

# APPENDIX THIRTEEN

## CONTAMINATED SITE MANAGEMENT PLAN



# Contaminated Soil Management Plan

Shelly Bay Re-development

NZ0122039



Prepared for  
Shelly Bay Taikuru Ltd

7 September 2021

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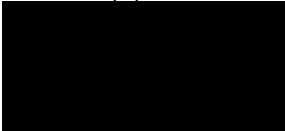
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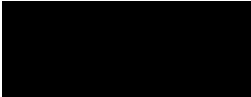
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## Document History

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Our report is based on information made available by the client. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Cardno is both complete and accurate. Whilst, to the best of our knowledge, the information contained in this report is accurate at the date of issue, changes may occur to the site conditions, the site context or the applicable planning framework. This report should not be used after any such changes without consulting the provider of the report or a suitably qualified person.

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# 1 Introduction

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Shelly Bay Taikuru Ltd has engaged Cardno NZ Ltd (Cardno) to develop a Contaminated Soil Management Plan (CSMP) for earthworks associated with the redevelopment at Shelly Bay, Miramar Peninsula, Wellington. The proposed redevelopment site is shown in Figure 2-1 (herein known as the site). The site currently includes a number of buildings associated with the former RNZAF base, which the site previously accommodated. There are a small number of businesses currently occupying the site, including a café and gallery.

The redevelopment of the site involves removal of some of the current buildings and replacing them with a mix of residential and commercial units including a boutique hotel.

Wellington City Council (WCC) resource consent for the redevelopment requires a CSMP to be prepared by a suitably qualified and experienced practitioner (SQEP) with experience in the management of contaminated sites and submitted to council for review and certification. The CSMP must be submitted and certified to WCC prior to the commencement of works on the site. The CSMP has also been drafted to accompany the resource consent application to Greater Wellington Regional Council.

This document outlines the management and control measures to be implemented prior to earthworks, during excavation, and for the handling, storage and removal of soil. This is to be treated as a live document, which is to be updated as appropriate where site conditions or excavation plans change.

## 1.1 Background

Potential for contamination at the site has been identified in two previous reports by AECOM in 2016<sup>1</sup> and Jacobs in 2018<sup>2</sup>. The AECOM (2016) report is a Preliminary Site Investigation (PSI), which investigated the extent of the site covered by the former RNZAF base, including the areas known as South Bay and North Bay, the former rifle range and the inner and outer wharf area west of Shelly Bay Road (consisting of the wharfs, stores building and workshop, slipway and former fuel storage tanks). The PSI investigation also included limited sampling. The Jacobs (2018) report focused on an area of Wellington City Council land within South Bay and included soil sampling and analysis for asbestos and lead. Both of the reports identified areas where historic activities have occurred that may have resulted in contamination to soil.

These activities include the following:

- > Site transformers
- > Operation of two boiler rooms and storage of coal
- > Presence of an interceptor and grease trap
- > Wastewater treatment plant and septic tanks
- > Storage of paint
- > Bulk storage of petroleum hydrocarbons
- > Maintenance of marine vessels
- > Lead paint and asbestos containing materials associated with buildings.

## 1.2 Purpose

This document provides a site management strategy for earthworks associated with the Shelly Bay development to demonstrate how the goals will be achieved onsite through the completion of a combination of tasks while maintaining compliance with requirements under the Resource Management (National Environmental Standard for Assessment and Managing Contaminants in Soil to Protect Human Health)

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<sup>1</sup> AECOM, 2016, Former Shelly Bay RNZAF Base, Shelly Bay Road, Wellington, letter dated 15 February 2016, addressed to The Wellington Company.

<sup>2</sup> Jacobs, 2018, Shelly Bay Development Soil Contamination Investigation South Bay, Ref: IZ109200-002-NG-RPT-0001/01 dated 4 October 2018.

Regulations 2001 (NESCS) and the MfE documents for contaminated land<sup>3</sup> and hazardous waste disposal<sup>4</sup>. The following are the objectives of this document:

- > Soil handling measures to reduce human health risks from exposure due to ingestion, inhalation, dermal exposure or from contact interaction with the soil profile, groundwater flow or surface water flows;
- > Safe excavation of soil to remove harm to site workers and prevention of migration of contaminants off-site;
- > Process for identifying the presence of contamination during earthworks and management procedures; and
- > If soil to be removed from site, responsible haulage and disposal of impacted material to the appropriate facility through good practice and waste tracking.

In addition, provided in Appendix A of this document is a Sampling and Analysis Plan (SAP) providing soil sampling and analysis that should be undertaken prior to earthworks. The SAP includes requirements for soil testing in areas of environmental concern across the site including within gardens and public spaces. Once the sampling has been completed this CSMP should be reassessed against the results and updated where required.

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<sup>3</sup> MfE (2011a). Contaminated Land Management Guidelines No. 1 – Reporting on Contaminated Site in New Zealand, Ministry for the Environment, Wellington, New Zealand, Revised in 2021.

MfE (2011b). Contaminated Site Management Guidelines No. 2 - Hierarchy and Application in New Zealand of Environmental Guideline Values, Ministry for the Environment, Wellington, New Zealand, Revised in 2011.

MfE (2011c). Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils. Ministry for the Environment, Wellington, New Zealand, Revised in 2021.

<sup>4</sup> MfE (2004). Module 2 – Hazardous waste guidelines: Landfill waste acceptance criteria and landfill classification, ME 510, Ministry for the Environment, New Zealand.

## 2 Site Location and Proposed Design

The Shelly Bay redevelopment site is approximately 12.4 hectares and is located on the western side of Miramar Peninsula / Te Motu Kairangi consisting of the following lots:

- > Lots 1 – 8 DP 515825
- > Lot 100 DP 515825
- > Section 3 – 6 SO 339948
- > Section 10 SO 339948
- > Section 100 SO 528811
- > Lot 906 DP 548924
- > Lots 13 – 24 DP 548924
- > Section 1 SO 419545

The location and extent (in white) of the proposed development is shown on Figure 2-1 and does not include the former RNZAF rifle range to the east. The majority of the area to be redeveloped is relatively flat with hills to the east and south.

Figure 2-1 Site Location Plan



The development will include demolition of all buildings on the Site with the exception of the two west of Shelly Bay Road, and earthworks involving cut and fill for levelling of building platforms and landscaping. A number of residential and commercial units are proposed with the building outlines demonstrated in the master plan, Appendix B.

The two buildings west of Shelly Bay Road will be retained. The slipway will also be retained and undisturbed. The remaining area (minus the wharfs<sup>5</sup>) will be resurfaced in hard-standing with some smaller landscaped areas. To the southwest of this area, another public space consisting of a village green is proposed. Shelly Bay Road will be reconfigured to the north of the village green.

### 3 Health and Safety

This CSMP is not a health and safety document, or a replacement for a Safe Work Method Statement (SWMS) or Job Safety Analysis (JSA), rather it should be referred to in accordance with a SWMS or JSA specific to the site. However, the following information should be included in the SWMS and JSA and be part of the site induction during earthworks:

- > Direct contact with soil should be avoided and all staff entering the site should be dressed in appropriate PPE, including full length sleeves and pants, and gloves if handling soil;
- > To avoid ingestion of soil, staff should wash hands and face prior to eating and when leaving the site and clothing and PPE should be treated as potentially contaminated; and
- > If unexpected contamination is encountered such as, stained ground, odorous material or asbestos material, work should be stopped and the site supervisor notified. The contamination should be inspected in consultation with an SQEP regarding appropriate management measures.

### 4 Roles and Responsibilities

Prior to the commencement of the works under this CSMP, a list detailing emergency contacts must be provided in the SWMS or JSA. The list must detail the relevant contact person for the works being undertaken onsite, and the following parties (where relevant).

Contact List for Site Operations

Contacts List
Project Manager:
Main Contractor:
Site Supervisor:
Pollution Hotline (24 hours): 0800 496 734
Receiving Landfill Manager:
SQEP:

<sup>5</sup> The wharfs are to be removed separately under another resource consent and not included in this CSMP.



## 5 Remediation Procedures

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### 5.1 Management Measures

The following management measures have been based solely on information provided by the client for the excavation and works method. This document should be updated if the excavation methodology changes or if additional unexpected contamination is encountered on site.

The following tasks and actions required to achieve the performance outcomes for this CSMP are summarised in this section. For ease of implementation, the management actions have been separated into three categories:

- > Pre-excavation works;
- > Excavation works; and
- > Reinstatement works.

Table 5-1 General Procedures Prior to Excavation Work

Task	Action	Timing	Responsibility
Preliminary soil testing	<ul style="list-style-type: none"> <li>&gt; Areas of environmental concern have been identified at the site where further testing is to be conducted for characterisation of subsurface conditions at the site. A SAP is presented in Appendix A describing the proposed soil testing locations and analysis to be undertaken prior to disturbance of soil at the site.</li> <li>&gt; Update this CSMP as required with any additional controls/management or remediation actions as an outcome of the soil testing results.</li> </ul>	Prior to excavation works.	Project manager, SQEP and site supervisor.
Soil Removal and Waste Acceptance	<ul style="list-style-type: none"> <li>&gt; If soil is to be removed from the site, the analysis results from the preliminary soil testing will need to be made available to the receiving facility. If the results exceed background concentrations (cleanfill guidelines) the material must be disposed to a facility licensed to accept the waste (e.g. Southern Landfill or Silverstream Landfill). The results will need to be presented to the receiving landfill prior to material leaving site.</li> <li>&gt; Waste tracking documentation will need to be prepared to travel with each load of soil leaving the site for the landfill. Appendix C presents an example of the information that will need to be included.</li> </ul>	Prior to excavation works.	Earthworks contractor and site supervisor.
Cordoning off of Remediation Area	<ul style="list-style-type: none"> <li>&gt; Ensure that the works area is appropriately cordoned off.</li> <li>&gt; Ensure appropriate signage is in place to prevent non-essential staff or public from entry to the works area.</li> </ul>	Prior to excavation works.	Earthworks contractor and site supervisor.
Silt Fencing	<ul style="list-style-type: none"> <li>&gt; Erect silt fencing where needed to avoid movement of sediment off site via overflow pathways.</li> </ul>	Prior to excavation works.	Earthworks contractor and site supervisor.
Monitoring, Record Keeping and Incident Reporting	<ul style="list-style-type: none"> <li>&gt; Records to be kept of any environmental site incidents or unexpected contamination.</li> <li>&gt; Records to be provided to authorities on request or as per consent conditions.</li> </ul>	Prior to excavation works.	Earthworks contractor and site supervisor.

Table 5-2 Procedures for Excavation Works

Task	Action	Timing	Responsibility
Unexpected contamination	<ul style="list-style-type: none"> <li>&gt; If buried waste material or soil with chemical staining or odour is uncovered, work should cease while the site manager inspects. If contamination is suspected the project SQEP is to be notified to inspect and collect soil samples.</li> <li>&gt; The SQEP will stop work on the site if contaminants are found that could affect public health, safety and the environment. The SQEP is then to prepare a report on remediation/containment measures and to have the report peer reviewed, followed by implementation of remediation/containment measures upon which the stop work notice can be uplifted.</li> <li>&gt; If the SQEP finds contamination not to be significant, and material needs to be removed immediately it should be stored on site within a sealed bunded area (such as temporary earth bund with thick waterproof sheeting underneath) or within sealed skip bins until soil can be removed and disposed of to a facility licensed to accept it. Soil validation samples to be collected as directed by SQEP once material is removed.</li> </ul>	Ongoing during excavation works.	Earthworks contractor, project manager, site supervisor and project SQEP.
Intercepting groundwater	<ul style="list-style-type: none"> <li>&gt; Groundwater dewatering is covered under the Earthworks and Construction Management Plan (ECMP)<sup>6</sup>.</li> <li>&gt; Groundwater is to be assessed by the project SQEP if further soil testing indicates groundwater contamination, or if unexpected contamination is encountered during earthworks. The assessment will be carried out to verify levels of contamination and allow appropriate planning for design of the dewatering system. The ECMP will be updated with any additional dewatering requirements.</li> </ul>	Ongoing during excavation works	Earthworks contractor, project manager, site supervisor and project SQEP.
Stormwater management	<ul style="list-style-type: none"> <li>&gt; Inspection of silt fences after extreme rainfall event to access stability of the fencing. Repairs to be undertaken if required.</li> <li>&gt; If water ponding within excavations are evident following heavy rainfall, water should be treated as contaminated and removed appropriately to a secure container. Water is then to be disposed of as contaminated at a facility licensed to accept such waste.</li> </ul>	Ongoing during excavation works.	Earthworks contractor.

<sup>6</sup> Envelope Engineering, 2021, Earthworks and Construction Management Plan, Shelly Bay Taikuru

Stockpiling and migration off site in adverse weather conditions	<ul style="list-style-type: none"> <li>&gt; If soil is stockpiled on site, cover during adverse weather (high wind/heavy rainfall) to avoid dust generation and/or stormwater runoff.</li> <li>&gt; If earthworks are causing dust generation, the site should be dampened down to reduce dust generation from vehicle movement.</li> <li>&gt; Earthworks should cease in conditions where high winds are causing migration of dust from site.</li> </ul>	Ongoing during excavation works.	Earthworks contractor and site supervisor.
Mobilisation of soils off site via vehicles and equipment.	<ul style="list-style-type: none"> <li>&gt; Ensure equipment required for excavation is cleaned prior to leaving site.</li> <li>&gt; Avoid unnecessary vehicles moving across the site.</li> <li>&gt; Check wheels/wheel wells are free of excess soil prior to leaving site.</li> </ul>	During excavation works.	Earthworks contractor and site supervisor.
Soil leaving site and waste tracking	<ul style="list-style-type: none"> <li>&gt; The soil results must be reviewed by the receiving landfill with an estimate of waste volume/weight prior to soil leaving site.</li> <li>&gt; A special waste application number will be assigned by the landfill, which will need to be included in waste tracking documentation.</li> <li>&gt; Waste tracking documentation will need to be prepared to travel with each load of soil leaving the site for the landfill. Appendix C presents an example of the information that will need to be included.</li> <li>&gt; The tracking docket should be signed off as the haulage truck leaves the site and on arrival at the landfill.</li> <li>&gt; Disposal of contaminated soil off site, including its quantity, evidence of acceptance and copies of the tip tickets, shall be submitted in writing to the Council's Compliance Monitoring Officer.</li> </ul>	Ongoing during excavation works.	Haulage truck drivers and site supervisor.
Monitoring, Record Keeping and Incident Reporting	<ul style="list-style-type: none"> <li>&gt; Records to be kept of any environmental site incidents or unexpected contamination.</li> <li>&gt; Records to be provided to Council's Compliance Monitoring Officer on request or as per consent conditions.</li> <li>&gt; Council's Compliance Monitoring Officer to be notified in writing of a stop work notice issued by the SQEP within 24 hours.</li> </ul>	Ongoing during excavation works.	Earthworks contractor, site supervisor.

Table 5-3 Procedures for Re-instatement of Soil

Task	Action	Timing	Responsibility
Re-levelling and reinstatement of surface.	<ul style="list-style-type: none"> <li>&gt; Ground to be left in the same state as prior to excavation works.</li> <li>&gt; Silt fencing to be removed only when ground has stabilised.</li> </ul>	During reinstatement of the land remediation.	Earthworks contractor.
Monitoring	<ul style="list-style-type: none"> <li>&gt; Records to be kept of any environmental site incidents or unexpected contamination.</li> <li>&gt; Records to be provided to Council's Compliance Monitoring Officer on request or as per consent conditions.</li> </ul>	During reinstatement.	Earthworks contractor, and site supervisor.
Soil validation reporting	<ul style="list-style-type: none"> <li>&gt; Reporting of remediation and soil validation sampling results (if required during works). Validation reports to be provided to the consenting authorities Compliance Monitoring Officer.</li> <li>&gt; A Soil Validation Report (SVR) documenting the implementation of the CSMP shall be provided to the CMO within 2 calendar months of completion of each stage of the earthworks.</li> </ul>	Post excavation works	Project Manager and SQEP.

## 6 Non-Compliance and Corrective Action

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### 6.1 Complaints Handling

The site supervisor is responsible for ensuring that all complaints are recorded and a suitably qualified person is allocated to deal with them.

### 6.2 Immediate Action for Adverse Effects

The following actions are to be taken immediately following a complaint:

- > Fill out the complaints register form with all the details of the person or authority issuing the complaint;
- > Undertake a site inspection as soon as the complaint is made and make a note of all dust and debris producing activities taking place, and the control measures being used;
- > Make a note of the weather conditions including wind strength, direction and rainfall;
- > Photograph the source if possible; and
- > After primary investigations have been completed contact the complainant to explain the problem and control measures taken against the issue.

### 6.3 Follow up Actions

- > Advise management and respective authority as soon as practical and inform them about the complaint, investigation detail and the control measures taken; and
- > Notify staff, contractors and site manager to investigate ways to prevent the problem reoccurring.

APPENDIX

A

SAMPLING AND ANALYSIS  
PLAN

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Contact: [REDACTED]

3 September 2021

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Attention: [REDACTED]

Dear [REDACTED]

## **SHELLY BAY DEVELOPMENT – DRAFT SOIL SAMPLING AND ANALYSIS PLAN**

The former RNZAF Base at Shelly Bay is being redeveloped with a mixture of residential and commercial properties planned. Potential for contamination at the site has been identified in two previous reports by AECOM in 2016<sup>1</sup> and Jacobs in 2018<sup>2</sup>. The AECOM (2016) report is a Preliminary Site Investigation (PSI), which investigated the extent of the site covered by the former RNZAF base, including the areas known as South Bay and North Bay, the former rifle range and the area west of Shelly Bay Road (consisting of the inner wharf, Building 8, slipway and former fuel storage tanks), as shown in Figure 1 (appended). The PSI investigation also included limited sampling. The Jacobs (2018) report focused on an area of Wellington City Council land within South Bay and included soil sampling and analysis for asbestos and lead. Both of the reports identified areas where historic activities have occurred that may have resulted in contamination to soil.

This Sampling and Analysis Plan (SAP) has been prepared to address the areas of environmental concern (AEC) identified in the two reports, and to support the Contaminated Site Management Plan (CSMP) that has been developed for the proposed site works.

### **Sampling and Analysis Plan**

The sampling rationale is based on the AEC identified in the AECOM (2016) report and the Jacobs (2018) investigation. Table 1 summarises the AECs identified in these reports and the proposed SAP. Figure 2 shows the proposed redevelopment boundary and extent of this SAP. The proposed sampling locations are shown in Figure 3. The sampling methodology is discussed in the following section.

Soil contamination, if present, is expected to be associated with the historic transformer location, former fuel storage areas, maintenance yard and slipway and the perimeters of buildings (asbestos and lead). Excluded from this SAP is the potential for contamination of soils from heavy metals or risk of unexploded ordnance (UXO) associated with the former rifle range adjacent to the site, or contamination of marine sediments associated with anti-fouling paint etc. adjacent to the slipway/maintenance area. If these areas are to be disturbed during redevelopment of the site, intrusive investigation and a UXO survey are strongly recommended.

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<sup>1</sup> AECOM, 2016, Former Shelly Bay RNZAF Base, Shelly Bay Road, Wellington, letter dated 15 February 2016, addressed to The Wellington Company.

<sup>2</sup> Jacobs, 2018, Shelly Bay Development Soil Contamination Investigation South Bay, Ref: IZ109200-002-NG-RPT-0001/01 dated 4 October 2018.



Table 1 Sampling and Analysis Plan Summary

Location/AEC	Rationale	Samples and depths	Analysis
North Bay, fat trap, septic tank and interceptor areas	Potential for localised contamination. However, no evidence of impacts were noted during PSI walkover.	NA	NA  Testing to be covered in updated CSMP if contamination is encountered during demolition and earthworks.
South Bay, former transformer	Potential for localised contamination from oils containing polychlorinated biphenyls (PCB).	One test pit location directly down-gradient of former transformer (Location 1).  Collection of one near surface sample, then every metre until the top of the water table or a low permeability layer (whichever, comes first with a maximum of approximately 3m).	PCBs, TPH, PAH (if PAH surrogate exceeded), copper, tin, lead and mercury.
North and South Bays, two former boiler house locations and the coal bunker	Potential for localised contamination from burning and storage of coal.	Sample soil from top 0.5m at three locations (Locations 2, 3 and 4).	Heavy metals and TPH and polycyclic aromatic hydrocarbons (PAH) (if PAH surrogate exceeded).
South Bay, Paint Store	This area is sealed. The PSI indicated that contamination of soil/groundwater is not expected at this location.	NA	NA  Testing to be covered in updated CSMP if contamination is encountered during demolition and earthworks.
South Bay, wastewater treatment plant	Localised contamination from leaks. PSI indicated that contamination of soil and groundwater is not expected.	NA	NA  H&S for biohazards and soil handling to be covered in updated CSMP.
Slipway and maintenance area	Anti-fouling substances potential for contaminating slipway, and maintenance areas. Slipway is sealed and not being disturbed during the development however there is some exposed soil in maintenance area where	One to two test pits (Location 5) in the location of the maintenance yard where soil is exposed only. Collect sample from near surface and 0.5m.	7 heavy metal suite, mercury, tin, tributyltin (TBT), TPH and PAH (if PAH surrogate exceeded).

	concrete has deteriorated.		
Western side of Shelly Bay Road, fuel storage – two historic storage areas	Potential spills/leaks from tanks, bowsers and associated pipework.	One test pit at each historic fuel storage area (downgradient) (Locations 6 and 7). Sample every metre until the top of the water table or a low permeability layer (whichever comes first, with a maximum of approximately 3m).	TPH/BTEX and PAH (if PAH surrogate exceeded), and lead.
Western side for length of whole site, reclamation/landfill	Potential for contamination from fill materials. However, no evidence for landfill other than reclamation materials that were locally sourced were identified in the PSI.	NA	NA Testing to be covered off in updated CSMP if fill with anthropogenic material including ash is uncovered during development.
Whole site, perimeters of buildings	Lead based paints present on weatherboards and asbestos containing material (ACM) in rooves and associated building infrastructure. Paint and/or ACM materials in deteriorating state on buildings.	Sample at test locations outside the area previously tested by Jacobs (2018). Near surface soil samples (0.1 to 0.2m from beneath the rootzone and 0.4 to 0.5m) to be collected from locations 8 to 14 <sup>3</sup> . Samples should be collected below roof drip lines with a minimum of 1 sample per external wall. Deeper samples can be held in cold storage, to be tested only if the near surface samples exceed human health criteria.	Asbestos and lead.

## Methodology

The total number of samples collected and analysed will be dependent on the number of asbestos and lead samples collected around building perimeters at locations 8 to 14. The number of samples analysed from Locations 1 to 7 will depend on visual assessment and onsite photoionisation detector (PID) measurements (where appropriate). Deeper samples can be held in cold storage pending the results of more shallow samples. One QA/QC sample should be collected per 10 samples. All samples are to be analysed at an IANZ accredited laboratory. Soil samples are to be analysed for the following potential contaminants of concern as presented in Table 1:

- > 7 heavy metals (arsenic, cadmium, chromium, copper, lead, nickel, and zinc)
- > Mercury

<sup>3</sup> Given the amount of buildings on site, a representative group of larger buildings has been included for testing, it can be assumed that the remaining buildings onsite will have similar or lower results based on their size.

- > Tin
- > Lead and asbestos (ACM and fibres)
- > TBT
- > TPH
- > PAH (if PAH surrogate guideline exceeded).

All samples are to be collected under the guidance of a SQEP. Soil sampling is proposed using an excavator, or a spade/hand auger for lead and asbestos samples near buildings. If sampling is to be undertaken prior to demolition of the site, soil sampling locations will need to be checked by an underground utilities locator prior to breaking ground. As the location of utilities may impact the final test pit locations; the locations presented in Figure 3 are provisional. Additionally, this SAP has been based on third party reports from 2016 and 2018 and conditions on site may be different to those reported. Therefore, sampling locations/depths may be changed or added, depending on site observations and contaminant markers encountered, and any new information or reports that are presented.

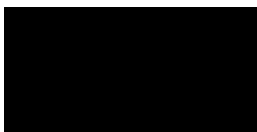
At some sampling locations (depending on contaminant source), we propose excavating to a maximum depth of 3m or until the water table or a low permeability soil layer (if less than 3m). There is potential for some of the contamination sources on site to be deeper than 3m; however groundwater is expected to be at this depth or higher. Additionally, if suspected contamination is encountered, we will avoid excavating further through any low permeable layers (if encountered) above the water table. Installation of groundwater wells are not proposed as part of this investigation, and risk to groundwater will be assessed based on the results of the soil investigation.

The following field procedures are to be followed:

- > Samples to be collected directly from the centre of the excavator bucket, spade or auger using a fresh pair of powder free nitrile gloves for each sample to avoid cross contamination.
- > Collection of samples from each soil sampling location into laboratory supplied sterilised soil jars (300 ml), labelled accordingly and immediately placed on ice.
- > Where petroleum hydrocarbons are potentially present, an additional sample will be collected into sealable plastic bags for PID measurements.
- > Sampling equipment to be decontaminated before moving on to the next sampling location.
- > Environmental logging of the soil profile encountered to be undertaken, along with a description of contamination markers and PID measurements (where appropriate).
- > Samples to be sent to a laboratory accredited for the tests performed under chain-of-custody (COC) documentation.

Please contact the undersigned if further clarification on the SAP is required.

Yours sincerely,




  
Water & Environment Manager  
for Cardno



Figure 1: Site Layout with areas of environmental concern, figure adapted from the AECOM (2016) report Site Layout plan, Attachment A



Figure 2: Extent of redevelopment at Shelly Bay



Figure 3: Proposed sampling locations (annotated in yellow), figure adapted from the AECOM (2016) report Site Layout plan, Attachment A



APPENDIX

# B

SITE RE-DEVELOPMENT PLAN





APPENDIX

C

WASTE TRACKING DOCUMENT

Waste Tracking	Description	Signoff
Special Waste Application Number		
Driver name and ID		Driver signature
Time left site		Site supervisor signature
Arrival time at landfill		Landfill kiosk signature
Load weight		