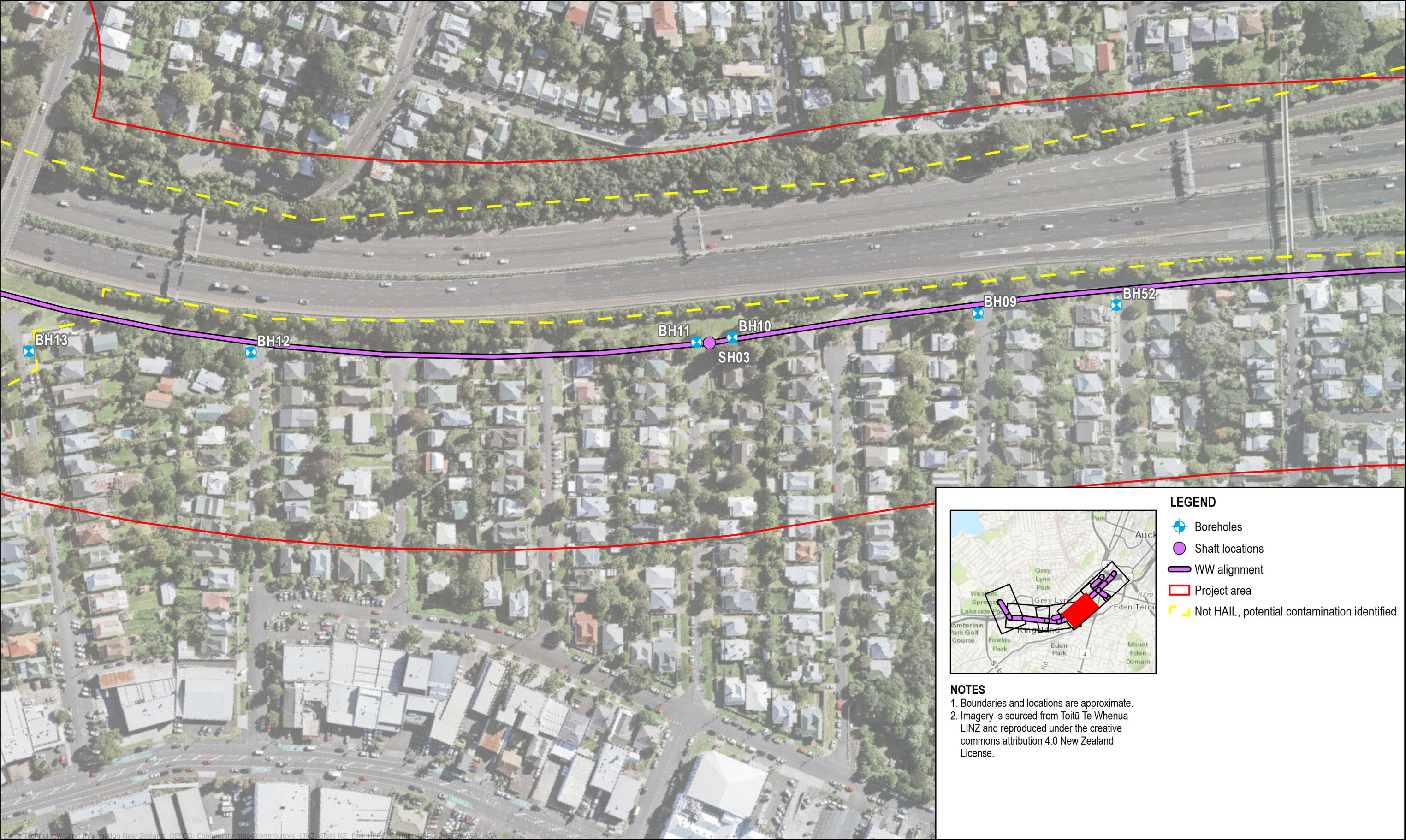


Attachment A - Sketches



- LEGEND**
- Boreholes
 - Shaft locations
 - WW alignment
 - Project area
 - Not HAIL, potential contamination identified

NOTES

1. Boundaries and locations are approximate.

2. Imagery is sourced from Toitū Te Whenua LINZ and reproduced under the creative commons attribution 4.0 New Zealand License.

REVISIONS				APPROVALS			
REV	DATE	REVISION DETAILS		REV	DRAWN	DESIGNED	VERIFIED
A01	2024-12-11	ISSUED FOR INFORMATION		A01	H. SUSSEX	H. SUSSEX	A. GRAHAM

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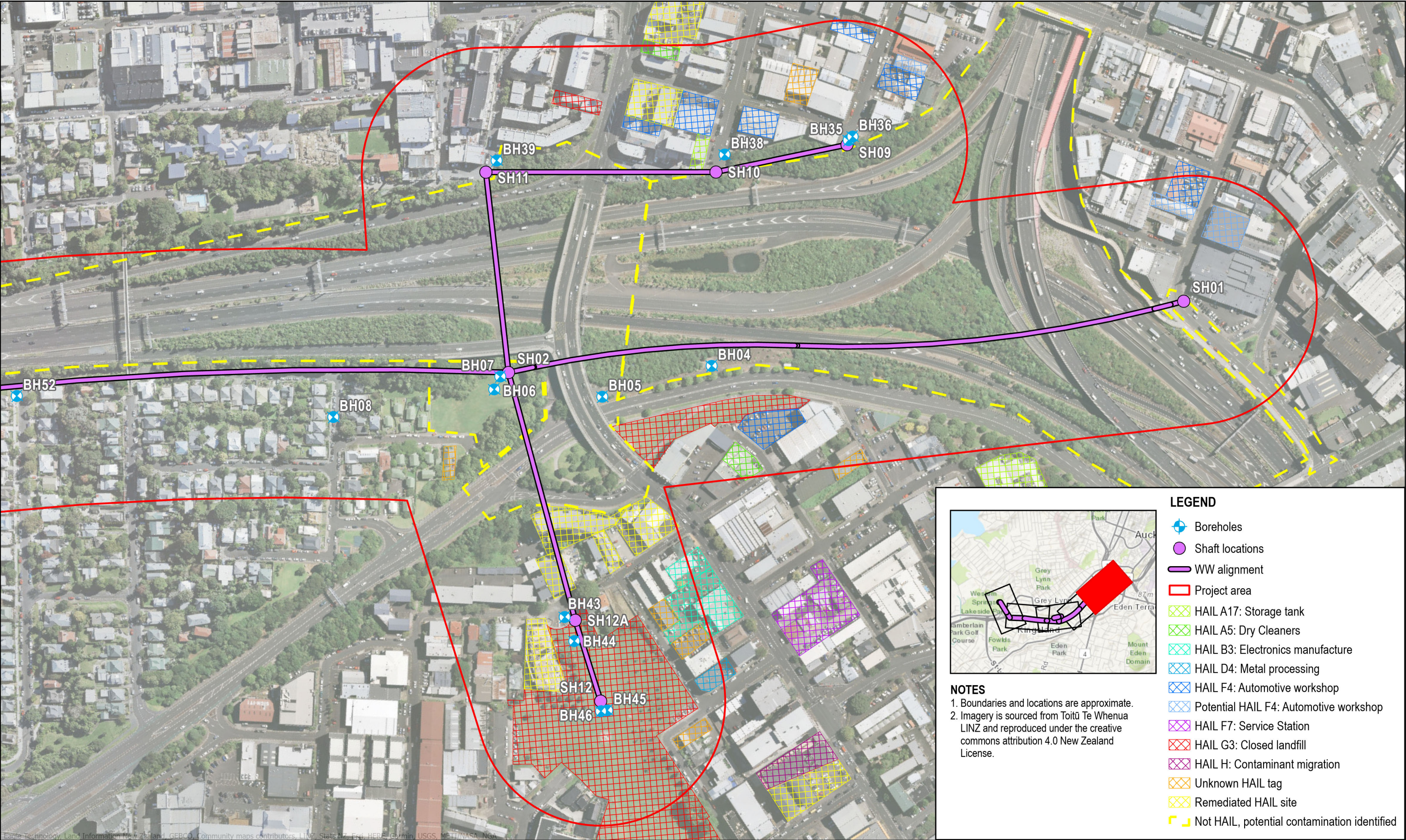
Coordinate System:
New Zealand Transverse Mercator 2000

Height Datum:
New Zealand Vertical Datum 2016

0 4.5 9 18 27 36 45 54 m

All written dimensions take precedence over scaled dimensions

CONSTRUCTION STATUS		PROJECT			
NOT FOR CONSTRUCTION		WATERCARE SERVICES LIMITED WIIWQP MOTIONS CATCHMENT IMPROVEMENTS			
DRAWN BY H. SUSSEX DESIGNED BY H. SUSSEX		TITLE IDENTIFIED HAIL - PLAN 2 OF 5			
STATUS FOR INFORMATION		DOCUMENT CODE 521290-W00064-SKT-EC-0002			
DOCUMENT STATE SHARED		SCALE 1:1,800	SIZE A3	REFERENCE No. 521290-064	REV A01



REV	DATE	REVISION DETAILS	REV	DRAWN	DESIGNED	VERIFIED	APPROVED
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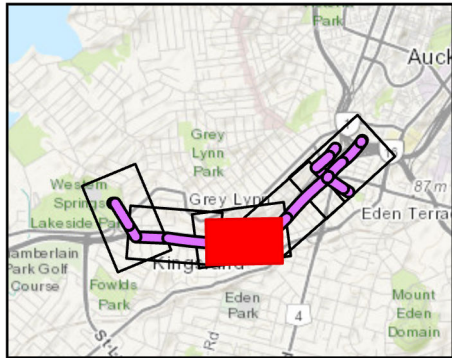
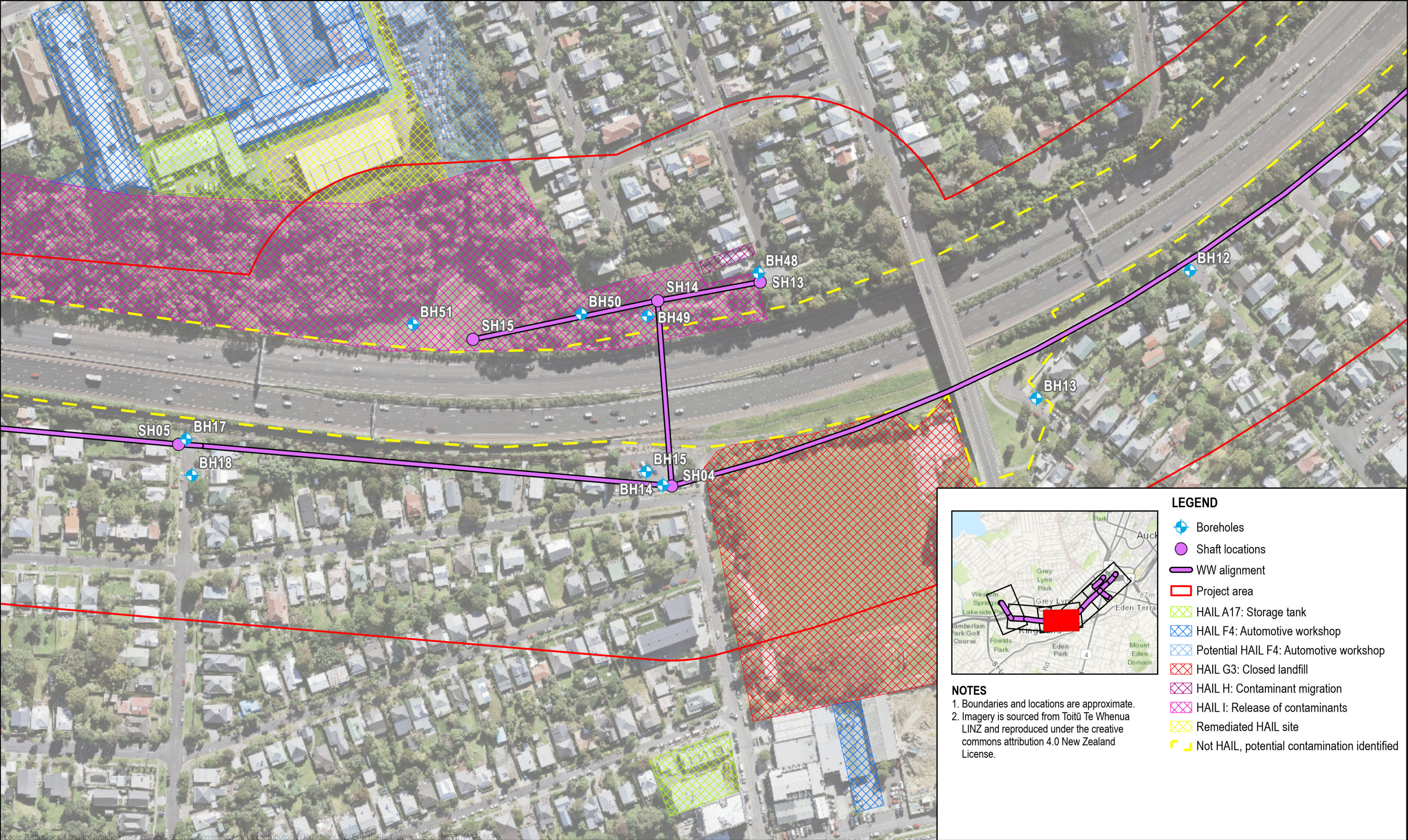
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New Zealand Vertical Datum 2016

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m

All written dimensions take precedence over scaled dimensions

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DRAWN BY H. SUSSEX DESIGNED BY H. SUSSEX		TITLE IDENTIFIED HAIL - PLAN 1 OF 5			
STATUS FOR INFORMATION		DOCUMENT CODE 521290-W00064-SKT-EC-0001			
DOCUMENT STATE SHARED		SCALE 1:2,800	SIZE A3	REFERENCE No. 521290-064	REV A01



- LEGEND**
- Boreholes
 - Shaft locations
 - WW alignment
 - Project area
 - HAIL A17: Storage tank
 - HAIL F4: Automotive workshop
 - Potential HAIL F4: Automotive workshop
 - HAIL G3: Closed landfill
 - HAIL H: Contaminant migration
 - HAIL I: Release of contaminants
 - Remediated HAIL site
 - Not HAIL, potential contamination identified

NOTES

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REV	DATE	REVISION DETAILS	REV	DRAWN	DESIGNED	VERIFIED	APPROVED
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Height Datum:
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0 5 10 20 30 40 50 60

m

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CONSTRUCTION STATUS

NOT FOR CONSTRUCTION

DRAWN BY
H. SUSSEX

DESIGNED BY
H. SUSSEX

STATUS

FOR INFORMATION

DOCUMENT STATE

SHARED

CODE

S2

PROJECT

WATERCARE SERVICES LIMITED
WIWQP MOTIONS CATCHMENT IMPROVEMENTS

TITLE

IDENTIFIED HAIL - PLAN 3 OF 5

DOCUMENT CODE

521290-W00064-SKT-EC-0003

SCALE

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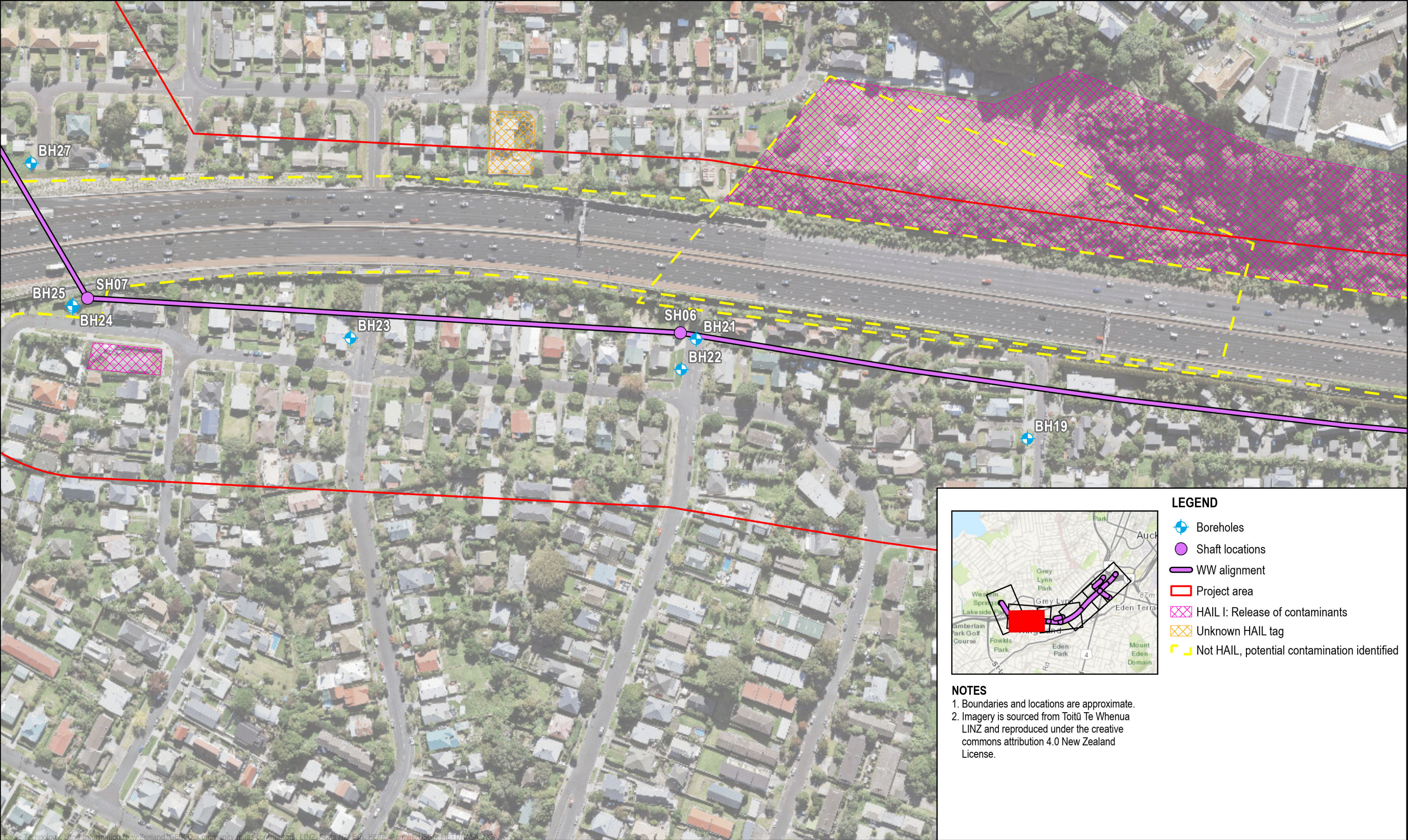
A3

REFERENCE No.

521290-064

REV

A01



- LEGEND**
- Boreholes
 - Shaft locations
 - WW alignment
 - Project area
 - HAIL I: Release of contaminants
 - Unknown HAIL tag
 - Not HAIL, potential contamination identified

NOTES

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0 5 10 20 30 40 50 60 m

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CONSTRUCTION STATUS

NOT FOR
CONSTRUCTION

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H. SUSSEX
DESIGNED BY
H. SUSSEX

STATUS

FOR INFORMATION

DOCUMENT STATE

SHARED

CODE

S2

PROJECT

WATERCARE SERVICES LIMITED
WIIQIP MOTIONS CATCHMENT IMPROVEMENTS

TITLE

IDENTIFIED HAIL - PLAN 4 OF 5

DOCUMENT CODE

521290-W00064-SKT-EC-0004

SCALE

1:2,000

SIZE

A3

REFERENCE No.

521290-064

REV

A01

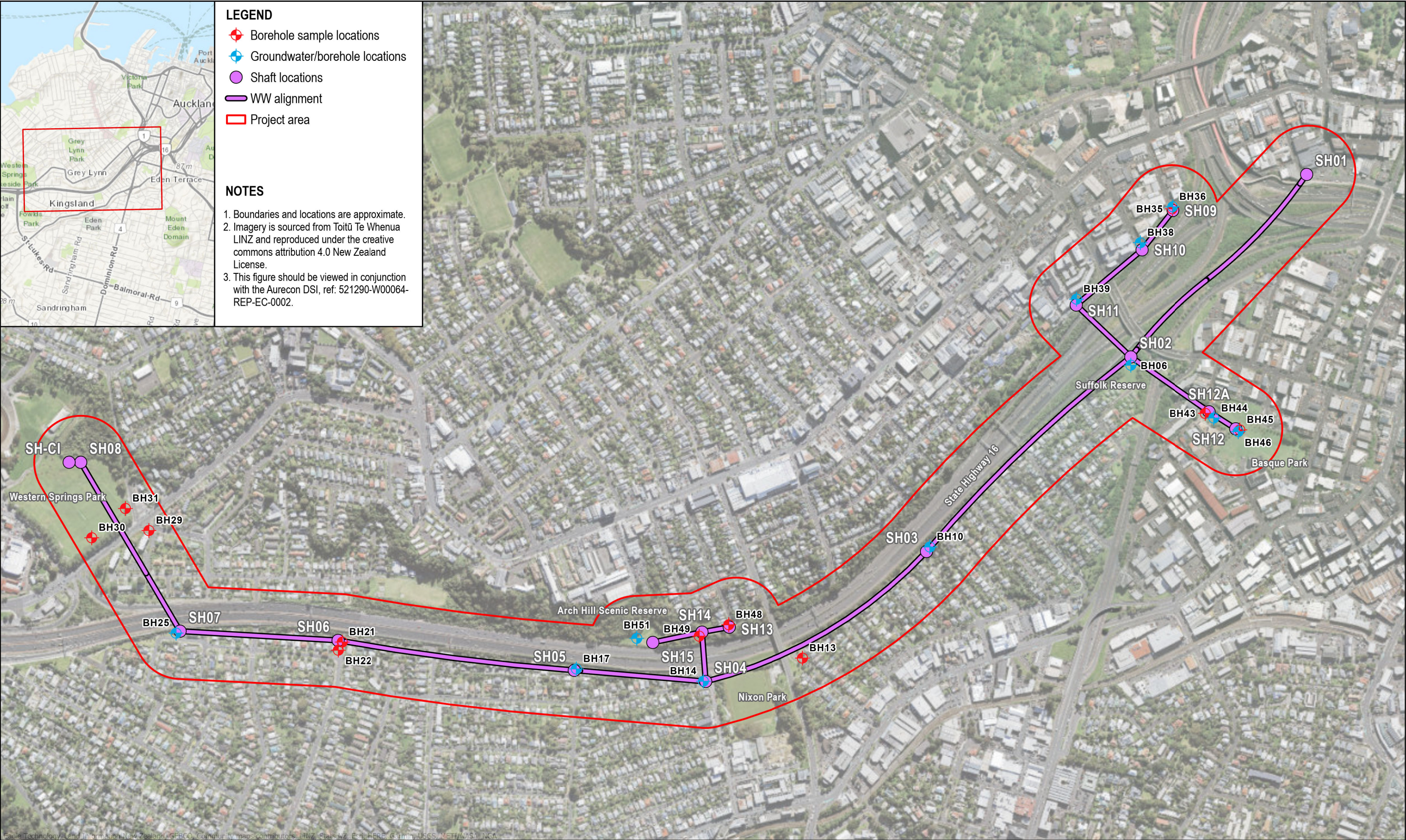


LEGEND

- Borehole sample locations
- Groundwater/borehole locations
- Shaft locations
- WW alignment
- Project area

NOTES

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A01	2024-12-11	ISSUED FOR INFORMATION	A01	H. SUSSEX	H. SUSSEX	A. GRAHAM	A. GRAY

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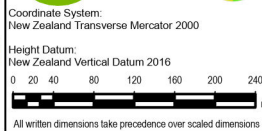
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NOT FOR CONSTRUCTION		WATERCARE SERVICES LIMITED WIIQIP MOTIONS CATCHMENT IMPROVEMENTS			
DRAWN BY H. SUSSEX DESIGNED BY H. SUSSEX		TITLE			
STATUS FOR INFORMATION		SAMPLE LOCATIONS			
STATUS	CODE	DOCUMENT CODE			
FOR INFORMATION	S2	521290-W00064-SKT-EC-0006			
DOCUMENT STATE	SCALE	SIZE	REFERENCE No.	REV	
SHARED	1:7,500	A3	521290-064	A01	



LEGEND

- SPR linkages
- Complete
 - Incomplete
 - Potentially complete
- Shaft locations
- WW alignment
- Project area

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A01	2024-12-11	ISSUED FOR INFORMATION	A01	H. SUSSEX	H. SUSSEX	A. GRAHAM	A. GRAY

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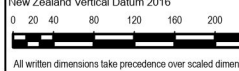
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DRAWN BY H. SUSSEX DESIGNED BY H. SUSSEX		TITLE			
		SPR LINKAGES			
STATUS	CODE	DOCUMENT CODE			
FOR INFORMATION	S2	521290-W00064-SKT-EC-0007			
DOCUMENT STATE		SCALE	SIZE	REFERENCE No.	REV
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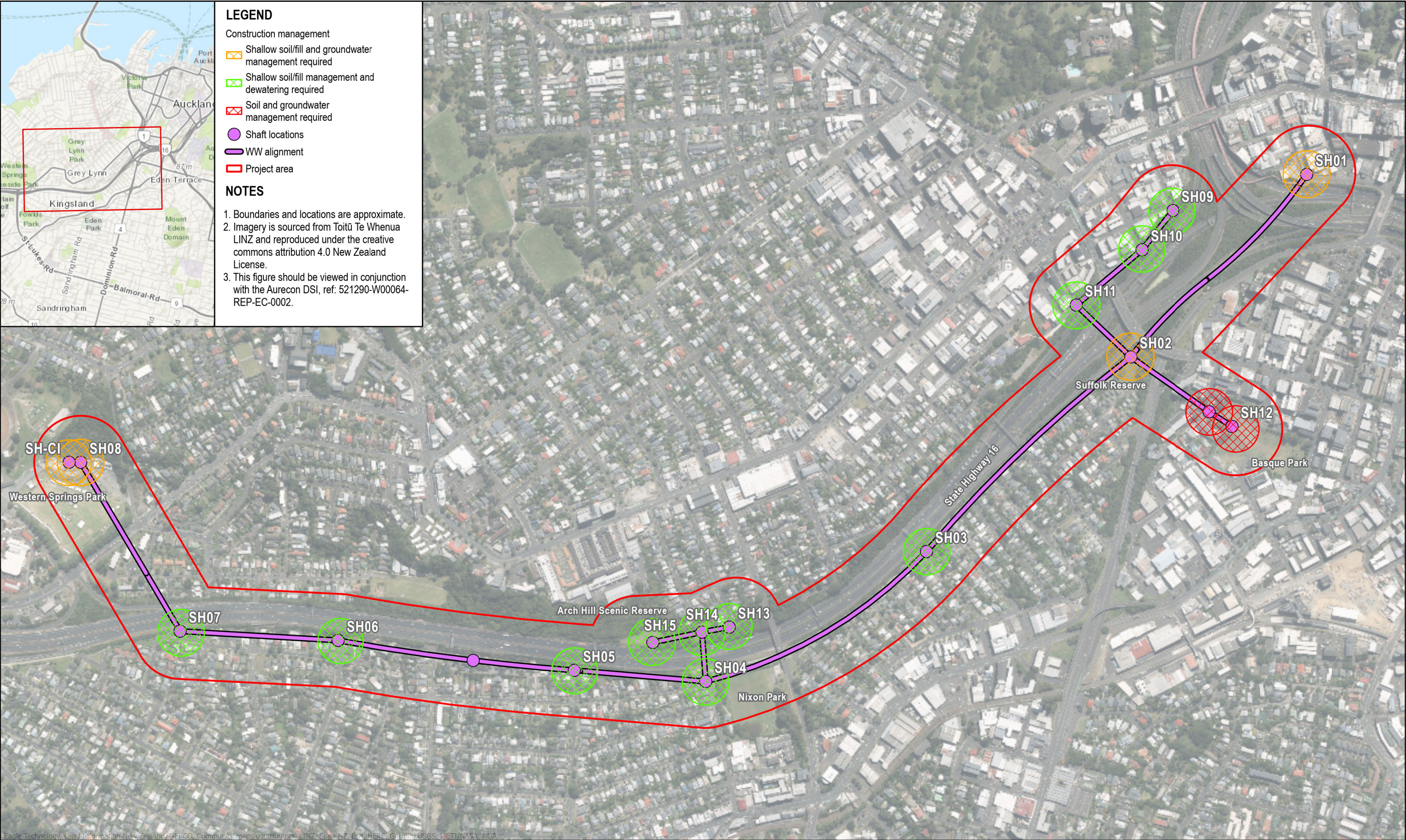


LEGEND

- Construction management
- Shallow soil/fill and groundwater management required
 - Shallow soil/fill management and dewatering required
 - Soil and groundwater management required
 - Shaft locations
 - WW alignment
 - Project area

NOTES

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- This figure should be viewed in conjunction with the Aurecon DSI, ref: 521290-W00064-REP-EC-0002.



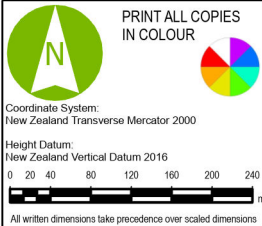
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REV	DATE	REVISION DETAILS	REV	DRAWN	DESIGNED	VERIFIED	APPROVED
A01	2024-12-11	ISSUED FOR INFORMATION	A01	H. SUSSEX	H. SUSSEX	A. GRAHAM	A. GRAY
A02	2025-07-07	ISSUED FOR INFORMATION	A02	H. SUSSEX	H. SUSSEX	M. TENDAM	M. COBELDICK

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DRAWN BY H. SUSSEX DESIGNED BY H. SUSSEX		TITLE CONSTRUCTION MANAGEMENT			
STATUS FOR INFORMATION		DOCUMENT CODE 521290-W00064-SKT-EC-0008			
DOCUMENT STATE SHARED		SCALE 1:7,500	SIZE A3	REFERENCE No. 521290-064	REV A02

Attachment B – Asset owner approval

6 June 2024

Auckland Council
Private Bag 92300
Auckland 1142

Attention: Andrew Allcock
Email: andrew.allcock@aurecongroup.com

Dear Andrew

Closed Landfill Asset Owner Approval
For: Borehole physical works/activity at Basque park closed landfill

Aurecon New Zealand seek approval from Auckland Council Closed Landfill Team (CLT) as Asset Owner of the closed landfill at Basque Park.

Works covered under this approval include:

- 3 x Rotary Boreholes

Installation of 3 Rotary Boreholes to depths of 15m to 20m bgl by Drill Force NZ Ltd. to investigate the underlying ground conditions for the onwards design of a proposed water tunnel. The works are expected to start on 1st July 2024 and each borehole is expected to be completed in 2 to 3 days. On completion, 1 of the 3 boreholes will be fitted with piezometer for remote monitoring.

CLT's understanding of the proposed works is based on the received documents detailed in the references section of this approval letter.

I am pleased to confirm that **Asset Owner Approval** is **Granted** subject to the following conditions:

Conditions:

1. Copies of all documentation referenced in this AOA (including this AOA) shall be held onsite and available for use at all times.
2. The Closed Landfill Team (CLT) provide asset owner approval for the works on the basis of the information provided by the Applicant.
3. This approval does not constitute the granting of resource consent for the purposes of the Resource Management Act 1991, land owner approval (LOA) or right of entry (RoE).
4. This approval is not a confirmation that the proposed design meets the expected purpose or any statutory or other requirements. The Applicant accepts all inherent risks due to ground conditions to the assets built, their construction, occupation, operation, maintenance and decommissioning.
5. If the installations result in unintended consequences including ponding, landfill gas/leachate discharge, or settlement, mitigating measures must be submitted to CLT and implemented when approved. If no solution can be reasonably engineered, the affected installations shall be decommissioned or removed.
6. A breach of any AOA condition may result in the withdrawal of council's permission to carry out the works or activity until the breach is resolved.
7. The servants or agents of council shall be permitted access to the property at reasonable and mutually agreed times for the purpose of carrying out inspections, surveys, investigations, tests, measurements, audits or taking samples.

8. CLT reserve the right to withdraw the approval or add further conditions if conditions or works on site change. Changes proposed to the approved works or activity shall be provided to CLT for review and approval prior to these works commencing.
9. The Applicant must ensure appropriate, fit for purpose health and safety controls are in place to control hazards associated with the closed landfill.
10. The Applicant is responsible for notifying the CLT team in writing a minimum of 3 working days prior to commencement of the physical works or specific activity on the site.
11. No potential ignition sources, including smoking, that are not otherwise addressed in this AOA, are permitted.
12. A works methodology shall be in place and the work monitored by a suitably qualified and experienced contaminated land consultant familiar with landfill hazards.
13. Underground services must be located prior to excavation. If services are encountered and damaged during excavation, the appropriate persons should be contacted immediately to arrange repair.
14. Non-destructive digging techniques must be used to clear the top 1.5m of all boreholes / CPT's and must cover an area at least as big as the drill casing. This clearance must be completed before destructive digging techniques where it will not adversely impact investigation results and afterwards otherwise.
15. If any services are located within 1m of the proposed excavation location, standover by CLT is required.
16. No landfill waste or contaminated soil may be placed directly on the site surface or allowed to have any environmental discharges. If material is to be stockpiled, it must be laid on an impermeable surface and covered (core boxes or plastic sheets are acceptable).
17. If asbestos is encountered, work shall be undertaken to comply with the Health and Safety at Work (Asbestos) Regulations 2016 such as by following the WorkSafe Approved Code of Practice for the Management and Removal of Asbestos, and BRANZ New Zealand Guidelines for Assessing and Managing Asbestos in Soil 2017.
18. Care shall be taken to locate and avoid damage to existing landfill assets. The approximate locations of assets are shown in the attachments to this letter. Any damage must be repaired.
19. All spoil material, liquid waste (including groundwater) and other wastes generated shall be removed from site for appropriate disposal. All drill fluids shall be contained and kept from spillage. Spill management equipment shall be on hand in case drill or hydraulic fluids, oils or fuels be discharged.
20. Vehicle access shall be via formed access ways as much as possible; protective mats shall be used to move vehicles across the grassed areas where formed access ways cannot be used, and mats shall be left in place where vehicles are parked.
21. Vehicles must not be operated on the landfill surface during the winter works period, between 1 May and 30 September, unless consents and specific controls are in place and approved by CLT.
22. The Applicant will repair any damage to the closed landfill surface and other closed landfill infrastructure as agreed with CLT. Only clean soil may be imported to the site and evidence of the quality of the soil must be kept and supplied to CLT on practical completion of works. CLT must be informed once all clean-up and reinstatement works have been completed.
23. The following incidents shall be reported to CLT immediately:
 - a. Discovery of unknown/unexpected structures and features (e.g. closed landfill cap/liner, bund, underground services)
 - b. Any unintentional damage to the closed landfill surface or infrastructure.
 - c. Health and Safety or environmental discharge incidents on the closed landfill.
 - d. Any new hazards related to the closed landfill or its assets that are identified during the works or activities.
 - e. Accidental discovery in accordance with the Auckland Unitary Plan rules E11.6.1 and E12.6.1

24. CLT must be notified on completion of works for a site inspection and close-out of the AOA. The Applicant shall submit the following as part of the notification:
- a. Any design changes if not already reported to CLT
 - b. Clearance Certificate if asbestos licensed work was undertaken
25. The completed investigation report shall be supplied to CLFM within one month of completion of the report via the Closed Landfills email address closedlandfills@aucklandcouncil.govt.nz.
26. Within three months following practical completion of the works, as built drawings of all new structures and landforms that are located within closed landfill footprints shall be supplied to the closed landfill team.
27. This written approval expires 6 months from the date of the issue of this letter.

Hazard/Advice Notes

Reports are available on request that include information regarding landfill gas, leachate, soil quality and other information. Please specify in the request the type of information required.

LOA may be required in addition to AOA to access the site.

There are three types of Asset Owner Approval. You have been granted the following type:

- ☐ Approval in principle for works on a closed landfill
- ☒ Approval for works on a closed landfill
- ☐ Approval for an activity on a closed landfill

If you have any queries, please contact James Corbett by telephone on 027 4735 036 or email james.corbett@aucklandcouncil.govt.nz

Yours sincerely,

Karthik Kumar

**Senior Project Manager Closed Landfills
Infrastructure & Environmental Services**

Reviewed:



James Corbett

**Principal Contaminated Land Specialist
Infrastructure & Environmental Services**

References – Received documents

- AOA application form, dated 08/05/2024, received 10/05/2024
- Appendix A – Site Plan

To	Auckland Council	From	Andrew Allcock
Reference	521290-064	Reviewer	Mel Gamman
Mem reference	521290-064-mem-0001	Verifier	Aaron Graham
Date	2024-05-07	Pages (including this page)	10+
Subject	Basque Park Closed Landfill Asset Owner Application		

1 Introduction

Aurecon New Zealand Limited (Aurecon) has been engaged by Watercare Services Limited (Watercare) to submit an Asset Owner Approval (AOA) application to support the proposed advancement of three rotary boreholes (BH) within Basque Park, Eden Terrace (the site), which is listed as high risk by the AOA. The proposed BH are required as part of Ground Investigations (GI) works scheduled to inform concept design for a proposed wastewater tunnelling project (the project).

This memo sets out a brief information available at the time of writing the AOA, including BH locations and depths for Auckland Council (AC) consideration (**Appendix A**). Details relating to the proposed timeframes, installation and reinstatement has been provided within the AOA form (**Appendix B**).

2 Closed Landfill Information Review

A Closed Landfill Information Request was lodged with AC on the 27 October 2023, from which the following historical environmental investigation reports were provided by AC:

- Fraser Thomas Partners, Report on Subsoil Investigation for Basque par Redevelopment, Ref. 27318, dated June 1985;
- Worley, Basque Park Proposed Stormwater Detention Pond, Preliminary Geotechnical Assessment, Ref. 34 627 24 XO6, dated October 1999;
- Foundation Engineering, Geotechnical Investigation on Proposed Redevelopment of Basque Park, Newton, Ref. 10462, dated November 2002; and
- Tonkin & Taylor, Closed Landfill Consent Monitoring Report Basque Par (Exmouth Street) Closed Landfill: May 2021 to April 2022, Ref. 28645.5020 v2, dated September 2022 (T&T, 2022 report).

Information contained within the above-listed reports indicates that the site has been subject to landfilling comprising topsoil, and reworked silt and clay abundant with gravel, brick, concrete, and tree roots. Historical exploratory BH logs contained within the above-listed reports reviewed indicates landfill depth of approximately 4.2 metres below ground level (m bgl) in the central eastern reaches of the site (to a maximum depth of approximately 6 m bgl). Refer **Appendix A**.

No information pertaining to a capping layer and/or landfill liner/liner material was available in the information reviewed.

No information relating to intrusive ground investigations (i.e. soil and groundwater sampling) was available in the information received from AC. The T&T landfill monitoring report (T&T, 2022 report) did not identify any significant changes of site topography during the monitoring period.

No information suggesting degradation of large volumes of organic rich material is likely occurring within the landfill was identified. In addition, previous GI investigations did not encounter perched groundwater within the landfill material, including no evidence of a leachate at the base of the landfill.

3 Proposed Borehole Locations

Based on the reviewed information and proposed BH locations for the project (refer Appendix A), Table 1 below sets out anticipated depth of landfill material likely to be encountered during GI works.

Table 1 – Estimated Depth to Landfill Base at Proposed Borehole Locations

Borehole Reference for the project	Proposed Depth (m bgl)	Estimated depth to the base of the landfill at Proposed BH Location (m bgl)*
BH44	15	3**
BH45	20	2
BH46	20	2

*Estimated depths based on a review of the historical reporting referenced in Section 3.

** The increased depth when compared to BH45 and BH46 is due to the site being an east to the west formed gully system.

4 Discussion

Although, Basque Park is classified as a 'high risk closed landfill' site, the information reviewed to date (refer **Section 2**) does not suggest the presence of organic waste or free phase contamination with the potential for vertical migration into the underlying natural strata. Nor does it suggest the presence of landfill gas or landfill leachate. As such, it is anticipated that all GI works proposed at the site will be undertaken in accordance with Aurecon Health and Safety and environmental protocols for the project utilising best site practices to prevent environmental and human health risks or comprising the integrity of the site.

All works at the site will also be completed by a suitably qualified environmental practitioner (SQEP).

The GI information obtained as part of this AOA will assist with concept design of the tunnel alignment, proposed methodology for construction and inform the Notice of requirement (NOR) application which will be required for project.

We thank you for your consideration of the AOA and should you require any further information regarding the proposed GI works for the project, please do not hesitate to contact Tracy Howe (Aurecon Gi works programme manager – contact detail with accompanying email) in the first instance.



Kind regards

Andrew Allcock
Senior Engineering Geologist



Mel Gamman
Senior Consultant, Contaminated Land

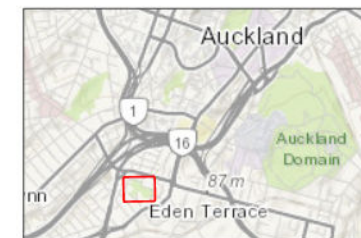


Aaron Graham
Lead Consultant, Contaminated Land



Tracy Howe
Lead Consultant – GI Manager

Appendix A – Figures



LEGEND

- Previous investigation location with identified landfill material (to depth indicated on plan)
- Aurecon proposed ground investigation locations

NOTES

- Boundaries are approximate.
- Imagery is sourced from Toitū Te Whenua Land Information New Zealand and reproduced under the creative commons attribution 4.0 New Zealand License.
- BH indicates borehole locations.
- HA indicated hand auger locations.
- FTP indicates borehole complete by Fraser Thomas Partners in 1985.
- FE indicates hand auger complete by Foundation Engineering in 2002.
- This figure should be viewed in conjunction with the 'Basque Park Closed Landfill Asset Owner Application Form' complete by Aurecon, issued to Auckland Council, May 2024.

DISCLAIMER: This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information. Aurecon cannot accept any responsibility for any errors, omissions, or positional accuracy of the data.



Basque Park - 17-23 Exmouth Street, Eden Terrace, Auckland

Depth to the base of Basque Park landfill

Coordinate System: NZGD 2000 New Zealand Transverse Mercator

Supporting figure for Basque Park Closed Landfill Asset Owner Application Form

Date: 07/05/2024

For Information Only

Prepared By: T.H.HILL

Appendix B – Closed Landfill Asset Owner Approval Guidance Notes and Application Form



Closed landfill asset owner approval

Guidance notes and application form

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The Asset Owner Approval Process	1
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Council Closed Landfills

Closed landfills are sites where waste was disposed of in the past, but they are no longer accepting waste. Many of these sites have been repurposed as parks and reserves. Auckland Council closed landfills range from large, engineered facilities to uncontrolled fill sites, including areas reclaimed with waste or contaminated soils (sites listed in **Attachment 1**).

The Closed Landfill Management Team manages these closed landfills. Some sites may have structures, services and devices used to control environmental discharges, and ensure safe use of the park or reserve.

The Asset Owner Approval Process

The Asset Owner Approval Process (AOA) is used by the Closed Landfill Management Team to ensure that developments and activities that are proposed on Auckland Council's closed landfills are compatible with the health, safety and environmental risks presented by the sites. The Closed Landfill Management Team is part of the Engineering & Technical Services Unit in the Infrastructure & Environmental Services Department.

There are three types of Asset Owner Approval (**Table 1**) depending on the type of activity or the project's stage. Information to be provided with the application varies depending on the type of AOA.

An AOA is issued as a letter with a set of conditions that the applicant agrees to and is required to comply with. Some conditions are generic and usually apply to all AOA. These are listed in **Table 2**. Specific conditions may also be added.

An AOA is to be obtained prior to the works or activity commencing. Other approvals may be required such as Community Facilities landowner approval or right of entry, resource consents, or building consents.

The Closed Landfill Management Team will endeavour to respond to your request for AOA within two weeks and issue the AOA within four weeks of receiving all information necessary to process the application. Timeframes may vary with workload.

The Closed Landfill Management Team may undertake site visits from time to time to confirm that the AOA conditions are being met.

An AOA is required for all works and the majority of activities on high-risk closed landfill sites, but generally only for works on medium-risk closed landfills (see **Table 3**). An AOA is **not required** for works or activities on low-risk closed landfills or for the activities listed in **Table 4**. Please notify the Closed Landfill Management Team of works not requiring AOA through closedlandfills@aklc.govt.nz.

The closed landfill risk classifications are included in **Table 5** and the list of Auckland Council closed landfills is included in **Attachment 1**.

Table 1: Types of AOA and information to be provided

AOA type	Description	Information to be provided by applicant (as applicable)
Approval in principle	Used when early project endorsement is required to assist with project approvals such as resource consent applications.	- Completed AOA application form - Description of proposed project including expected earthworks, effects on closed landfill assets, intrusion into fill and timeframe - Concept Design Report, where appropriate Approval of Works will still be required once the scope of the actual works is known.
Approval for works on a closed landfill	Used to assess the impact of specific works on a closed landfill. Obtained prior to physical works commencing. Includes investigations.	- Completed AOA application form - Map showing key features of works - Final detailed design drawings - Other consents/approvals issued - Construction methodology - Site, contamination, asbestos, or other management plans and controls for Table 6 hazards - Site access requirements and timing - Existing investigation reports and risk assessments
Approval for an activity on a closed landfill	Used to assess the impact of activities, including public events, on a closed landfill.	- Completed AOA application form - Description of activity including expected audience and duration - Event management plan - List and location (map) of structures and equipment

Table 2: Common AOA conditions

1	A copy of the AOA and all referenced documentation should be held on site and available for use at all times.
2	The Closed Landfill Management Team provides asset owner approval for the works on the basis of the information provided by the Applicant.
3	This approval does not constitute the granting of resource consent for the purposes of the Resource Management Act 1991, Land Owner Approval or Right of Entry.
4	No potential ignition sources, including smoking, that are not otherwise addressed in this AOA, are permitted.
5	The Applicant must ensure suitable health and safety controls are in place to control hazards associated with the closed landfill.
6	The Closed Landfill Management Team reserves the right to withdraw the approval or add further conditions if conditions or works on site change. Changes proposed to the approved works or activity should be provided to the Closed Landfill Management Team for review and approval prior to these works commencing.
7	The Applicant is responsible for notifying the Closed Landfill Management Team in writing a minimum of three working days prior to commencement of the physical works or specific activity on the site.
8	The Applicant will repair any damage to the closed landfill surface and other closed landfill infrastructure as agreed with the Closed Landfill Management Team.
9	The following incidents shall be reported to the Closed Landfill Management Team immediately: - Any unintentional damage to the closed landfill surface or infrastructure - Health and safety incidents or environmental discharge incidents on the closed landfill - Any new hazards related to the closed landfill or its assets that are identified during the works or activities - Accidental discovery in accordance with the Auckland Unitary Plan rules E11.6.1 and E12.6.1.
10	A breach of any AOA condition may result in the withdrawal of Auckland Council's permission to carry out the works or activity until the breach is resolved.
11	The servants or agents of Auckland Council should be permitted access to the property at reasonable and mutually agreed times for the purpose of carrying out inspections, surveys, investigations, tests, measurements, audits or taking samples.
12	This written approval expires one (1) year from the date of the issue of this letter.

Table 3: Works and activities requiring asset owner approval

Works / Activity	AOA required	Comment
Works with ground intrusion such as excavation, drilling, investigations, planting or temporary in-ground installations.	High-risk sites Medium-risk sites (depending on scale)	These works have the potential to damage closed landfill infrastructure or provide a preferential pathway for leachate or landfill gas to be discharged. With the variety of projects occurring on closed landfills, the Closed Landfill Management Team will assess the need for an AOA on medium-risk sites based on the scale of the project and potential impact of the project on the closed landfill.
Events, and activities that are not considered as everyday use of a park or reserve (with an underlying closed landfill).	High-risk sites	Events may introduce ignition sources that need to be controlled due to the potential presence of landfill gas. Examples of ignition sources include open flames, generators, lighting and sound equipment, food stalls, BBQ, hangi and fireworks. Activities that have the potential to damage closed landfill infrastructure should be sited away from these assets. The Closed Landfill Management Team can provide site plans showing the location of assets.

Table 4: Works and activities NOT requiring Asset Owner Approval

Works / Activity	Comment
Regular maintenance activities by Community Facilities or other Auckland Council departments that do not require ground intrusion such as: • Mowing • Spraying • Weed eating • Mulching	These maintenance activities are unlikely to damage closed landfill assets or result in the discharge of landfill gas or leachate. While an AOA is not required, health and safety controls for closed landfill hazards must be considered.
Emergency and utility repair works.	Contact the Closed Landfill Management Team when undertaking these works (preferably before work starts) to discuss site-specific hazards, protection of assets and consent requirements.
Leases, easements, land transactions and long-term activities.	Please contact the Closed Landfill Management Team.
Works and activities on low-risk closed landfill sites.	Closed landfill hazards are unlikely to be encountered. Contingency measures are recommended to cover accidental discovery of contamination.

Works / Activity	Comment
Development and activities occurring exclusively on privately owned land adjacent to Council-owned closed landfills.	AOA is restricted to Auckland Council-owned closed landfills. The Closed Landfill Management Team would be an affected party and would need to be contacted as part of any landowner approvals. While an AOA is not required, health and safety controls for closed landfill hazards must be considered.
Low-impact activities as agreed with the Closed Landfill Management Team (not applicable to restricted-access sites).	Some low-impact activities may be agreed with the Closed Landfill Management Team to go ahead without an AOA, provided they are unlikely to affect or be affected by the closed landfill.

Closed landfills and hazards

Closed landfill sites are classified as high, medium or low risk (see **Table 5**) based on the type of fill, associated hazards, and consent requirements.

Closed landfills present hazards that are not usually encountered on a park or construction site, which may not be immediately obvious from the surface. Hazards that may be encountered are detailed in **Table 6**. Site-specific hazard information may also be available from the Closed Landfill Management Team.

The Applicant is responsible for managing hazards associated with their works or activities.

Table 5: Auckland Council closed landfill classification

Classification	Description
High risk	- Predominantly municipal waste landfills with organic material that breaks down resulting in settlement, landfill gas, and leachate - Potential hazards when undertaking works or events include uncovering landfill waste, contaminated soil, landfill gas, leachate and unstable ground - Most of these sites have long-term discharge consents and infrastructure to manage discharges (e.g. leachate collection systems, gas alarms, soil cover)
Medium risk	- Construction and demolition fills, managed fills, informal fill sites. Includes some older and smaller municipal waste landfills - Potential hazards when undertaking works include contaminated fill, contaminated water and unstable ground
Low risk	- Sites with predominantly clean (assumed) soil fill - Potential hazards when undertaking works include unstable ground

Table 6: Closed landfill hazards

Source	Hazards	Comments
Landfill gas (methane, hydrogen sulphide, carbon monoxide, carbon dioxide, reduced oxygen, etc.) (High-risk sites, some medium risk sites)	- Fire and explosion - Chemical contaminant - Asphyxiation - Nuisance odours	Landfill gas may be generated by the waste and can accumulate in voids within the landfill. Landfill gas can build up in enclosed spaces including pipes, manholes, sumps and excavations, or spaces beneath buildings or structures placed on or set into the landfill. Different landfill gases have different properties, and may require different gas detectors to identify. Electrical equipment, machinery and flames are examples of ignition sources that could cause fire or explosion.
Landfill waste and contaminated soils (High and medium-risk sites)	- Chemical contaminant - Biological contaminant - Physical hazards including asbestos and sharps	The waste or contaminants may not be adequately isolated from the surface, resulting in contaminants and physical hazards on the surface. Contaminants may not be visible. Waste or contamination may be encountered in excavations. Soils that overlay the landfill waste may also have contaminants (which may not be visible).
Leachate (High and medium-risk sites)	- Chemical contaminant - Biological contaminant	Contaminated liquid can be present within the landfill but can also contaminate surface water or groundwater where it discharges. The contaminants may not be visible. Leachate from high-risk sites tends to have higher

Source	Hazards	Comments
		contaminant concentrations than from medium-risk sites.
Unstable ground including steep slopes, uneven ground, soft ground and voids (High, medium or low-risk sites)	- Physical hazard, i.e. slip, trips and falls - Instability	Inadequate compaction and decomposition has resulted in variable settlement and voids in the waste at some sites, meaning the site surfaces can be very uneven. Some sites have overly steep slopes. Heavy equipment may not be suitable in some areas.
Monitoring and maintenance activities for the closed landfill (High-risk sites)	Physical hazard	Vehicles, equipment and people involved in monitoring and maintenance may be present.
Closed landfill infrastructure	- Physical hazard - Electrical hazards	Closed landfills often include monitoring wells, leachate and gas collection systems, and other infrastructure. They can be low to the ground (trips) or include electrical or other hazards. Infrastructure can include spaces where gas and other hazards can build up.

Attachment 1: Council-owned closed landfills (September 2019)

These sites can be viewed on Council's Intranet GIS or location maps can be provided by CLFM.

High-risk sites			
North		Central	
- Barry's Point - Chelsea Estate Heritage Park - Goodall Reserve/Hamatana Marginal Strip - Hatfields Beach - Millwater Parkway	- Ngataringa and Dacre Parks - Warkworth Depot - West Hoe Road (Sunnyheights Subdivision) - Western Reserve - Whangaparaoa Road - Whangateau Landfill	- Basque Park (Exmouth Street) - Galway Street (Onehunga) - Glendowie Park (Riddell Road) - MOTAT, Seddon Fields and Meola Reef Reserve - Mt Albert War Memorial Reserve - Newmarket Park	- Ngahue Reserve - Phyllis Reserve - Pikes Point (East and West) - Seaside Park (Brady Road) - Tahapa Reserve - Tawaipareira Reserve - Waikowhai Park - Gloucester Park
West		South	
- Archibald Park - Ceramco Park - Corban Reserve - Helensville River Reserve (Mill Road) - Jack Colvin Park - Manawa Wetland Reserve (Morgan Avenue) - Muriwai Regional Park - Sister Rene Shadbolt Park	- Singer Park - Taipari Strand - Te Rangi Hiroa/Birdwood Depot - The Concourse Strand (Selwood Road) - Waitakere Recovery & Recycling Centre - Waitakere War Memorial Domain (Bethells Road)	- Kitchener Road Stormwater Reserve (Tuakau; Manga) - Kohuora Park and Lendenfield Reserve - Martyn Farm Estate (Helland Drive)	- Mayfield Park - Ngati Otara Park - Ray Small Park (Elliott Street) - Waimana Reserve

High-risk, restricted access sites (Closed Landfill Management Team induction required)			
North		Central	
- Lawrie Road - Rosedale Tip Site	Rustybrook Road		
West		South	
- Kay Road - Waimauku	Wicks	- Greenmount - Hunua Gorge	Piggotts

Medium-risk sites

North		Central	
- Anderson Road - Ashton Road - Birkenhead War Memorial Park (Harvey Wright Fields) - Cambria Reserve - Cement Works (Wilson Road) - Deep Creek Reserve - Duck Creek Road Reserve (Stillwater; Doctors Creek) - Kaipara Flats A+B	- Makiri Street - Mcleod Street Landfill - Paremoremo Scenic Reserve - Plymouth Reserve - Rawene Road Reserve (Highbury Works Depot) - South Cove - Whangaripo Valley Road - Woodall Park	- Almond, Alcock and Lavas Reserves (Panorama Road) - Auckland Domain (Stanley Street) - Blockhouse Bay Recreational Reserve (Whitney Street) - Brown Reserve - Colin Maiden Park - Cox's Bay Reserve - Fowlds Park - Grafton Cemetery East and West (Symonds Street) - Grey Lynn Park - Little Rangitoto Reserve (Upland Road) - Martyn Wilson Fields and Sonia Reserve	- Masefield Reserve (Curran Street) - Morrin Road - Nixon Park - Pascoe's Quarry Reserve - Shore Road (Thomas Bloodworth Park, Ayr, Shore Road, Wharau and Waitaramoa Reserves) - Taylor's Hill Reserve (Sacred Heart) - Vermont Reserve - Vic Cowen Park - Waiatarua Reserve - Waiata Reserve (Combes Street) - Waikaraka Cemetery
West		South	
- Bridge Avenue Reserve and Te Atatu Boating Club - Coletta Esplanade (Central Park Dr) - Clayburn Reserve - Craigavon Park - Crum Park - Daytona Strand - Delta Esplanade - Drury Street Esplanade - Glen Eden Depot - Harbour View Reserve - Henderson Valley Park - Kelvin Strand (Gill Ave) - Ken Maunder Park - Kowhai Reserve - Lavelle Reserve - Lawson Park - Levy Reserve	- McLeod Park - Olympic Park and Wolverton Esplanade Reserve - Portage Road Esplanade - Queen Mary Reserve - Rata Street Esplanade - Rerewai Reserve - Rewarewa Esplanade/McNaughton Way - Shays Reserve - Span Farm Esplanade - Spargo Reserve - Springbank Esplanade - Swanson Scenic Reserve - Tangiwai Reserve - Te Atatu South Park - Wirihihana Reserve	- Allenby Park - Beach Road - Black Bridge Reserve (Old Quarry Road) - Colin Dale Motorsports Park (Prices Road) - Colin Lawrie Field - Elm Park - Ennis Avenue Reserve - Favona Road Reserve and Harania Inlet - Harania/Marys Foreshore Reserve (Harania Avenue) - Hope Farm Esplanade (Robert Allan Road) - Kiwi Esplanade - Laureston/Halycon Esplanade Reserve (Great South Road) - Leabank Park - Lower Mauku Forestry Reserve (Glenbrook Road) - Mahunga Reserve No.1 (Kingfisher Pl) - Mangemangeroa Bridge - Manukau Memorial Gardens	- Manukau Yacht Club (Kiwi Esplanade west) - Matakawau Recreation and Plantation Reserve - Mountfort Park - Norana Avenue Reserve - Omana Park - Oruarangi Road Esplanade Reserve - Paul Place Reserve (Dale Crescent) - Pohutakawa Park (Whitford Bridge) - Potts Road Esplanade Reserve (Clifton Road) - Reeves Park (Udys Road) - Riverhills Park - Riverina Place Esplanade Reserve - Rooseville Park (Ngahere Road) - Te Paea Marae Reserve (Miro Road) - The Dale (Coxhead Road) - Ti Rakau Park - Waiuku Golf Course

Low-risk sites			
North		Central	
• Park Reserve		• Harbutt Reserve • Ian Mckinnon Drive Reserve (Randolf Street) • Koraha Reserve (Abbots Way) • Melville Park • Millen Avenue Esplanade Reserve • Mountain Road and Khyber Pass Reserves • Newton Road • Onehunga Bay Reserve • Point Erin Park, Jacobs Ladder, St Mary's Bay Walkway (Mercer Street) • Warren Freer park	
West		South	
• Henderson Valley Scenic (Candia Road) • Kelm Square • Murillo Place Reserve • Opanuku Reserve		• Bledisloe Park • Botany Park (Botany Road) • Ennis Avenue Reserve (Riverhills School) • Laxon Esplanade Reserve (Bairds Road) • Lloyd Elsmore Park (Bells Road) • Springs Road Reserve • Tamaki Bay Drive Reserve (Riverlea Road) • Tiraumea Reserve	

Application form

APPLICANT DETAILS	
DEPARTMENT OR ORGANISATION:	Aurecon New Zealand
CONTACT NAME: <i>Please include Auckland Council Project Manager if applicable</i>	Andrew Allcock
DDI or MOBILE:	+64212222331
E-MAIL ADDRESS:	Andrew.Allcock@aurecongroup.com
APPLICATION DETAILS	
APPLICATION TYPE:	☐ Approval in principle for works on a closed landfill ☐ Approval for works on a closed landfill ☐ Approval for an activity on a closed landfill
ADDRESS / SITE (S): <i>(where the works or activity will take place)</i>	Basque Reserve, 13 Norwich Street, Auckland 1021, New Zealand
CONTRACTOR / SUBCONTRACTOR DETAILS	Drill Force NZ Ltd, 9 Rawson Way, Takanini, Auckland, 2105
PLANNED START DATE:	01/07/2024
WORKS OR ACTIVITY: <i>Brief description</i>	Advancement of 3 Rotary Boreholes to depths of 15m bgl to 20m bgl to investigate the underlying ground conditions for the onwards design of a proposed water tunnel. All drilling arisings will be collected and removed for ex-situ inspection and analysis. Advancement of the boreholes through the landfill will be supervised by a suitably qualified contaminated land specialist whom will undertake targeted soil sampling of the landfill material where required. Each borehole will take c. 2 to 3 days to complete, and will be advanced in accordance with industry best practice, including the casing off of the borehole until the landfill has been fully penetrated to prevent the mobilisation of potential contamination. On completion, 1 of the 3 boreholes will be installed with a piezometer to allow for remote monitoring of the underlying ground conditions and groundwater sampling. The piezometer will be grouted in with concrete which will prevent the vertical migration of potential contamination from the landfill. The monitoring point will be sealed flush to the surrounding ground surface. The remaining boreholes will be back filled with bentonite.

WORKS / ACTIVITY CHECKLIST				
Item	Information / documentation to be provided	Attached		
All works/activities	Map	Yes	N/A	No
		☒	☐	☐
Design	Drawings, cross sections	Yes	N/A	No
		☐	☒	☐
Planting	Planting list <i>Limitation: large trees, food plants. Consider planter boxes.</i>	Yes	N/A	No
		☐	☒	☐
Excavation	- Maximum depth of each excavation. - Reinstatement details. <i>At least 300mm clean cover should remain; engineered caps must be restored to the same or better condition. Excavations that penetrate the base of the landfill should be sealed with bentonite at the base.</i>	Yes	N/A	No
		☒	☐	☐
		Max Depth (all) <u>20m bgl</u>		
Soil importation	Source/type	Yes	N/A	No
		☐	☒	☐
Soil disposal	Planned disposal location	Yes	N/A	No
		☐	☒	☐
Pipe installation	Evidence of consideration of landfill gas and leachate migration in trench and pipe designs	Yes	N/A	No
		☐	☒	☐
Foundations	Evidence of consideration of settlement, landfill gas and leachate (e.g. acidity) effects in the design	Yes	N/A	No
		☐	☒	☐
Electrical work	Evidence of consideration of landfill gas hazards	Yes	N/A	No
		☐	☒	☐
Installation of piezometers	Intended installation details	Yes	N/A	No
		☒	☐	☐
ATTACHMENTS: <i>List and attach documents supporting this application (only documentation other than in the above table)</i>				
SIGNATURE OF APPLICANT				
SIGNATURE:	Andrew Allcock			
NAME:	Andrew Allcock			
DATE:	03/05/2024			
Complete this page and e-mail to closedlandfills@aucklandcouncil.govt.nz with all supporting documents. CLFM aim to issue approvals within four weeks of receiving all required documentation.				