites of known or potentially contaminated land in Otago.

b. Policy 4.6.5: Ensure contaminated or potentially contaminated land does not pose an unacceptable risk to people and the environment, by:

   i. assessing and, if required, monitoring contaminant levels and environmental risks.

   ii. protecting human health in accordance with regulatory requirements.

   iii. minimising adverse effects of the contaminants on the environment.

c. Policy 4.6.9: Avoid the creation of new contaminated land or, where this is not practicable, minimise adverse effects on the environment.

30. Method 3 of the operative RPS states that a regional plan should manage the effects of the use of contaminated land on water or land, and in the coastal marine area, and the beds of rivers, lakes and other waterbodies.

31. Method 5 states that the regional council must develop, maintain, and monitor a register of sites or potentially contaminated land in Otago, which is undertaken currently through the HAIL database.

### 3.2.2. The proposed Regional Policy Statement for Otago

32. The HAZ-CL chapter of the PORPS provides direction on the management of contaminated land, and seeks that contaminated land is managed to protect human health and not harm Kāi Tahu values and the environment through Objective HAZ-CL-O3. It requires the pLWRP to manage the effects of the use of contaminated land on the quality of land and water (including water bodies), including avoiding the creation of new contaminated land or where this is not practicable, minimise (to the extent reasonably practicable) adverse effects on the environment and Kāi Tahu values. Closed landfills are required to be managed in accordance with a closure plan that contains monitoring and any remedial actions (where necessary). The following policies which provide direction to council on contaminated land are included in the PORPS:

a. HAZ-CL-P13: Identify sites of known or potentially contaminated land.

b. HAZ-CL-P14: Manage contaminated or potentially contaminated land so that it does not pose an unacceptable risk to people and the environment, by:

   i. assessing and, if required, monitoring contaminant levels and environmental risks.

   ii. protecting human health in accordance with regulatory requirements,

   iii. avoiding, as the first priority, and only where avoidance is not reasonably practicable, mitigating or remediating, adverse effects of the contaminants on the environment.

iv. requiring closed landfills to be managed in accordance with a closure plan that sets out monitoring requirements and, where necessary, any remedial actions required to address ongoing risks.

v. prioritising the identification and management of closed landfills and contaminated land at risk from the effects of climate change.

c. HAZ-CL-P15: Avoid the creation of new contaminated land or, where this is not practicable, minimise to the extent reasonably practicable adverse effects on the environment and Kai Tahu values.

### 3.2.3. The Regional Plan: Waste for Otago

33. The current regional policy framework for managing discharges from contaminated land is set out in Chapter 5: Contaminated Sites of the Waste Plan. The Waste Plan recognises that there are sites throughout Otago that have a history of past practices that may have resulted in contamination and that, where these sites have been identified, they are to be contained and managed so as to avoid, remedy or mitigate any adverse effects on surrounding land, water or air resources. There is also overlap between contaminated land and hazardous wastes, as the latter is referenced in the one provision concerned with contaminated land (Rule 5.6.1).

34. The policy framework for managing discharges from contaminated land is comprised of the following provisions in the Waste Plan:

a. Objective 5.3.1: To avoid, remedy or mitigate any adverse effects of contaminated sites.

b. Objective 5.3.2: To avoid further site contamination.

c. Policy 5.4.1: To recognise and provide for the relationship Kāi Tahu have with Otago's natural and physical resources through four specific actions relating to managing contaminated sites.

d. Policy 5.4.2: To locate and investigate contaminated sites in Otago.

e. Policy 5.4.3: To contain and rehabilitate contaminated sites to the extent practicable.

f. Policy 5.4.4: To apply the Australia and New Zealand Conservation Council Guidelines for the assessment and management of contaminated sites (January 1992) as a guide to determining the most appropriate course of action for a particular contaminated site.

g. Policy 5.4.5: To prepare and maintain a register outlining details of sites which are contaminated.

h. Rule 5.6.1: Discretionary activity rule for discharge of hazardous waste into water, or into air at or from a contaminated site, or onto or into land in circumstances that may result in that hazardous waste (or any other hazardous waste emanating as a result of natural processes from that hazardous waste) entering into water, or the deposit of any hazardous waste in, on, or under land. As such, this rule states that for hazardous wastes at contaminated sites the following activities require consent as a discretionary activity:

i. The disturbance of land (including for a site investigation)

ii. The discharge of hazardous waste into water

iii. The discharge of hazardous waste onto or into land in circumstances that may result in that hazardous waste (or any other hazardous waste emanating as a result of natural processes from that hazardous waste) entering water

iv. The deposit of any hazardous waste, in, on or under land

v. The discharge of hazardous waste into air at or from a contaminated site

35. The following paragraphs discuss each of the above provisions in greater detail.

36. The objectives of the chapter state the need to avoid, remedy or mitigate any adverse effects arising from contaminated sites through effective management and the need to avoid any further creation of contaminated land.

37. The recognition of Kāi Tahu's relationship with Otago's resources in relation to managing sites is provided for through Policy 5.4.1. The policy states that through continuing consultation with Kāi Tahu, mana whenua will be able to give effect to customary kaitiakitanga. Managing contaminated sites would not be possible without undertaking investigations into where they are, and the contaminants present within them. These activities are provided for through Policy 5.4.2. Policy 5.4.3 aims to ensure that when sites are identified, the contaminants are identified and a risk-based approach to management with landowners is taken.

38. Policy 5.4.4 of the Waste Plan aims to include best practice and guidelines for managing contaminated sites, through application of the Australia and New Zealand Conservation Council Guidelines for the assessment and management of contaminated sites (January 1992). All contaminated site disturbances are, under current rules, a discretionary activity. Given that waste management and our understanding of the environment has transformed considerably over the past three decades this approach is likely inadequate and outdated in relation to contemporary social and environmental standards.

39. The Council maintains a HAIL 13 register that records verified and unverified HAIL sites. The identification and sharing of information online through ORCs HAIL register interactive map is an example of Policy 5.4.5 in practice and is an example of good knowledge sharing for planning. However, from compliance experience it is believed that numerous sites exist, especially on private land in rural Otago, that are contaminated and require registering in HAIL records.

40. The management of closed landfills is provided for through two rules under the current Waste Plan:

a. Rule 7.6.1 The discharge of any contaminant into or onto land, into water, or into air from new (established after 1 October 1991) or operating landfills is a discretionary activity provided that no burning of waste is undertaken; and

b. Rule 7.6.2 The discharge of any contaminant into or onto land, into water, or into air from landfills that closed between 1 October 1991 and 1 October 1994 is a discretionary activity.

41. Together both rules establish a transitional management framework whereby,

a. Any landfills closed before 1 October 1991 do not require a resource consent but may be considered a contaminated site and are subject to Rule 5.6.1 if it is discharging contaminants.

b. Any landfill closed between 1 October 1991 and 1 October 1994 was permitted until 1 October 1996, after which time it required a resource consent under Rule 7.6.2 and a landfill closure plan.

c. Any landfill closed after 1 October 1994 is managed under Rule 7.6.1 as if it were an operating landfill.

42. Table 3 below shows the minimum, maximum, and median processing costs for resource consent applications that resulted in at least one discharge to land permit (contaminated land) being issued. The 'number of examples' column shows how many applications resulted in that number of consents being issued. For example, in the 2022/23 financial year, there were three resource consent applications that resulted in two resource consents being issued (at least one of which was a discharge to land permit from contaminated land).

43. The information shows that applications that result in fewer consents (between 1 and 5 consents) are cheaper to process than those application which result in over 5 consents. Between 2022 and 2024, the median cost for applications which resulted in 5 or fewer consents ranged between $4,346.44 and $8,520.87, while those that resulted in over 5 consents ranged between $11,090.91 and $25,895.15.

*Table 3: Processing costs for discharge to land permit for contaminated land*

| Financial year | Number of consents issued | Minimum cost | Maximum cost | Median total cost | Number of examples |
|---|---|---|---|---|---|
| 2022/23 | 1 | 6,002.65 | 6,002.65 | 6,002.65 | 1 |
| | 2 | 5,218.36 | 7,820.71 | 5,333.89 | 3 |
| | 3 | 8,520.87 | 8,520.87 | 8,520.87 | 1 |
| | 5 | 8,117.14 | 8,117.14 | 8,117.14 | 1 |
| | 11 | 11,090.91 | 11,090.91 | 11,090.91 | 1 |
| 2023/24 | 3 | 2,168.21 | 7,219.33 | 4,346.44 | 8 |
| | 8 | 25,895.15 | 25,895.15 | 25,895.15 | 1 |

## 3.3. Issues with status quo approach

44. There are several issues with the current approach to managing contaminated land across the Water and Waste Plans. These include:

a. The status quo approach is confusing for plan users;

b. The management framework for contaminated land is out of date and does not align with national direction and standards; and

c. The status quo approach is not achieving the desired outcomes.

45. The issues with the status quo are discussed in more detail in the following sections.

### 3.3.1. The status quo approach is confusing for plan users

46. The current approach for managing contaminated land is confusing for plan users, especially in relation to the management of closed landfills. Closed landfills scattered throughout the region are classified as contaminated land, with overlapping processes in place to gain consents and permission for discharges from either activity. Accordingly, there is a need for clarity around defining these different activities, with appropriate policies and rules in place to direct effective management of current and historic activities. Moreover, the unknown number and effect these closed landfills and contaminated sites are having on the environment across Otago is likely exacerbated by this lack of clear direction for the community in relation to their management.

### 3.3.2. The management framework for contaminated land is out of date and does not align with national direction and standards

47. The Waste Plan became operative in April 1997, over 27 years prior to writing. Rules and policies for managing contaminated land do not reflect developments in national direction and best management practices; there is a need update provisions to reflect and align with these changes. A recent example of this is the need to provide stronger policy direction on contaminated land in relation to natural hazards and climate change and give effect to the following objectives and policies under the pORPS (HAZ-CL-O3, HAZ-CL-P13, HAZ-CL-P14, HAZ-CL-P15).

48. Furthermore, the Waste Plan has not been amended following the introduction of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS). Although the NESCS does not apply to regional council functions, it introduces a management regime that interacts and, in some cases, overlaps with regional council functions (for example, managing discharges from contaminated land). The NESCS adopts a range of standard terminology and approaches to investigating and managing contaminated land that is not reflected in the Waste Plan provisions currently. It will improve the efficiency of the management of contaminated land if the LWRP provisions are developed to align with the NESCS (for example, by adopting relevant terminology and establishing how the provisions relate to the Councils functions in relation to the NESCS). Other examples are the need to give effect to developments in the pORPS.

### 3.3.3. The status quo approach is not achieving the desired outcomes

49. The disturbance and associated discharge of contaminants from contaminated land are currently a discretionary activity under the Waste Plan. The inadequacy of the current management approach is highlighted by the vast number of contaminated sites across the region with limited information available, nor consents. This has been recognised by ORC staff and the community as a hinderance to progressing work on investigating HAIL sites and undertaking detailed site investigations, the first step in undertaking work to remediate and provide new purpose to contaminated land. In addition to this, there are now nationally consistent guidelines for managing contaminated land. Developed by the Ministry for Environment, comprehensive best practice guidelines are available for site investigations and analysis of soils (Ministry for the Environment, 2021c) and for reporting on contaminated sites (Ministry for the Environment, 2021a).

50. In light of developments in national policy, and science and technology since 1997, there is a need to provide a clear and nationally consistent approach to contaminated land management which is efficient and effective for both the Council and the communities of Otago. Providing an up-to-date framework for contaminated land management which is suitable for the 21st century will also be necessary for meeting the requirements of the NPSFM and environmental outcomes of the pLWRP.

# 4. Objectives

51. Section 32(1)(b) of the RMA requires an examination of whether the provisions in a proposal are the most appropriate way to achieve the objectives.

52. The objectives and environmental outcomes that are particularly relevant for this topic are:

a. The following objectives in the IM – Integrated management chapter:

i. IO-O1 Te mana o te Wai

ii. IO-O2 Relationship of Kāi Tahu to freshwater

iii. IO-O3 Long-term visions and environmental outcomes

iv. IO-O4 Ki uta ki tai/integrated management

v. IO-O5 Manahau āhuarangi/climate change

vi. IO-O7 Freshwater species

vii. IO-O8 Land and soil resources

viii. IO-O9 Community well-being

b. All of the environmental outcomes included as objectives in chapters FMU1 to FMU5 (including chapters CAT1 to CAT5);

c. CL-O1 – Natural hazard risks.

# 5. Overview of sub-topics

53. One of Otago Regional Council's roles and responsibilities is to mitigate and avoid adverse environmental effects of contaminated land, including closed landfills, where possible, and enforce remediation and cleanup where practicable. The options for contaminated land are presented by topic:

a. Site investigations; and

b. Contaminated land and closed landfill discharges.

54. The options for these topics are discussed in turn in the following sections, alongside a summary of the clause 3 and clause 4A consultation feedback, and the effectiveness and efficiency assessment.

55. For all options, the differences are primarily related to the rule frameworks and activity status, rather than a shift in the policy direction. The disturbance of contaminated land and related discharge is managed through the Earthworks Chapter; Plan users are directed to meet the permitted activity conditions provided within the NESCS or gain a resource consent, as well as the relevant Earthworks provisions in the pLWRP.

# 6. Sub-topic: Site Investigations

56. Site investigations are an integral part to developing contaminated land into more beneficial land uses for future generations; they are a low risk and necessary component of the process of managing and remediating contaminated sites. The NESCS provides a permitted activity pathway for sampling soil (undertaking site investigations) in relation to managing the effects of the activity on human health; however, there is the option for the Regional Council to impose more stringent conditions to manage the possible impacts on the environment. Soil sampling requires disturbing and investigating contaminated soil which has the potential to discharge contaminated soil and disturb the capping of sites.

## 6.1. Discounted options

57. For the reasons outlined in Section 3, the status quo approach to site investigations is not considered a realistic option for achieving the purposes and environmental outcomes of the pLWRP.

## 6.2. Reasonably practicable options

58. Two reasonably practicable options to manage the disturbance of contaminated land and the associated discharge of contaminants for the purpose of undertaking site investigations are considered as outlined below:

a. **Option 1:** Volume controls and risk-based approach in relation to slope

b. **Option 2:** Permissive approach to investigations (preferred option)

### 6.2.1. Option 1: Volume controls and risk-based approach in relation to slope

59. This option provides a rule framework for a risk-based approach to the disturbance of contaminated land for site investigations; this is based on the slope of the land being disturbed, and the proximity of such a disturbance to sensitive receiving environments. With potential contaminated soil and sediment runoff being a risk and pathway of contamination to water, slope and setback requirements are provided as a risk-based measures.

60. The permitted activity pathway would have two pathways within the rule framework depending on the slope of land:

a. The disturbance of up to 5m$^3$ of soil on contaminated land on slopes over 10 degrees, with 50-metre setbacks from receiving environments; or

b. The disturbance of up to 10m$^3$ of soil on contaminated land on slopes under 10 degrees, with 25-metre setbacks from receiving environments.

61. In addition to this, controls would need to be in place to avoid sediment loss and avoid any overland flow or surface runoff entering the site. Other standardised conditions related to earthworks are included in the rule framework as outlined below:

a. If a site investigation disturbs an archaeological site the protocol for accidental archaeological discovery is followed; and

b. That the discharge to land does not contain any pest, pest agent, unwanted organism, or organism of interest.

62. Finally, a condition would ensure that ORC is afforded oversight and information through reporting and notification within 40 days of completion of the site investigation. Site investigations which would not meet the permitted activity threshold would lead to the need to acquire full discretionary consent from ORC.

### 6.2.2. Option 2: Permissive approach to investigations (preferred option)

63. Option 2 proposes a straight-forward approach to enable site investigations to occur more readily through a permitted activity framework. The first condition of this option ensures that site investigations are not occurring within a drinking water protection zone, nor near the seasonal high-water table depending on soil classification. The aim of this condition is to protect drinking water and groundwater resources, as site investigations may require drilling or excavating soil.

64. The conditions also direct plan users to follow the relevant guidelines from the Ministry for the Environment for undertaking site investigations found in (Ministry for the Environment, 2021c) and guidelines for reporting on HAIL sites as specified in (Ministry for the Environment, 2021a). The report produced as part of the permitted activity should then be provided to ORC within 40 working days of completion of the investigation. This will afford ORC increased oversight of activities being undertaken on contaminated land across the region and ensure the HAIL database is maintained and updated.

65. For the control of sediment and contaminated soil, permitted activity conditions ensure that those undertaking site investigations are considering erosion and sediment controls to ensure positive environmental outcomes. Investigations must not result in ponding or overland flow, or cause flooding, erosion, land instability or any property damage. Other standardised conditions related to earthworks are included in the rule framework as outlined below:

    a. If a site investigation disturbs an archaeological site the protocol for accidental archaeological discovery is followed; and

    b. That the discharge to land does not contain any pest, pest agent, unwanted organism, or organism of interest.

66. Should the conditions stated above not be able to be achieved for a permitted activity, then restricted discretionary consent is required for site investigations.

## 6.3. Clause 3 consultation feedback

67. Feedback on the contaminated land provisions was received from several parties during pre-notification consultation under Clause 3, Part 1 of the First Schedule of the RMA. Overall, parties commenting on these provisions expressed general support for the proposed approach, with only limited engagement with the provisions for site investigations. Specific issues raised by these parties are summarised below:

    a. A permitted activity condition that requires compliance with the Contaminated Land Management Guidelines may negate the need for a rule requiring consent.

    b. While contaminated land site investigations should not require consent, reporting to council is reasonable.

68. This feedback was incorporated into the options proposed in this section through permitted activity conditions, with Option 2 including the conformity to MfE Management Guidelines as a condition of the permitted activity pathway.

## 6.4. Clause 4A consultation feedback

69. No specific feedback was received from Iwi in relation to the CL – Contaminated Land chapter of the pLWRP. Feedback received in the Clause 3 stage from Iwi was included prior to Clause 4A consultations.

## 6.5. Efficiency and effectiveness assessment

70. Table 5 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in Option 1 (volume and slope controls) and Option 2 (permissive approach to investigations) above.

*Table 4: Benefits and costs for CL Chapter – site investigations*

| | BENEFITS | COSTS |
|---|---|---|
| **Option 1** | Adopts a precautionary approach compared to Option 2. Has additional environmental benefits by ensuring site-specific erosion, sediment, and discharge controls. This prioritises the intrinsic value of water potentially leading to more beneficial environmental outcomes, by reducing the possibility of contaminated sediment contaminating receiving environments.<br><br>The risk-based approach for permitted site investigations reduces the possible risk of contamination of receiving environments, with those deemed too high-risk requiring full discretionary consent from ORC.<br><br>Improvements in knowledge and oversight of contaminated sites for ORC through notification as part of permitted activity. Improving the ability of the compliance, monitoring and enforcement team to monitor environmental impacts and enforce remediation where needed.<br><br>Increased consideration of freshwater outcomes, including those of mana whenua, will likely lead to better environmental and social outcomes for future generations through improved natural resources and increasing land available for development. | Higher costs for landowners, associated with consents required for more site investigation activities compared to Option 2. The cost to developers or landowners may lead to inaction or delay in undertaking work on, or identifying contaminated sites. The consent deposits for non-notified and limited notified applications are $3000, increasing to $25,000 for publicly notified applications. These costs do not include the cost to prepare a consent application, nor any processing costs that may be incurred over and above the deposit.<br><br>Likely to lead to an increased number of consents and thus time and resources required for processing consents for council. This will require additional staff and resources for a relatively low-risk activity to monitor and enforce compliance for resource consents.<br><br>Places a relatively high amount of cost on activities which require consent, for a relatively low-risk and in some instances, necessary and environmentally and socially positive activity. |

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| **Option 2 (preferred option)** | Improvements in knowledge and oversight of contaminated sites for ORC through notification as part of permitted activity. Improving the ability of the compliance, monitoring and enforcement team to monitor environmental impacts and enforce remediation where needed.<br><br>Undertaking site investigations incurs substantial costs and therefore reducing costs through a permitted activity pathway should reduce financial barriers and improve contaminated land identification efforts.<br><br>More simplified consenting process for practitioners and landowners with a best practice approach and permitted activity status reduces consenting costs. This is likely to be more accepted by the community as identified within Clause 3 feedback, which suggested conformity to best practice would likely negate the need for consent.<br><br>ORC is afforded the opportunity to include site specific consent requirements where necessary though a restricted discretionary framework, leading to more tailored approaches to managing site investigations in higher-risk sites (for example, drinking water protection zones).<br><br>Increased consideration of freshwater outcomes, including those of mana whenua, will likely lead to better environmental and social outcomes for future generations through improved natural resources and increasing land available for development. | Several clauses are included within the permitted activity framework which may make this pathway unachievable or burdensome for some sites. This will lead to additional costs to comply with the permitted activity conditions, or where they do not meet the permitted activity thresholds through acquiring consent. The consent deposits for non-notified and limited notified applications are $3000, increasing to $25,000 for publicly notified applications. These costs do not include the cost to prepare a consent application, nor any processing costs that may be incurred over and above the deposit.<br><br>The relatively long list of criteria/conditions for permitted activity status may lead to negative perceptions from the public regarding a relatively straightforward and socially and environmentally acceptable activity. | |

| BENEFITS | COSTS |
|---|---|
| Use of national best practice guidelines will ensure a consistent approach toward site investigations, promoting better social, environmental and economic outcomes for practitioners and communities. | |

71. Table 6 below assesses the effectiveness and efficiency of the proposed provisions under options 1 and 2 in achieving the relevant objectives and environmental outcomes.

*Table 5: Efficiency and effectiveness assessment for CL Chapter – site investigations*

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| | **Effectiveness** |
| **Option 1** | This option would likely be more effective than Option 2 at achieving the pLWRP objectives and environmental outcomes identified in the FMU chapters of the plan from a strictly environmental risk perspective; it prioritises the health of fresh water and soil resources through a risk based approach, and requires consent where risk is deemed too high. However, in comparison to Option 2 the more stringent conditions on the permitted activity pathway may place unnecessary financial constraints on efforts to engage with the public and identify contaminated land, which is a key policy direction of the pORPS, as well as achieving CL-O1, IO-O4 and IO-O8. In turn this could delay identification and remediation of sites at risk of becoming affected by the effects of climate change, due to the costs likely incurred through resource consents which may lead to unwanted environmental and social outcomes for a relaitvley low risk activity. |
| **Option 2 (preferred option)** | Managing the disturbance and investigation of contaminated land and sites in accordance with Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils (Ministry for the Environment, 2021c) will increase the effectiveness of the pLWRP in achieving its environmental outcomes across Otago. The permitted activity pathway for most site investigations is expected to increase the effectiveness of the overall contaminated land management regime in, while requiring consent for those activities that may result in contamination of drinking water supplies or are to be carried out in a different manner to that generally accepted/carried out by the industry will provide for the necessary environmental protections. |
| | **Efficiency** |
| **Option 1** | While this option prioritises the health of freshwater and soil in comparison to Option 2, it is likely less efficient in enabling the proactive management of contaminated land and achieving CL-O1, as |

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| | objectives of the pORPS and NPSFM. Although the terminology is aligned with the NESCS (supporting a nationally consistent approach), this option could increase time, cost and resources for plan users and the Council associated with carrying out site investigations, with possibly little difference in environmental outcomes in comparison to Option 2. As such, Option 1 may hinder efforts to achieve the objectives, especially so CL-O1.<br><br>By increasing stringency in relation to the NESCS in terms of undertaking site investigations, it is viewed as less efficient than Option 2 which takes a more pragmatic approach to managing the environmental risk associated with this activity. It would likely lead to less efficient work being undertaken to identify and remediate contaminated land, which is considered a priority, especially with the risks associated with climate change. |
| **Option 2 (preferred option)** | This approach is expected to be highly efficient because it provides an easier pathway for undertaking site investigations and reduces barriers to contaminated land management. By making the permitted activity pathway consistent with national standards for site investigations, and for a relatively low risk activity, it provides an acceptable pathway to promoting the investigation of contaminated land to improve the quality of the environment and encourage remediation.<br><br>Clarifying the requirements for site investigations within the pLWRP will improve certainty for all plan users. Restricted discretionary activity status for activities that do not meet the permitted activity conditions, will also focus and narrow the consent process to those matters of concern, reducing unnecessary effort for applicants. Both changes are likely to increase efficiency and support the identification of contaminated land.<br><br>The provisions are integrated with those from the EARTH chapter, strengthening and clarifying policy direction to manage this site investigations and encourage responsible investigations of contaminated land.<br><br>These provisions also align closely with the terminology of the NESCS, and are less stringent than Option 1. Moreover, the NESCS does not deal with the potential impacts to the environment, ensuring close alignment with these provisions means a nationally consistent approach whilst ensuring best practice and protection of land and freshwater is considered.<br><br>This approach ensures that the initial stages of identifying contaminated land for remediation and management purposes is efficient, which also implements CL-P2 and parts of CL-P1. This change should remove existing barriers to remediation and management, which in turn should lead to more land becoming available for other |

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| | uses once contamination has subsided to acceptable levels for future generations. It should also ensure that identifying contaminated sites at risk of exposure to the effects of climate change are more readily identified in line with the pORPS. |

72. Section 32(2(c)) of the RMA requires ORC to take into account the risk of acting or not acting if there is uncertain or insufficient information.

73. The regulatory requirements, the available and up-to-date detailed best practice guidelines, and the generally low environmental risks of site investigation sampling techniques (with recommendations to minimise these where they exist) mean the environmental impacts of site investigations are likely to be less than minor and the guidelines and a need for fulfilling regulatory requirements support the necessity, consistency and effectiveness of this activity. There is sufficient information on the adverse environmental effects of site investigations, and the appropriate controls for this activity, to warrant a permitted approach subject to implementing best practice guidelines and requiring consent in certain situations as proposed in Option 1. This approach aligns with feedback received through consultations and responds directly to issues raised within this report. Not acting may increase the risk that site investigations, and associated discharges of hazardous substances into the environment, prevent the council from achieving the environmental outcomes. There is a minimal risk of acting compared to the status quo.

### 6.6. Conclusion

74. The effectiveness and efficiency assessment indicates that overall, Option 2 will be more effective and efficient at achieving the objectives of the pLWRP and pORPS (HAZ-CL-P13 and HAZ-CL-P14) than the status quo and Option 1. Given the efficiency and effectiveness of this option, it is likely to be the most appropriate way to achieve the objectives of the pLWRP.

## 7. Subtopic: Contaminated land and closed landfill discharges

### 7.1. Discounted options

75. For the reasons outlined in Section 3, the status quo approach to managing contaminated land and closed landfills is not considered a realistic option for achieving the purposes and environmental outcomes of the pLWRP.

### 7.2. Reasonably practicable options

76. Two reasonably practicable options to manage discharges from contaminated land and closed landfills were identified and are outlined below:

a. **Option 1:** Consent requirement for all discharges from contaminated land and closed landfills.

b. **Option 2:** Permitted activity pathway for discharges from contaminated land and closed landfills (preferred option).

### 7.2.1. Option 1: Consent requirement for all discharges from contaminated land and closed landfills

77. This option seeks to manage all passive discharges from contaminated land and closed landfills as a consented (discretionary) activity under a single rule framework. This approach allows ORC to take a more active and site-specific approach in the management of contaminated land across the region by providing Council with the ability to require remediation and/or set controls on passive discharges from contaminated land tailored to the specific circumstances.

### 7.2.2. Option 2: Permitted activity pathway for discharges from contaminated land and closed landfills (preferred option)

78. Option 2 encourages the remediation of contaminated land through providing two separate permitted activities for passive discharges from contaminated land and closed landfills. This is achieved through requiring consent for passive discharges from contaminated sites at unacceptable levels, whilst a permitted activity pathway is available for discharges within acceptable environmental and ecological limits. The conditions of the permitted activity rule, outlined below, ensure that discharges of contaminants within safe or acceptable environmental limits are a permitted activity, whilst allowing ORC full discretion in providing consents for those which are unsafe.

#### 7.2.2.1. Passive discharges from contaminated land

79. For passive discharges from contaminated land (excluding closed landfills), a permitted activity pathway is provided requiring landowners to complete a site investigation and submit a copy of this investigation report to ORC. To meet the conditions of the permitted activity rule, previous monitoring or the site investigation report must demonstrate a statistically significant decreasing trend in contaminant concentrations in groundwater or surface water. This is to be measured downstream of the discharge or property boundary, at any existing bore, within a drinking water protection zone, or at any point where groundwater exits to surface water. The contaminant concentrations are to be measured against relevant environmental and health guidelines:

    a. The Drinking Water Standards for New Zealand 2022, or

    b. The Australia and New Zealand Guidelines for Fresh and Marine Water Quality, or

    c. The Ministry for the Environment's Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand (2011).

80. In addition to this, the permitted activity conditions also require that discharges do not produce any conspicuous oil or grease films, scums or foams, floatable or suspended material, or change in visual clarity.

81. Should these conditions for the permitted activity not be met, then a discretionary consent will be required, providing ORC with the impetus to enforce remediation on land discharging contaminants above the permitted activity thresholds.

#### 7.2.2.2. Closed landfills

82. A permitted activity pathway is also provided for passive discharges from closed landfills. There are three requirements that discharges from closed landfills must meet to be treated as a permitted activity. First, monitoring must demonstrate a reduction in contaminant concentrations over a 20-year period, and the contaminants must be within a 10% range of the background contaminant concentration levels set out in an Otago specific background contaminant concentration appendix (APP12) of the pLWRP.

83. Second, a risk assessment must be carried out in accordance with the appropriate risk screening system provided by the Ministry for the Environment. These are the Small Landfill Closure Criteria Risk Assessment for Small Closed Landfills (2002) (Ministry for the Environment, 2002), (less than 15,000$m^3$ in volume) or the Guide to the Management of Closing and Closed Landfills in New Zealand (2001) (Ministry for the Environment, 2001).

84. Finally, a copy of the risk assessment should be provided to ORC, which will afford a comprehensive understanding of the site and potential risk of further contamination.

85. Under option 2 failing to comply with these permitted activity conditions will result in the closed landfill requiring consent as a controlled activity, where ORC's control is restricted to effects of the discharge on water quality and ecosystem health, along with measures related to mitigation, rehabilitation, contaminant type and volume, and stormwater management.

## 7.3. Clause 3 consultation feedback

86. Feedback on the contaminated land provisions was received from several parties, including from MPI, DCC, QLDC, Kāi Tahu and Fish and Game, during pre-notification consultation under Clause 3, Part 1 of the First Schedule of the RMA. Overall, parties commenting on these provisions expressed general support for the proposed approach for managing discharges from contaminated land. Specific matters or issues raised by these parties are summarised below:

    a. Several parties sought greater recognition of climate change and the associated risks of erosion and exposure of contaminated sites and old landfills across the region.

    b. QLDC sought updates to the drinking water standards in line with legislative changes.

    c. Fish and Game supports regulating the management of ongoing adverse effects from closed landfills but seeks stronger direction on the need for remediation or relocation of closed landfills at risk from erosion or flooding. No changes were made in response to this feedback as the provisions in the pLWRP are better aligned with the direction set by the PORPS.

87. Much of this feedback was incorporated into the overarching policy direction for the contaminated land provisions. Following Clause 3 feedback, the contaminated land provisions were collated into a single chapter from various areas across the plan. This led to the formation of a new objective which incorporates the feedback summarised above in CL-O1. Wording was amended to reflect feedback in relation to identifying and remediating contaminated land (CL-P1), and closed landfills (CL-P3) and provide stronger and more directive policy direction on these topics.

## 7.4. Clause 4A consultation feedback

88. No feedback was received on these draft provisions through clause 4A consultation.

## 7.5. Efficiency and effectiveness assessment

89. Table 7 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in Option 1 (Consent requirement for all contaminated land and closed landfill discharges) and Option 2 (permitted activity pathway for contaminated land and closed landfills discharges) above.

*Table 6: Benefits and costs for CL Chapter – passive discharges from contaminated land and closed landfills*

| | BENEFITS | COSTS |
|---|---|---|
| **Option 1** | Better oversight and increased involvement from ORC through the discretionary activity status will allow holistic management of contaminated land, leading to good environmental outcomes and reducing the risk of further contamination or the introduction of more contaminants to already contaminated land.<br><br>ORC is afforded the opportunity to include site remediation as a condition of consent where necessary, improving land conditions for future generations, especially so in areas of Otago experiencing high development.<br><br>Allows for increased consideration of relevant objectives and environmental outcomes, including those that provide for mana whenua values.<br><br>This approach will ensure that discharges from closed landfills and contaminated land do not adversely impact the mauri and health of soil, aquatic ecosystems, or human health.<br><br>Increasing the regulation around contaminated land and closed landfills and enforcing remediation may lead to co-benefits in terms of increased employment and greater economic opportunity for business in this area. | When compared to Option 2, Option 1 is likely to incur greater costs to landowners in more developed areas, such as within the areas of Dunedin City Council, where over half of HAIL sites are located. This will lead to a greater financial burden on these districts. For those responsible, the consent deposits for non-notified and limited notified applications are $3000, increasing to $25,000 for publicly notified applications. These costs do not include the cost to prepare a consent application, nor any processing costs that may be incurred over and above the deposit.<br><br>There are likely to be increasing regulatory costs for the council though consenting processes, enforcement, and the provision of advice to landowners and developers. These are likely higher for this option due to internal administration needs of processing consents.<br><br>Economic costs may be greater under Option 1 than under Option 2 which has provided a more streamlined process for managing contaminated land. |

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| **Option 2 (preferred option)** | Through requiring information sharing with ORC regarding the location and details of contaminated land option 2 engenders the development of a holistic understanding of contaminant discharges from contaminated sites and closed landfills throughout the region. This could lead to a better understanding of cumulative impacts, thus provide clearer oversight of where discharges are occurring, and allowing more targeted environmental management and planning.<br><br>A permitted activity pathway is available for low-risk activities. This will lower the costs for some contaminated land discharges where there is an acceptable risk to the environment.<br><br>The inclusion of up-to-date standards for water quality and discharges reflects the consideration of freshwater outcomes, including those of mana whenua. This will lead to better environmental and social outcomes for future generations through improved water quality for a range of social and economic purposes.<br><br>A simplified consenting process for practitioners and landowners with a best practice approach provides less of a barrier to acting on contaminated land, which in turn could lead to better environmental outcomes by increasing participation in contaminated land remediation.<br><br>With a lower financial burden on landholders compared to Option 1, this approach will ensure that discharges from closed landfills and contaminated land does not adversely impact the mauri and health of soil, aquatic ecosystems, or human health. There is then an increased | The inclusion of more restrictive receiving of water quality standards will add a greater level of compliance and management in some cases. Through increased prioritisation of the health of waterways and the environment, consenting requirements are more stringent and go beyond national direction, adding an inherent cost to those requiring consent from ORC as well as other statutory authorities.<br><br>It is expected that there are likely to be increasing regulatory costs for the council though consents, enforcement, and providing advice to landowners and developers.<br><br>Greater costs are likely to be incurred for landowners in more developed areas, such as Dunedin City Council where over half of the HAIL sites are located.<br><br>Closed landfills without 20 years of monitoring data will need to apply for consent even though they may be discharging contaminants at acceptable environmental values. This could in turn lead to unnecessary costs to landholders, and negative perceptions of ORC. |

| BENEFITS | COSTS |
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| opportunity to focus on more polluting sites. | |

90. Table 8 below assesses the effectiveness and efficiency of the proposed provisions in Options 1 and 2 in achieving the relevant objectives and environmental outcomes.

*Table 7: Efficiency and effectiveness assessment for CL –contaminated land and closed landfills*

| | Effectiveness |
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| **Option 1** | Given that contamination of land has already occurred, these provisions manage the ongoing environmental effects of passive discharges from contaminated land and closed landfills. The requirement for consent for all discharges from contaminated land takes a precautionary approach. Option 1 would be a very effective option for safeguarding water and land from contamination and would be effective in meeting the objectives of the NPSFM by giving greater controls to ORC in relation to contaminated land management. Through this option, ORC is provided full discretion in managing discharges from contaminated land, allowing consent conditions to be imposed and enforced, which could lead to greater remediation.<br><br>However, this option, which closely aligns with the status quo approach, may prove less effective in relation to option 2 which provides an incentive to remediate sites in the longer term.. |
| **Option 2 (preferred option)** | The permitted activity rule framework for passive discharges from contaminated land and closed landfills takes a pragmatic approach to prioritising and protecting the health of water. Given the contamination of land has already occurred, these provisions manage the ongoing environmental effects of passive discharges from contaminated land and closed landfills.<br><br>The package of provisions provided under Option 2 gives effect to the NPSFM, is aligned with the NESCS, and includes some additional Otago-centric controls to incorporate best practice for contaminated land management given the high number of contaminated sites across the largely rural region.<br><br>It is unclear at present how long it will take to achieve the relevant objectives, given the scale of land contamination in the region, and the amount of information and knowledge needed to undertake effective management of these sites. The policies and provisions proposed under Option 2 will make effective land management straightforward and clearer for landowners and practitioners by reducing confusion of multiple management regimes under the current Waste Plan and Water Plans. Permitted activity frameworks |

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| | with realistic and nationally aligned standards and conditions should make these provisions more acceptable for stakeholders and the community, who would like to see action on remediating and cleaning up contaminated sites as identified during consultation.<br><br>If Option 2 were to be adopted, extra work and resources beyond status quo is expected. This is not expected to be substantial and is justified by the increased oversight and understanding gained from the delivery of information on contaminated land to the Council. This will allow council to use resources for monitoring and compliance more effectively to ensure Otago is meeting its freshwater and land objectives for future generations. |
| | **Efficiency** |
| **Option 1** | Although this would provide greater stringency in the management of contaminated sites, this Option is considered less efficient than Option 2 through increasing the burden on landowners where contaminants are within acceptable levels to be discharged into receiving environments. Given the vast number of contaminated sites across the region, this would lead to a substantial amount of work for the council and incur a large cost to both landowners and the ORC through consenting, compliance, and monitoring. Given the vast resources required to undertake the work associated with this option in practice, it is beyond the abilities of the ORC as currently staffed and would require vast investments in contaminated land expertise and compliance staff. These resources could be put to better effect in undertaking targeted monitoring, enforcement and remediation at sites which are of a greater risk to Otago's natural resources. Moreover, by increasing the burden on landholders and requiring consent for all discharges from contaminated land, it may lead to unhelpful perceptions of the council, and lead to inaction on identifying and acting on contaminated sites across Otago.<br><br>Moreover, given the changes to national direction and the roll out of the NESCS, and improvements in scientific knowledge, environmental monitoring, and modelling, it may be overly prescriptive and labour intensive, especially so for management of sites which have improved and are able to meet acceptable environmental standards. ORC has previously heard from operators of closed landfills that this approach may be inefficient for some landfills because they have been closed for long periods of time, subject to closure plans, and monitoring demonstrates that the concentration of contaminants in the discharge is low (sometimes near background concentrations). In some cases, the discharges may be comparable to other types of discharges which are permitted under the existing Waste or Water Plans. |

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| **Option 2 (preferred option)** | With relatively low input from Council in terms of resources that are required for permitted activity rules, it minimises the council's labour in relation to discharges that are not likely to have adverse impacts. Notification of sites which are permitted and within safe limits could allow the Council to maintain an accurate HAIL register and allow resources to be allocated more efficiently to manage potentially hazardous sites and discharges.<br><br>The standards for discharges as set out in the permitted activity framework for closed landfills and contaminated land increase the efficiency for the community with positive outcomes for the mauri and health of soil, and freshwater ecosystems. Setting clear and detailed discharge quality limits provides a workable goal for sites not meeting the specified standards, whilst promoting discharges within safe environmental limits. Providing a straightforward pathway for consenting these activities as opposed to the status quo and alternative option will be a positive change for landowners.<br><br>More directive policy guidance on remediation in relation to climate change and the risks posed to contaminated sites and closed landfills will also likely increase the efficiency of the consenting process for the applicant and staff. |

91. Section 32(2)(c) of the RMA requires the Council to take into account the risk of acting or not acting if there is uncertain or insufficient information. For passive discharges from contaminated land and closed landfills there is an obligation for the Council to manage potentially hazardous discharges.

92. Given that there is a growing number of HAIL sites continuing to be identified across Otago, as well as an unknown number yet to be incorporated or captured by the HAIL register, there is a pressing need to act to manage these sites proactively and remediate where necessary. There is sufficient information available pertaining to the extent of contaminated land in the region, but there is still much to learn regarding environmental impacts from these discharges, as well as potential changes as a result of climate change.

93. However, there is sufficient understanding and information regarding the current water quality issues across Otago, which supports the need to promote safer discharges and prioritise monitoring and remediation of more hazardous sites. The supporting information is deemed to support the preferred option as a suitable and sufficient approach with a minimal risk of acting in comparison to the status quo.

## 7.6. Conclusion

94. The cost and benefit analysis and effectiveness and efficiency assessment demonstrates that, overall, the preferred approach in Option 2 are more efficient than Option 1. The assessment demonstrates that Option 2 would be effective at achieving the objectives of the pLWRP and the PORPS, in a way that promotes consistency with the NESCS whilst safeguarding freshwater and soil resources for future generations. The provisions proposed under this option form part of a greater package of objectives policies and provisions which

will provide a more effective and efficient approach to managing contaminated land in comparison to the status quo and achieve the environmental outcomes of the pLWRP.