Site Management Plan

Excavation and Handling of Contaminated Soils at Christchurch International Airport

CHRISTCHURCH AIRPORT

Document Control

		Site Management Plan - Excavation and Handling of Contaminated Soils at Christchurch International Airport				
Revision	**Date**	**Document prepared by**			**CIAL Review and Approval**	
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TERMINOLOGY

Category SMP	Category Site Management Plan. A separate SMP has been prepared for each risk category: high risk, medium risk and low risk. The category SMPs set out the measures that need to be put in place during earthworks to manage the risks posed by potentially contaminated land.
NES Soil Regulations	National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011.
Users' Guide	A guidance document (*CIAL Users' Guide – Contaminated Land)* put together by CIAL to support CIAL employees and its site users/stakeholders to manage the disturbance of soil in the area covered under resource consent RMA2016884.
HAIL	Hazardous Activities and Industries List. A compilation by the Ministry for the Environment of activities and industries that are considered likely to cause land contamination resulting from hazardous substance use, storage or disposal.
PSI	Preliminary Site Investigation.
Risk category	HAIL activities identified in the PSI have been classified based on likely risk to human health. Based on the nature and occurrence of HAIL activities, the Airport campus has been subdivided into three categories of declining risk (high, medium, low). The HAIL activities for each risk category are set out in the respective category SMP.
Risk Category Maps	Maps showing the boundary of each risk category available on the CIAL website for Contractors and Suppliers.
SMP	Site Management Plan.
SQEP	Suitably Qualified Environmental Practitioner.

1 INTRODUCTION

This Site Management Plan (SMP) is for ground disturbance at 850 ha of the Christchurch International Airport campus (the site) that is covered under a global resource consent for soil disturbance activities. The site comprises 106 parcels in western Christchurch. Christchurch International Airport Limited (CIAL) owns the land area covered under the consent, which comprises the airport and associated operations, leased commercial land, undeveloped areas, and roadways. However tenants manage operations at their respective leased sites. The extent of the site boundary is shown in Figure 1 of the Risk Category Maps[1].

Soil disturbance may be required during operations at the site, which include airport maintenance and expansion projects, and the development of commercial land and associated roadways. This SMP has been prepared to provide procedures for the appropriate excavation, handling and disposal of potentially contaminated materials that may be encountered when disturbing soils at the site.

This document is structured as follows:

- **Section 2** provides a background to this SMP, including resource consent RMA2016884, the Preliminary Site Investigation underlying this SMP, and updates that have been made to the SMP and Risk Category Maps post 2016.
- **Section 3** summarises the objective and scope of the category SMPs, and the processes, roles and responsibilities of working under these plans.
- **Section 4** provides a summary of each category SMP.
- **Section 5** contains the verification and reporting required under this document.
- **Section 6** summarises general matters related to this SMP, including the applicability of the SMPs and relation to other processes, matters relating to the distribution and review of the SMP, and the regulatory context for this document.

This overarching SMP document should be read together with category SMP and the Risk Category Maps available on the CIAL website for Contractors and Suppliers.

2 BACKGROUND TO THE SITE MANAGEMENT PLANS

2.1 RESOURCE CONSENT

CIAL holds a global resource consent (RMA2016884) with the Christchurch City Council (CCC) to disturb potentially contaminated soil, remove or replace fuel storage systems, as well as routine works and other earthworks on the land under NES Soil Regulations[2]. This SMP meets the resource consent conditions and will need to be applied during all works which involve ground disturbance.

[1] Any sites located outside the site boundary shown on Figure 1 of the Risk Category Maps is not covered by the global NES Soil resource consent and will need to be addressed separately.
[2] National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011.

2.2 PRELIMINARY SITE INVESTIGATION

Tonkin & Taylor Ltd (T+T) prepared a 2016 Preliminary Site Investigation (PSI)[3] to identify current or historical uses at the site with the potential to cause ground contamination, and the likely nature and extent of contamination. The PSI identified several uses that are included on the Ministry for the Environment's Hazardous Activities and Industries List (HAIL)[4]. The findings of the PSI form the basis for this SMP.

The general findings of the PSI are summarised below:

- The Airport campus was primarily used for agricultural activities prior its development in 1937;
- In 1940, the Airport was converted to a RNZAF elementary flying school. A bomb squadron was established on the site in the event of an enemy attack. Shooting and grenade throwing training was also reported to have occurred within the site;
- Post-WW2, the airport was developed as an international airport; and
- The land surrounding the Airport campus was incrementally acquired to accommodate airport expansion and the development of adjacent parcels for commercial tenancy.

In order to efficiently and consistently address the management of potentially contaminated areas across the Christchurch International Airport campus, a whole site risk-based management approach has been developed. HAIL activities identified in the PSI have been classified based on likely risk to human health (refer PSI Table 4.1). Based on the nature and occurrence of HAIL activities, the Airport campus has been subdivided into three management categories of declining risk.

Risk Category Maps and category SMPs have been produced for each risk management category.

2.3 UPDATES TO THE SMP

As new investigations were undertaken post-2016 this new information was used to update the Risk Category Maps in 2019. Both the SMP and associated Risk Category Maps are available on the airport website for contractors to access and implement during soil disturbance projects. The reports gathered since 2019 have been used in updating the Risk Category Maps in this 2024 version of the SMP.

Due to the nature of chemicals produced and used globally and the developing understanding of the impacts of the chemicals on human health and the environment, there is a growing awareness of emerging contaminants. This version of the SMP includes emerging contaminants, specifically Per- and Poly-Fluoroalkyl Substances (PFAS). Information on PFAS use within the airport campus is informed by the 2024 GHD Ltd PFAS Baseline report[5]. The GHD report provides an overview of the historical uses and locations at the airport where PFAS may be a contaminant of concern.

[3] Tonkin & Taylor, March 2016. Preliminary Site Investigation for Ground Contamination, Christchurch International Airport, prepared for CIAL.
[4] Hazardous Activities and Industries List, Ministry for the Environment, 2011.
[5] GHD Ltd, September 2024. Baseline Report: The Implications of the Historical Use of PFAS Containing Products at Christchurch International Airport

3 WORKING UNDER SITE MANAGEMENT PLANS

3.1 OBJECTIVE OF THE SMP

The objective of the SMP is to provide procedures for the excavation, handling and disposal of contaminated soil encountered during maintenance and capital works projects, to minimise adverse effects on human health, and manage discharges to the environment.

Separate SMPs have been prepared for each management category. The category SMPs provide management and health and safety procedures that have been designed to reflect the likelihood of encountering ground contamination in the area and the potential risk to human health.

3.2 SCOPE OF THE SMP

The category SMPs provide procedures for:

- Undertaking excavations in areas potentially containing contaminated soils;
- Identifying the presence of contaminants;
- Managing and containing contaminated soils encountered/excavated during soil disturbance works;
- Managing potential nuisance effects during the works such as odour, dust and tracked soil;
- Managing health and safety during the works associated with potentially contaminated soil;
- Undertaking validation soil sampling to assess whether soils remaining on site are compliant with use criteria;
- Monitoring the works to ensure that works are undertaken in accordance with the SMP; and
- Determining the appropriate disposal location of surplus soils.

The category SMPs should be read in conjunction with the applicable findings of the PSI.

This SMP is not intended to cover the management of non-soil waste materials, such as removed pipe work or other infrastructure materials. It does however cover the handling and disposal procedures for asbestos containing materials (ACM) such as asbestos cement pipes.

3.3 RISK CATEGORY MAPS

The Risk Category Zoning Maps are based on a combination of sub-layers which include HAIL activities, previous investigations and the potential for emerging contaminants to be present. The emerging contaminants sub-layer will be updated as new information or emerging contaminants is acquired, and at this stage currently covers areas of PFAS use only.

3.4 APPLYING THE CATEGORY SMPS

Prior to works commencing, the party undertaking the works is to ascertain (via the Risk Category Maps[6]) which category applies to a proposed work area and notify the Contractor, who shall apply the appropriate SMP for all soil disturbance works. Guidance on which Site Management Plan, or which other

[6] christchurchairport.co.nz/globalassets/about-us/doing-business-with-us/contractors-and-suppliers/contaminated-soil-risk-category-maps.pdf

management measures, are applicable is contained in Section 3.1 of the Users' Guide[7], and in Figure 1 below.

Several areas have been used for multiple HAIL activities that have been classified in different risk categories (e.g. fuel storage and persistent pesticide use). Where a work area contains more than one category, the category SMP for the highest risk category shall be used.

Ground contamination investigations have been undertaken on a number of HAIL sites within the Airport campus. These investigations have not been assessed for methodology, results, or reliability. Additionally, the suitability of the sampling program will be highly dependent on the development plan and proposed use of the area. The CIAL Environment and Planning team may choose to review these reports to refine the risk classification selection for a particular work area. If the final classification differs from the categorisation above and in the Risk Categorisation Flow Chart (see **Figure 1** below), a rationale for the selection shall be included in reporting to CCC. Consultation between CIAL and the relevant Contaminated Land Specialist for that specific project must be undertaken if existing reports are used to modify an area classification.

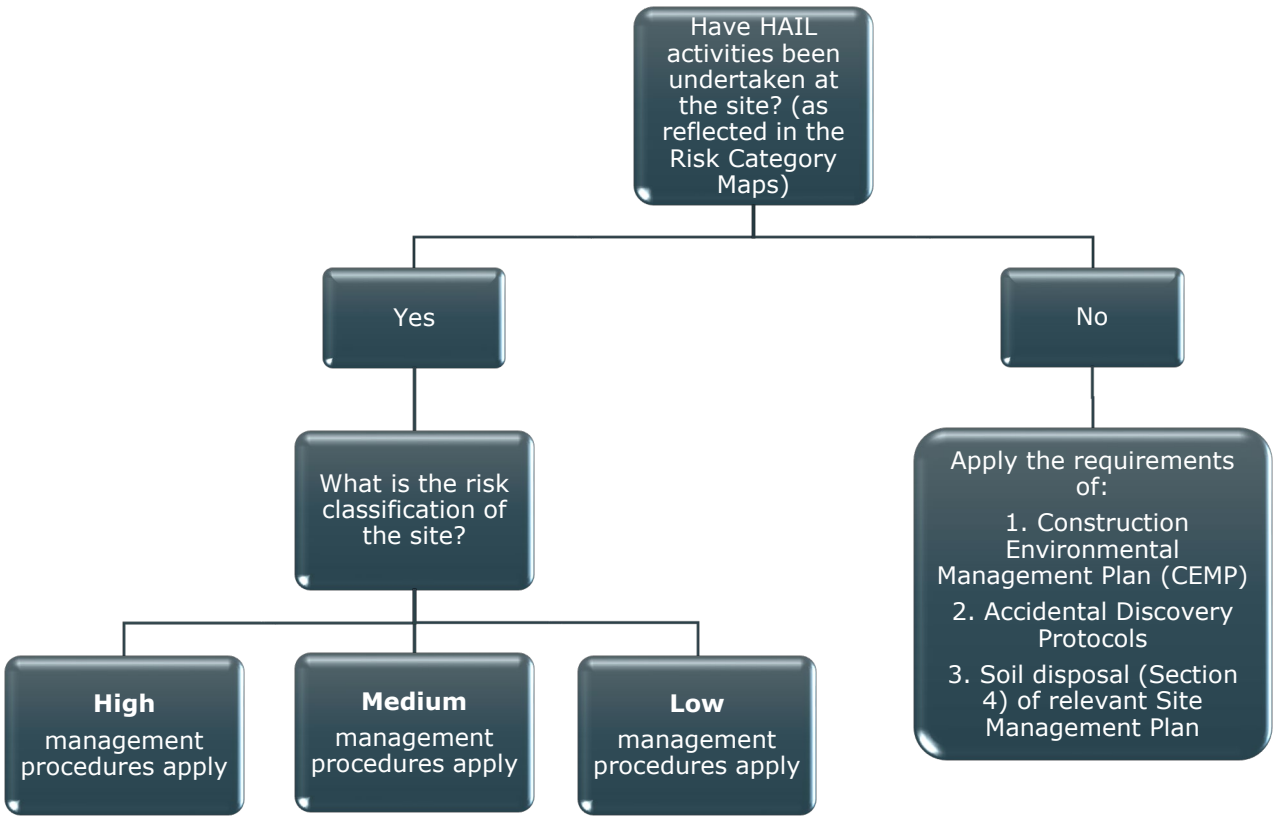

Figure 1: *Christchurch Airport earthworks management measures*

3.5 ROLES AND RESPONSIBILITIES

CIAL shall be responsible for:

- Distributing to the Contaminated Land Specialist any relevant reports from previous investigations that intersect proposed works.

[7] Enviser, November 2024, *CIAL Users' Guide – Contaminated Land,* prepared for CIAL

- Distributing the appropriate SMP to site contractors carrying out works;
- Compiling a report every six months for provision to CCC, as per Condition 4 of resource consent RMA2016884.
- Updating the SMP as necessary and ensuring any updated versions are provided to CCC and Contractors; and
- Providing advice and guidance to the project team as required on the application of the SMPs.

The Contractor is responsible for:

- Identifying the appropriate category SMP using the Contaminated Soil Risk Category Maps;
- Designating a Site Environmental Supervisor and Health and Safety Officer;
- Ensuring that all site staff and subcontractors understand and comply with the procedures and the health and safety requirements;
- Ensure the most recent updated copy of the SMP is kept at the work area;
- Implementing the required management procedures and health and safety controls as set out in the relevant category SMP;
- Ensuring that the site works are undertaken in accordance with this document and the category SMP;
- Notifying the Contaminated Land Specialist prior to commencing works that require observation; and
- Submitting to CIAL the verification documentation as set out in Section 5 of this document.

A Contaminated Land Specialist will need to be appointed provide training and inductions to site personnel, and provide contaminated land-related advice during works.

For further information, please refer to Appendix 1 of the Users' Guide.

3.5.1 PROJECT ORGANISATION

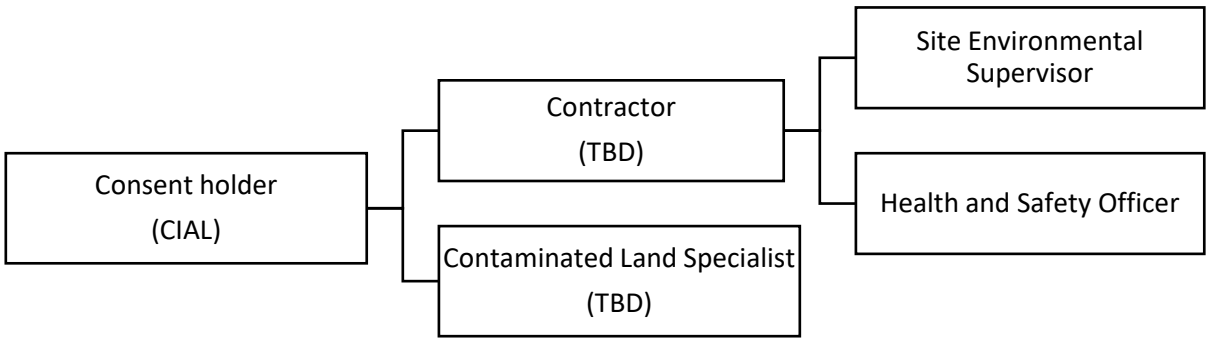

Figure 2: *Project organisation and required personnel.*

3.6 REQUIRED SITE PERSONNEL

3.6.1 CONTAMINATED LAND SPECIALIST

The Contaminated Land Specialist is engaged by CIAL to provide technical expertise as needed in the identification and disposal of contaminated soil under the guidance of a Suitably Qualified and Experienced Practitioner (SQEP, see Section 2.3.2). For the purposes of this SMP the Contaminated Land Specialist shall meet the following criteria:

> *The Contaminated Land Specialist shall be a person who is qualified to undertake a detailed site investigation (supervised) and who should have at least tertiary education in environmental science or engineering or a related field and two or more years of professional experience in environmental investigations and risk assessment.*

The Contaminated Land Specialist shall provide training to the Site Environmental Supervisor/Site Project Manager/Foreman on likely contaminants at the site, indicators of contamination, and the contents of the SMP. Additionally, at the commencement of works, all site staff shall be inducted by the Contaminated Land Specialist on appropriate personal protective equipment (PPE) use and indicators of contamination.

3.6.2 SUITABLY QUALIFIED & EXPERIENCE PRACTITIONER (SQEP)

The Contaminated Land Specialist should be guided by a SQEP in contaminated land. A SQEP is considered to meet the following criteria as set out in the NES Users' Guide:

- Relevant tertiary education in environmental science or engineering
- The person certifying the report has at least 10 years' experience
- Ideally the certifier is a member of a recognised professional body, such as a Certified Environmental Practitioner) through the Environment Institute of Australia and New Zealand (EIANZ) or Engineering New Zealand

The SQEP should review and approve advice on soil disposal in conjunction with CIAL prior to any soil being removed from the site.

3.6.3 SITE ENVIRONMENTAL SUPERVISOR

Prior to commencing any physical works on site, the Contractor shall nominate a Site Environmental Supervisor, who will receive training from the Contaminated Land Specialist on likely contaminants at the site, identification of contaminated materials, and the contents of the SMP. The Site Environmental Supervisor shall be responsible for ensuring that all requirements of this SMP are complied with, in particular:

- Conducting site inspections (regular inspections on Medium Risk Category areas, daily inspections on High Risk Category areas);
- The timely securing of permissions and documentation to dispose spoil material at appropriate disposal facilities;
- Notifying of CIAL and the Contaminated Land Specialist if suspected ground contamination is encountered;
- Collating and summarising tracking documentation detailing the disposal of contaminated materials; and
- Complying with building and resource consent conditions during the construction works.

3.6.4 HEALTH AND SAFETY OFFICER

An Environmental and Health and Safety Officer (HSO) shall be appointed by the Contractor for the duration of the works to ensure that contaminated land-related health and safety procedures are adhered to, alongside of those required under the Contractor's own Health and Safety Plan. The HSO shall have basic first aid training.

The HSO shall ensure that all relevant personnel are familiar with the application and use of the procedures and any PPE specified in this SMP before commencement of site work.

4 SITE MANAGEMENT CATEGORIES

Maps identifying the presence and extent of known HAIL activities at the Airport campus are provided with the Risk Category Zone Maps. A summary of each of these activities, the type of contamination they produce, identification of that contamination and the specific procedures required for soil management are outlined in Table 1.1 of each category SMP. These procedures are in addition to the general, site-wide procedures. Please refer to the relevant category SMP for further information.

4.1 UNCATEGORISED SITES

Where no risk category intersects with a site, this means that there was no information found to suggest that current or historic activities have /has occurred on the site with the potential to cause ground contamination.

This does not definitively mean the ground is not contaminated. For this land, Accidental Discovery Protocols (Appendix 1) apply in the case unexpected ground contamination is encountered during the works. Contractors should be aware of the potential for unforeseen contamination to exist and be prepared to implement additional procedures if required by the contaminated land specialist.

The process contained in the flow chart in Figure 1 above and in the Users' Guide should be followed for all uncategorised sites.

5 VERIFICATION AND REPORTING

Verification is the process of confirming the objectives of the works have been achieved, and confirming works were undertaken according to agreed procedures and reporting requirements.

Verification shall be carried out on all work areas, with validation sampling carried out where evidence of contamination has been identified.

The verification and reporting tasks required under this SMP are set out below.

5.1 REPORTING TO CIAL

A Works Verification Form (Appendix 2) will form the basis of the verification process and will be completed by the Contractor within one week of completion of the works. For projects where soil movement occurs in stages, the information below relating to soil movement shall be provided to CIAL within one week of the soil being moved off site.

If sampling is required, this will be undertaken by the Contaminated Land Specialist in accordance with the procedures outlined in Section 5.3. The Works Verification Form shall be submitted by the Contractor to CIAL's Environment and Planning Team. The Works Verification Form addresses the following:

- Confirmation that the soil disturbance works are complete;
- Confirmation if contaminated material was encountered or not during the works;
- Confirmation that soil disturbance works were completed according to this SMP and that there were no variations during the works;
- Confirmation that there were no environmental incidents during the works. If there was an environmental incident, then a letter shall detail the nature of the incident and the measures taken to mitigate effects;
- Results of any contamination tests undertaken; and
- Confirmation of the disposal destination of clean and contaminated soils, the verification test results undertaken for disposal permitting and confirmation of acceptance by the receiving fill facility.

Appended to the Works Verification Form will be copies of any laboratory results and contractor information as required below.

5.2 INFORMATION REQUIRED FROM THE CONTRACTOR

The following information, where not included specifically in the Works Verification Form, will be appended to the form and kept on file by CIAL's Environment and Planning Team. The information requirements are:

- Copies of weigh bridge summaries for the disposal destination for contaminated soil;
- Disposal volumes for natural soil removed and disposed;
- Records of visits by council representatives;
- Details of any complaints; and
- Details of any health and safety incident related to the contamination and how they were resolved.

The Contractor shall provide the required information within one month of completion of the works to which the information relates.

5.3 VALIDATION SAMPLING

As wide-scale remedial actions are not expected, and most of the site is likely to be sealed on the completion of works, validation sampling is not generally required. One notable exception will be if unexpected contamination is identified that may present a risk to future users of the site or groundwater or surface water discharges. If the Contaminated Land Specialist deems that validation sampling is required for a specific project, this will be carried out in accordance with the soil sampling procedures outlined in the relevant sections of each category SMP.

5.4 CIAL REPORTING TO CHRISTCHURCH CITY COUNCIL

A report shall be compiled every six months and provided to the CCC[8]. The report shall be compiled by CIAL outlining the works undertaken in the previous six-month period and any particular issues that arose.

The report shall cover all works aside from minor works meeting the permitted levels in the NES Soil Regulations. The report shall include the following:

- A brief description of each project;
- An approximate volume of soil disturbed for each project;
- An approximate volume of soil moved off site or within the airport site for each project; and
- Any additional remedial works or management required.

Contractors undertaking soil disturbance works will provide CIAL copies of all reports documenting the sampling, analysis, assessment, or disposal of any contaminated materials encountered. These reports will include information relating to the location, type and depths of contamination observed (if any), photographs, surrounding land uses and any monitoring/validation (if any).

[8] Marked for the attention of Team Leader Environmental Compliance Team (envhealthrcbc@ccc.govt.nz).

6 GENERAL REQUIREMENTS FOR WORKING UNDER THIS DOCUMENT

6.1 APPLICABILITY

The SMPs referred to in this document provide a framework for managing soil contamination hazards on site by identifying potential hazards and detailing mitigation measures. They provide information and recommendations to augment this process but are not intended to relieve the Contractor or the Principal of their responsibility for the health and safety of their workers, contractors and the public, or their responsibility for protection of the environment.

The provisions of the applicable SMP are mandatory for all persons (employees, contractor and sub-contractors) who will be involved in undertaking any of the proposed works.

Anyone undertaking such soil disturbance works should also refer to the separate CIAL document for the Users' Guide.

It is recommended that any persons undertaking works develop a site specific safety plan (SSSP) or job safety assessment (JSA) to complement the SMP and to address other health and safety requirements that may be applicable to their particular works. This plan should also be modified to address any specific health, safety or environmental issues that may arise during the works.

From time to time, statutory requirements, site occupation, operating procedures or site conditions may vary and will require that this plan be amended or updated.

6.2 DISTRIBUTION

The following parties have been provided with this SMP and the three category-specific SMP's:

- CIAL; and
- CCC.

A copy of the SMP shall be kept at the work area at all times.

6.3 REVIEW AND UPDATE

The consent conditions require this SMP to be updated by a SQEP and is now required to be reviewed every five years.

Any variations to the SMP shall be provided to CCC prior to implementation. Any changes made shall not reduce the level of control of the works without good evidence that this is acceptable.

It is the responsibility of CIAL to distribute updated versions of the SMP and to ensure the correct copy of the report is on site at all times.

6.4 REGULATORY CONTEXT

This document and associated Category SMP's have been prepared in general accordance with Ministry for the Environment Contamination Land Management Guidelines No.1 – *Guidelines for Consultants*

Reporting on Contaminated Sites in New Zealand. Sampling procedures provided in the plans generally comply with the MfE Contamination Land Management Guidelines No.5 – *Site Investigation and Analysis of Soils*.

The plans are also prepared in general accordance with the soil disturbance related controls referred to in the NES Soil Regulations. The persons preparing and certifying these SMP's are suitably qualified and experienced practitioners as required by the NES Soil Regulations and defined in the NES Soil Users' Guide (April 2012).

Where applicable for emerging contaminants, the latest accepted national guidance document will be followed in accordance with *Contaminated Land Guidelines No.2 – Hierarchy and Application in New Zealand of Environmental Guideline Values*.

APPENDICES

APPENDIX 1. Accidental Discovery Protocol

CONTAMINATED SOIL

ACCIDENTAL DISCOVERY PROTOCOL

What happens if we dig up something that isn't soil or it looks and smells strange?

1. STOP excavation within a 20m radius;
2. Advise the site supervisor of the discovery;
3. The site supervisor shall contact the **CIAL Project Manager;**
4. The CIAL Project Manager will contact a **Contaminated Land Specialist;**
5. Update site hazard board identifying exclusion zone;
6. The Contaminated Land Specialist will provide advice on the soil and outline what steps are to be taken, this may require a site visit;
7. Implement health and safety procedures and environmental controls as advised by the Contaminated Land Specialist.

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APPENDIX 2. Works Verification Form

Project Details			
Project Name		Principal Contractor	
		Earthworks Contractor	
Project Location		Commencement of earthworks	
Other Resource Consents Relevant to project		Completion of earthworks	
Risk Category Zoning (Low/Med/High)			
Summary of works			
Details of contaminated soil investigations completed as part of the project (DSI, Soil testing results).			
Details of the Contractors Contaminated Land Briefing (date, location, by who)			
Soil Movements			
Approx. volume of total soil disturbance (m^3)			
Approx. volume of soil relocated within the airport campus (m^3)		Airport campus deposition location	
Approx. volume of soil moved offsite (m^3)		Disposal Location(s)	
Approx. volume of imported material (m^3)		Source of imported material(s)	
Additional Soil Management			
Detail of additional soil management required			
Contaminated Land Inspections?			
Accidental Discovery Protocol used? If yes, provide details			
Form completed by		Date	
Project Manager		Signed	
Contaminated Land Specialist (if applies)		Signed	


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