

TO Celia Davison, Manager, Central/South

FROM Andrew An, Policy Planner, Central/South

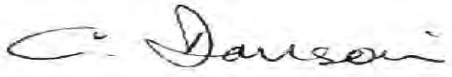
DATE 13 October 2025

SUBJECT Update requested to the Auckland Unitary Plan (Operative in Part 2016) (AUP)

I request an update to the AUP as outlined below:

Reason for update	Alteration to designation confirmed
Chapter(s)	Chapter K Designations Transpower New Zealand Limited
Designation only	
Designation # 8511	Bombay Electricity Substation Transpower New Zealand Ltd
Locations:	153 Barber Road, Bombay
Lapse Date	Given effect to (i.e. no lapse date)
Purpose	Electricity transmission - Bombay electricity substation, line connections and associated infrastructure
Changes to text (shown in underline and strikethrough)	Updated text in Chapter K Designations Transpower New Zealand Limited Refer to Attachment B
Changes to diagrams	N/A
Changes to spatial data	N/A
Attachments	Attachment A: Decision Report - D8511 Bombay Electricity Substation - s181(3) Attachment B: Updated Transpower New Zealand Limited designation 8511 Bombay Electricity Substation (Strikethrough/underscore)

	Attachment C: Updated Transpower New Zealand Limited designation 8511 Bombay Electricity Substation (Clean)
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Maps prepared by: Geospatial Specialist	Text Entered by: Bronnie Styles Planning Technician
Signature: N/A	Signature: 
prepared by: Andrew An Policy Planner, Central/South Planning and Resource Consents	Reviewed by: Craig Cairncross Team Leader: Central-South Planning and Resource Consents
Signature: 	Signature: 
Authorised by: Celia Davison Manager, Central/South Planning and Resource Consents	
Signature: 	

Attachment A

**Decision Report – D8511 Bombay Electricity Substation
s181(3)**

Notice of Requirement for a minor alteration to a designation under section 181(3) of the Resource Management Act 1991

Notice of Requirement Description

Designation number: 8511
Requiring Authority: Transpower New Zealand Limited
Site address: 153 Barber Road, Bombay

Summary

Auckland Council has received a Notice of Requirement (**NoR**) from Transpower NZ Limited [**Transpower**] for the alteration of Designation 8511 under s181(3) of the Resource Management Act 1991 (RMA), dated 16 July 2025.

This NoR relates to a minor alteration to Designation 8511 Bombay Electricity Substation.

It is considered after undertaking an assessment of the NoR documentation, that the proposed alteration meets the statutory tests of section 181(3) of the RMA and can therefore be processed and confirmed as a minor alteration.

Recommendation

1. That the proposed alteration of Designation 8511, Bombay Electricity Substation in the Auckland Unitary Plan be confirmed, subject to the conditions recommended in Section 3 of this report for the following reasons:
 - the alteration involves no more than minor changes to the effects on the environment associated with the use of the land;
 - both the requiring authority and Auckland Council agree with the alteration; and
 - the land is owned and occupied by Transpower NZ Limited, and Transpower agrees with the proposed alteration
2. That Designation 8511, Bombay Electricity Substation is altered in the Chapter K Designations where the text needs to be altered in the Auckland Unitary Plan.

1. Background

1.1. Minor alteration to a designation

Auckland Council has received a notice of requirement (NoR) for an alteration to Designation 8511, Bombay Electricity Substation from Transpower New Zealand Ltd under section 181(3) of the RMA. The NoR specifies that a minor alteration is being sought to:

- amend conditions addressing operational and construction noise standards,
- remove redundant conditions relating to the Bombay Interconnecting Transformer (ICT) project - which connected the substation to the 220 kV network and was completed in 2022, and
- remove the need for an outline plan for works under s 176A (2)¹ [relating to new feeder bays, an underground cable, ancillary earthworks and removal of redundant equipment].

¹ <https://www.legislation.govt.nz/act/public/1991/0069/latest/DLM236267.html>

1.2. Land affected by the alteration

The land affected by the alteration to the designation is located at 153 Barber Road, Bombay, Auckland and is shown in the Auckland Unitary Plan maps as follows:

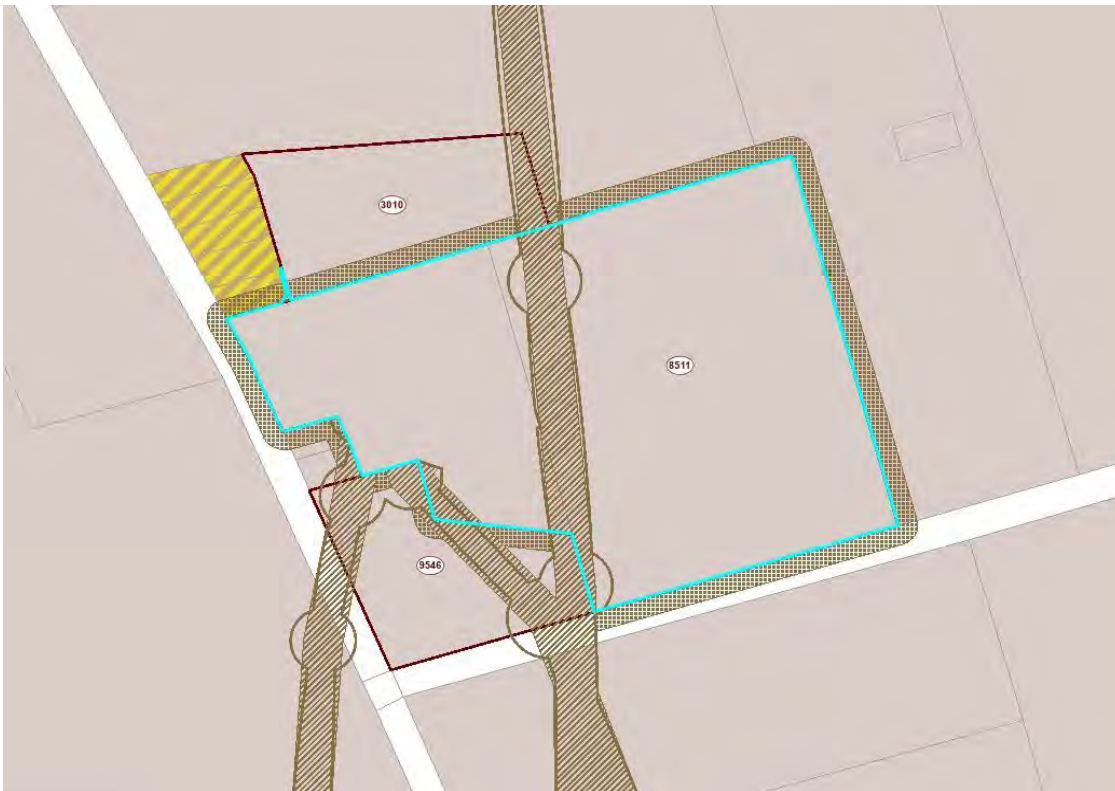


Figure 1: The extent of Designation 8511 in the AUP GIS viewer [taken from AEE]

1.3. Description of the site and existing environment

The Bombay substation site is legally described as being Lot 1 DP 162890 and Lot 3 DP 439460) as shown in Figure 1 above. Access to the substation is obtained via Barber Road. The underlying zone of the site is Rural Production zone in the Auckland Unitary Plan.

Designation 8511 applies to this site for the purpose of *"Electricity Transmission – Bombay electricity substation, line connections and associated infrastructure"*.

The site is covered by a number of overlays and controls including:-

- Natural Resources: High-Use Stream Management Areas | High -Use Aquifer Management Areas [Bombay Volcanic] | Quality- Sensitive Aquifer Management Areas [Franklin Volcanic Aquifer]
- Infrastructure : National Grid Corridor [Substation] | National Grid Corridor [Subdivision Corridor] | National Grid Yard Uncompromised
- Macroinvertebrate Community Index - Rural

The site contains electricity transmission infrastructure, predominately an electricity transmission substation owned and operated by Transpower. The underlying land is also owned by Transpower. Substation equipment on the site includes an outdoor switchyard, a control room, pylons, transformers and other electrical equipment.

The Bombay Electricity Substation was constructed as a point of supply (a Grid Exit Point (GXP) or substation) and a node on the electricity network between Hamilton and Auckland. The primary function of a substation is to transform the voltage of “bulk” electricity, received from generators via Transpower’s transmission lines, down to a level suitable to be fed into the distribution system of the local lines company.

The designation features 22 existing conditions and does not specify a lapse date, as the designation has been given effect to and remains in force.

A number of the existing designation conditions relate to the Bombay ICT project, which connected the substation to the 220 kV network (Earlier, it was connected to the 110 kV network) to meet the forecast and future load growth in the southern Auckland area. The Bombay ICT project was completed in 2022.

The National Grid Substation corridor is shown in Figure 1 [brown hatched area]. This protects future cable routes into the substation and manages health and safety risk and reverse sensitivity effects with nearby development.

The site is bordered by the following properties with designations:

- D3010 – Electricity supply purposes – Barber Road substation – a Counties Energy Ltd designation to the north of the subject site (Identified as ‘A’ on the map below)
- D9546 - Wastewater Purposes, Bombay Sewage Treatment Facility – a Watercare Services Ltd designation located adjacent to the south western boundary of the Transpower site. (Identified as ‘B’ on the map below)



Figure 2 : Aerial view [taken from AUP and AEE]

The underlying AUP zone of the site is Rural Production zone. The surrounding area is predominantly rural in nature with a mix of farmland and rural lifestyle properties. The nearest rural dwelling is over 5

km away to the southwest. The closest residential zone, zoned as a Residential - Rural and Coastal Settlement Zone, is located immediately adjacent to the northwestern boundary of the site.

1.4. Delegated authority

The Team Leader Planning: Central-South has delegated authority, in accordance with Schedule 2A of the Auckland Council Delegations: Chief Executive Officer (Chief Executive's Delegations Register, updated July 2025, Version 2.1), to exercise the council's functions, powers, duties and discretions under the Resource Management Act 1991 in relation to section 181(3). The NoR can therefore be considered by the Team Leader Planning: Central - South.

1.5. Relevant statutory provisions

Section 181 "Alteration of designation" of the Resource Management Act 1991 states:

- (1) A requiring authority that is responsible for a designation may at any time give notice to the territorial authority of its requirement to alter the designation.*
- (2) Subject to subsection (3), sections 168 to 179 and 198AA to 198AD shall, with all necessary modifications, apply to a requirement referred to in subsection (1) as if it were a requirement for a new designation.*
- (3) A territorial authority may at any time alter a designation in its district plan or a requirement in its proposed district plan if-*
 - (a) The alteration-*
 - (i) Involves no more than minor changes to the effects on the environment associated with the use or proposed use of land or any water concerned; or*
 - (ii) Involves only minor changes or adjustments to the boundaries of the designation or requirement; and*
 - (b) Written notice of the proposed alteration has been given to every owner or occupier of the land directly affected and those owners or occupiers agree with the alteration; and*
 - (c) Both the territorial authority and the requiring authority agree with the alteration –*
and sections 168 to 179 and 198AA to 198AD shall not apply to any such alteration.
- (4) This section shall apply, with all necessary modifications, to a requirement by a territorial authority to alter its own designation or requirement within its own district.*

2. Analysis of the proposed alteration

The relevant matters to consider are contained in section 181(3) of the RMA as outlined above.

2.1. Assessment of Environmental effects (s181(3)(a)(i))

The requiring authority has provided an assessment of environmental effects (AEE) with the NoR and identifies the following reasons as to why the proposed alteration to the designation involves no more than minor changes to the effects on the environment:

- Upgrade works to substation and amendments to conditions:

At the request of Infrastructure Solutions New Zealand [ISNZ], works to upgrade the substation are proposed in 2026 and are included in this NoR [see preliminary design in Figures 4 and 5 of AEE and Appendix D].

Minor earthworks are required and a Detailed Site Investigation is included in Appendix E to the AEE.

The proposed upgrade works [“the feeder project”] include installing new feeder bays, an underground cable from the feeder bays to the property boundary along Barber Rd, ancillary earthworks [see below] for the feeder bay foundations and trenches including the replacement of concrete pads and the removal of any redundant equipment.

A separate Outline Plan of Works [OPW] for these upgrade works will not be required given the necessary detail is included in the NoR. Transpower state they intend to undertake these works after the conditions have been altered to avoid the need for a separate outline plan. These proposed upgrade works do not require the works [as part of the NoR] to be progressed or be completed as they comply with the existing designation conditions.

Transpower is proposing amendments to Condition 1, so details/work relating to upgrade works can proceed without the need for an OPW.

- Earthworks

Transpower state that minor earthworks for the new feeder bays and cable trench are required and will be managed to comply with the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCSCS). The site is considered a ‘piece of land’ under Regulation 5(7) of the NESCSCS due to the presence of HAIL activities. A Detailed Site Investigation (DSI) is attached as Appendix E to the NoR. The DSI addresses this [soil samples] and based on the findings of the DSI, Transpower states

“that the proposed works can be undertaken as a permitted activity under Regulation 8(3) of the NESCSCS provided the requirements “including duration, soil disturbance volumes not exceeding 3,440 m3 and soil disposal volumes not exceeding 688 m3” are complied with. Regulation 8(3) will be complied with”.

Transpower state that they will undertake any earthworks under a Contaminated Soil Management Plan (CSMP) to ensure soil disturbance is appropriately managed.

- Removal of redundant conditions:

Transpower is proposing the removal of redundant conditions [nos. 2, 9 and 10] which relate to the Bombay ICT project which has been completed [see section above].

- Alignment with NZS 6803:1999 and best practice construction noise management:

Transpower is seeking amendments to Condition 4 to clarify that construction noise should be managed in accordance with NZS 6803:1999. This includes not restricting construction noise emissions to the limits in NZS6803 and reflects the intent of NZS 6803, which uses noise thresholds to trigger appropriate management measures, rather than imposing absolute limits and aligns with the objectives of the AUP [E25.6.1(3)].

- Improved clarity and timing of management plan obligations:

The current Conditions 5 and 6 require submission of a noise management plan (NMP) to be submitted to the council for approval. There is ambiguity regarding “significant construction works” within the current wording of the condition.

Accordingly, Transpower proposes to amend Condition 5 to require the adoption of a Construction Noise Vibration and Management Plan [CNVMP] for all construction works that do not comply with the construction noise limits within NZS6803. Transpower also propose to amend Condition 6 to

allow Council to review, certify and respond to Transpower before commencement of works.

These changes are procedural and do not affect the substance or robustness of construction-related environmental management.

- **Noise levels and operational certainty:**

Condition 14 is proposed to be amended to provide a more certain operational noise limit, which better aligns with the [permitted activity] substation noise standard in Chapter E26 ², of the Auckland Unitary Plan (Operative in part), in particular sections (2) and (3) relating to substations and electricity storage facilities.

The proposed changes to conditions [as agreed] are included in Attachment F.

Specialist noise review and expert advice

The proposed alterations in relation to construction noise and operational noise conditions have been reviewed by Auckland Council's Contamination, Air and Noise (CAN) specialist, Mr Andrew Gordon. His memorandum (dated 4 August 2025) supports the proposed amendments. Key points from his memorandum include:

Construction noise:

- o NZS 6803 allows for exceedances of 5–10 dBA are typical without necessarily causing significant adverse effects provided works are managed in accordance with a CNVMP [i.e. it is demonstrated the best practicable option (BPO) approach or BPO will be implemented].
- o S16 of the RMA supports the BPO approach.
- o The revised approach is consistent with Objective and Policy E25 of the AUP(OP) which enable construction works to go ahead if permitted standards cannot be practicably met, but appropriated controls are in place to manage adverse effects.

Mr Gordon therefore supports proposed changes to conditions 4,5 and 6.

Operational noise:

- o Objective noise levels can be utilised as design criteria for new or replacement plant or equipment.
- o The proposed decibel levels align with relevant E25 Noise and vibration and E26 Infrastructure standards and compliance with proposed decibel levels will ensure noise effects are maintained at a reasonable level.
- o The proposed limits are appropriate for both residential zoned and rural zoned sites.

Mr Gordon agrees condition 14 should be amended to provide greater certainty.

Specialist contaminated land review and expert advice:

Specialist advice has been provided in relation to the earthworks required for the new feeder bays and cable trench. The DSI [see Appendix E attached to the AEE], concludes that *"the analytical results of the soil sampling have demonstrated that it is highly unlikely that there will be a risk to human health or the environment associated with the proposed work, or ongoing use of the Site as an electrical substation"*.

Based on the findings of the DSI and this advice, I can confirm that the proposed works can be undertaken as a permitted activity under Regulation 8(3) of the NESCS provided the requirements "including duration, soil disturbance volumes not exceeding 3,440 m³ and soil disposal volumes not exceeding 688 m³" are complied with.

2

<https://unitaryplan.aucklandcouncil.govt.nz/Images/Auckland%20Unitary%20Plan%20Operative/Chapter%20E%20Auckland-wide/4.%20Infrastructure/E26%20Infrastructure.pdf>

The proposed development may occur as a permitted activity subject to the condition required under Regulation 8(3) of the NESCS being met and the AEE states that Regulation 8(3) will be able to be complied with.

Generally, the rules in the AUP relating to contaminated land are not considered to be applicable to the proposal development works as the concentrations of contaminants meet the permitted activity criteria set out in the Table E30.6.1.4.1³

The NoR states that Transpower will undertake any earthworks under a Contaminated Soil Management Plan [CSMP] to ensure soil disturbance is appropriately managed if necessary.

Based on the advice provided, information in the AEE, the plans and the DSI, an advice note is included to ensure that Regulation 8(3) of the NESCS can be met.

- No change to physical extent or operational nature:

The proposed alteration does not introduce new activities or expand the footprint of the substation, nor is it required to enable any particular work. The existing use as a grid exit point (GXP) remains unchanged. The proposed alteration involves proposed changes limited to condition updates for clarity, improved compliance, and alignment with current practice.

Based on the AEE and the advice from the Councils' specialists, the proposed alteration to Designation 8511 is considered to involve no more than minor changes to the effects on the environment. Accordingly, the proposal meets the threshold under section 181(3)(a)(i) of the RMA.

2.2. Assessment of minor changes or adjustments to the boundary (s181(3)(a)(ii))

The alteration to the designation does not involve any changes to the boundaries of the existing designation.

2.3. Written notice of the proposed alteration has been given to every owner or occupier of the land directly affected and those owners and occupiers agree with the alteration (s181(3)(b))

Transpower own the subject site and as the Requiring Authority, they have proposed the changes discussed within this report. Given the proposed conditions, there are no owners or occupiers of land directly affected by the alteration and therefore written approval is not required.

2.4. Agreement of both the territorial authority and the requiring authority (181(3)(c))

The alteration to the designation has been requested by the requiring authority, and therefore it agrees to the alteration. Auckland Council agrees with the proposed alteration for the following reasons:

- The alteration involves no more than minor changes to the environmental effects
- The alteration does not involve any changes to the boundaries
- No owners and/or occupiers of land are directly affected by the alteration.
- Adherence with recommended conditions will ensure any potential adverse effects are avoided, remedied or mitigated.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1. Conclusions

The proposed alteration meets the statutory tests of Section 181(3) of the Resource Management Act 1991, in that:

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<https://unitaryplan.aucklandcouncil.govt.nz/images/Auckland%20Unitary%20Plan%20Operative/Chapter%20E%20Auckland-wide/5.%20Environmental%20Risk/E30%20Contaminated%20land.pdf>

- The alteration involves no more than minor changes to the environmental effects.
- Existing conditions/recommended conditions will ensure any potential adverse effects are avoided, remedied or mitigated.
- There are no changes or adjustments to the boundaries of the existing designation.
- No owners and/or occupiers of land are directly affected by the alteration.
- The council and the requiring authority agree with the alteration.

3.2 Recommendation

1. That pursuant to Section 181(3) of the Resource Management Act 1991, Transpower New Zealand Limited's Notice of Requirement for an alteration to Designation 8511, Bombay Electricity Substation is **confirmed** subject to the amended conditions recommended in Attachment F of this report.
2. That Designation 8511, Bombay Electricity Substation is amended in the Chapter K Designations in the Auckland Unitary Plan Operative in part as recommended in Attachment G of this report.

4. AGREED CONDITIONS

The set of agreed conditions is attached as Attachment F.

5. SECTION 181(3) DETERMINATION

Having read the council planner's report and recommendations on the notice or requirement, I am satisfied I have adequate information to consider the matters required by the Resource Management Act 1991 (the RMA) and to make a decision under delegated authority.

Accordingly, the Notice of Requirement for an alteration to Designation 8511, Bombay Electricity Substation is confirmed under section 181(3) of the RMA as agreed and set out in section 3 of this report.

Name: Craig Cairncross

Title: Team Leader: Planning Central - South

Signed:



Date: 5 September 2025

SCHEDULE OF ATTACHMENTS

Attachment A:	Bombay Substation s181(3) Alteration AEE as lodged
Attachment B:	Certificate of title (Appendix A1 and A2 of the AEE)
Attachment C:	WSP Consultant Advice Note (Appendix C of the AEE)
Attachment D:	Plans of proposed Transpower works (Appendix D of the AEE)
Attachment E:	Detailed Site Investigation Report (Appendix E of the AEE)
Attachment F:	Agreed Conditions Set
Attachment G:	Clean set of conditions

Attachment A:

Bombay Substation s181(3) Alteration AEE as lodged

Notice of Requirement for an Alteration of Designation:

Alteration of Bombay Electricity Substation Designation Conditions

Transpower New Zealand Ltd

July 2025

Keeping the energy flowing

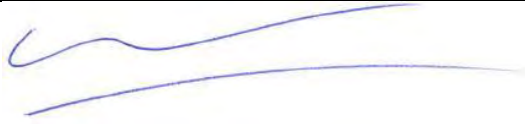
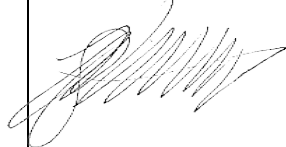


Address for Service:

Transpower New Zealand Ltd
Attention: John Sutherland
PO Box 1021, Wellington 6140
Email: john.sutherland@transpower.co.nz
Tel: DD 03 590 8551: Mobile 027 856 5892

Transpower New Zealand Limited The National Grid

Quality Control

Title	Notice of Requirement for an Alteration of Designation, Alteration of Bombay Electricity Substation Designation
Client	Transpower
Version	Final
Date	16 July 2025
File Reference	A52052.00
Prepared by	Pavithra Perera
Signature	
Reviewed by	Chris Horne
Signature	
Approved for release by	John Sutherland, Transpower
Signature	

Limitations:

The report has been prepared for Transpower, according to their instructions, to support a resource consent application. This report has been prepared on the basis of information provided by Transpower and supporting technical specialist reports attached to this application. Incite has not independently verified the provided information and has relied upon it being accurate and sufficient for use by Incite in preparing the report. Incite accepts no responsibility for errors or omissions in the provided information.

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FORM 18

NOTICE OF REQUIREMENT BY MINISTER, LOCAL AUTHORITY, OR REQUIRING AUTHORITY
FOR DESIGNATION OR ALTERATION OF DESIGNATION

*Sections 168(1), (2) and 181 and Clause 4 of First Schedule, Resource Management Act
1991*

To: Auckland Council
Private Bag 92300
Victoria Street West
Auckland 1142

Transpower New Zealand Limited ("Transpower") gives notice of a requirement for an alteration to a designation for a public work (the Bombay Electricity Substation).

Section 181(3) of the Resource Management Act 1991 (RMA) provides for a Council to alter a designation on a non-notified basis if:

- (3) (a) *the alteration—*
- (i) *involves no more than a minor change to the effects on the environment associated with the use or proposed use of land or any water concerned; or*
 - (ii) *involves only minor changes or adjustments to the boundaries of the designation or requirement; and*
- (b) *written notice of the proposed alteration has been given to every owner or occupier of the land directly affected and those owners or occupiers agree with the alteration; and*
- (c) *both the territorial authority and the requiring authority agree with the alteration—*
- and sections 168 to 179 and 198AA to 198AD shall not apply to any such alteration.*

Transpower was approved as a requiring authority by the Department of Internal Affairs Gazette Notice 3533 dated 19th May 1994, No.48, Page 1705. This authority applies to Transpower's network operation of the supply of line function services pursuant to Section 167 of the RMA. The term 'line function services' for the purpose of the approval has the same meaning as in section 2(1) of the Electricity Act 1992 namely:

- a) The provision and maintenance of works for the conveyance of electricity;*
- b) The operation of such works, including the control of voltage and the assumption of responsibility for losses of electricity.*

The Bombay Electricity Substation is designated by Transpower in the Auckland Unitary Plan: Operative in Part ("AUP") (referenced as 8511 in the AUP). The purpose of the designation is *Electricity transmission – Bombay electricity substation, line connections and associated infrastructure*. **Appendix B** includes a copy of the existing Bombay Electricity Substation designation and all conditions.

A minor alteration to the designation under s.181(3) of the RMA is sought in regard to operational and construction noise standards as well as the removal of redundant conditions relating to the Bombay ICT project which was completed in 2022, and avoiding the need for an outline plan for the specific works described in this notice.

The site to which the requirement applies is as follows:

The Bombay Electricity Substation site is located at 153 Barber Road, Bombay, Auckland and is legally described as Lot 1 DP 162890, Lot 3 DP 439460, held in certificate of title NA98B/125, 544790. This site contains electricity transmission infrastructure, predominately an electricity transmission substation owned and operated by Transpower. The underlying land is also owned by Transpower. The substation has the following designation as set out in the AUP:

8511 – Electricity transmission - Bombay electricity substation, line connections and associated infrastructure

There are 22 conditions on the Transpower designation. Substation equipment on the Transpower site includes an outdoor switchyard, a control room, pylons, transformers and other electrical equipment.

The Bombay Electricity Substation was constructed as a point of supply (a Grid Exit Point (GXP) or substation) and a node on the electricity network between Hamilton and Auckland. The primary function of a substation is to transform the voltage of “bulk” electricity, received from generators via Transpower’s transmission lines, down to a level suitable to be fed into the distribution system of the local lines company.

A number of the existing designation conditions are related to the Bombay ICT project, which connected the substation to the 220 kV network (proceeding this it was connected to the 110 kV network) to meet the forecasted and future load growth in the southern Auckland area. The Bombay ICT project was completed in 2022.

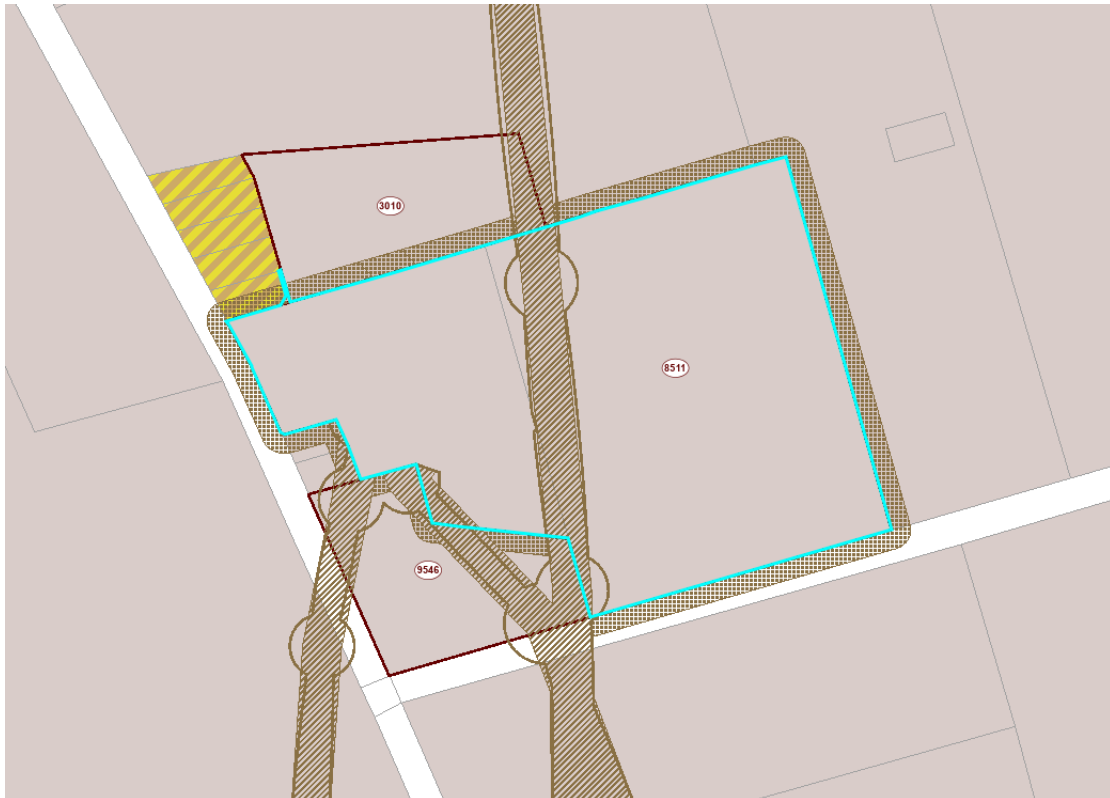


Figure 1: Existing designations and zoning (Source: Auckland Unitary Plan)

The Counties Energy Limited *Designation - 3010, Electricity Supply Purposes - Barber Road Substation*, is located immediately north of the Transpower site boundary. The Watercare Services Ltd *Designations - 9546, Wastewater Purposes - Bombay Sewage Treatment Facility*, is located immediately adjacent the southwestern boundary of the Transpower site.

Surrounding the application site is the National Grid Substation Corridor in the AUP (brown hatched area shown on Figure 1), which is designed to ensure opportunities for future cable routes into substations are not foreclosed, and to manage any health and safety risks as well as reverse sensitivity effects with immediately adjoining development.



Figure 2: Aerial View (Source: Auckland Unitary Plan)

The underlying zoning of the application site is Rural – Rural Production Zone. The site is located on top of a ridgeline and adjoined by the Counties electricity substation and Watercare’s wastewater treatment facility immediately to the north and southwest respectively. The surrounding environment is predominantly rural in nature and comprised of a mix of farmland and rural lifestyle properties. The closest rural dwelling is located approximately 5.2m from the site boundary to the southwest. This dwelling is located within the substation corridor. The closest residential zone, zoned as a Residential - Rural and Coastal Settlement Zone, is located immediately adjacent to the northwestern boundary of the site. Other land uses include an Open Space – Sport and Active Recreation Zone located approximately 230m away from the site to the northwest. State Highway 1 is located to the west approximately 1.5km away from the site.

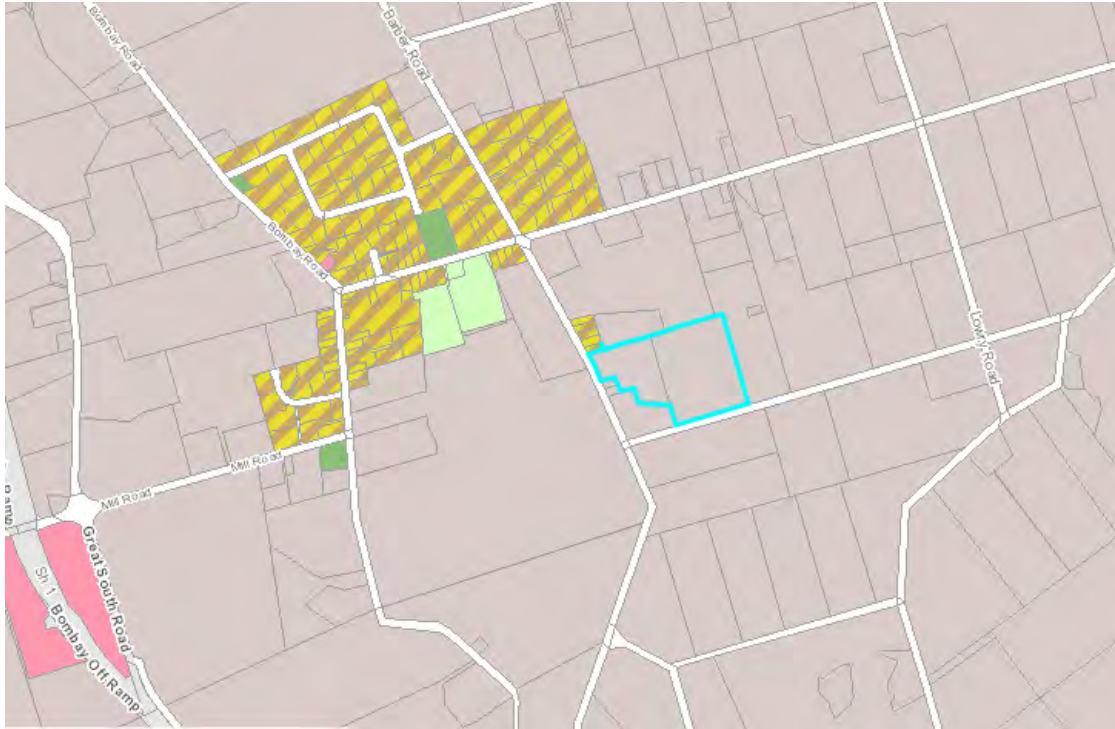


Figure 3: Wider zoning map (Source: Auckland Unitary Plan)



Figure 4: Existing Bombay Substation.



Figure 5: Counties Energy Substation viewed from Bombay Substation



Figure 6: Watercare Treatment Facility viewed from Bombay Substation

The nature of the proposed public work is:

The proposed alteration to conditions is not required to enable any particular work and is being undertaken for long-term 'tidy ups' to conditions as described below. These are primarily administrative changes rather than materially changing the enabled effects envelope of the designation.

Some upgrade works to the substation are also being planned by Transpower at the request of Infrastructure Solutions New Zealand (ISNZ) for 2026 (see preliminary design in Figure 4, Figure 5 and **Appendix D**) and have been addressed as part of this application. The upgrade works do not require this alteration of designation to progress as it will comply with the existing conditions. A separate Outline Plan of Works for these upgrade works will not be required as detailed below on the basis that the necessary detail of this work is included in this notice.

The future upgrade works proposed within the Bombay Electricity Substation designation include installing new feeder bays and an underground cable from the feeders bays to the property boundary along Barber Road. The removal of any redundant equipment relating to the now completed Bombay ICT project. These works will comply with the existing designation conditions attached to the Bombay Electricity Substation designation. Minor earthworks for the new feeder bays and cable trench are required and will be managed to comply with the *Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011* (NESC). A Detailed Site Investigation (DSI) has been prepared by SLR Consulting New Zealand Limited (SLR) as part of this application and is attached as **Appendix E**. The conclusions of this DSI are addressed under the earthworks section below.

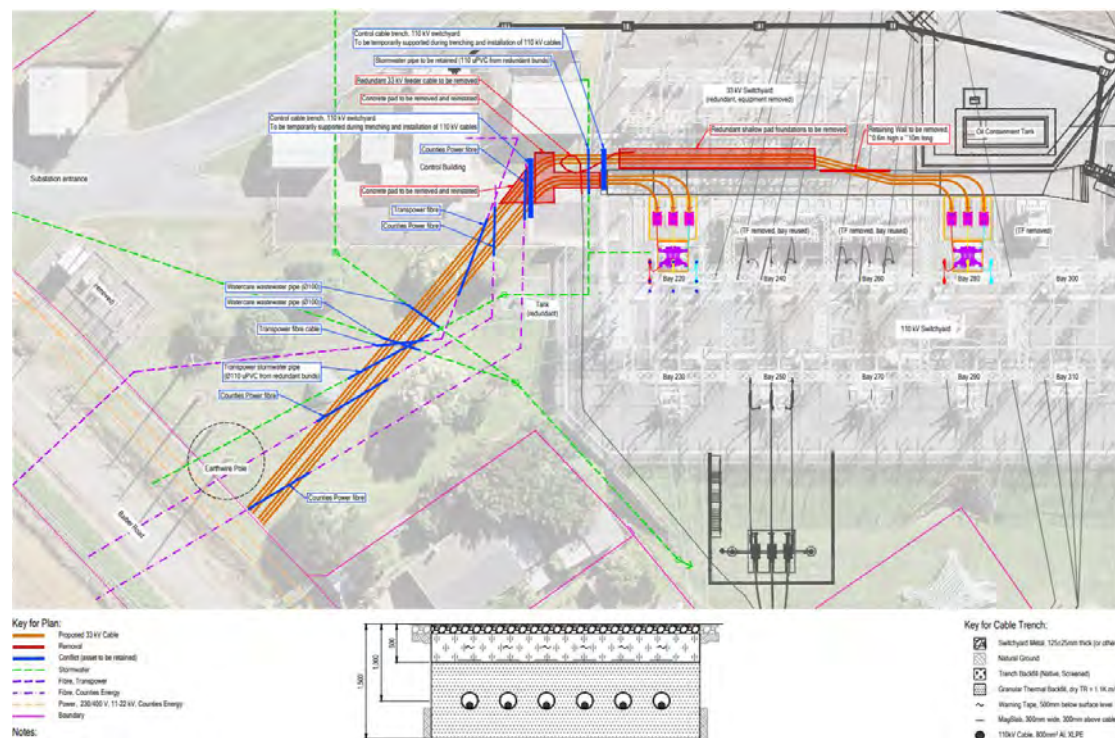


Figure 4: Overview of Proposed Transpower Works Planned for 2026

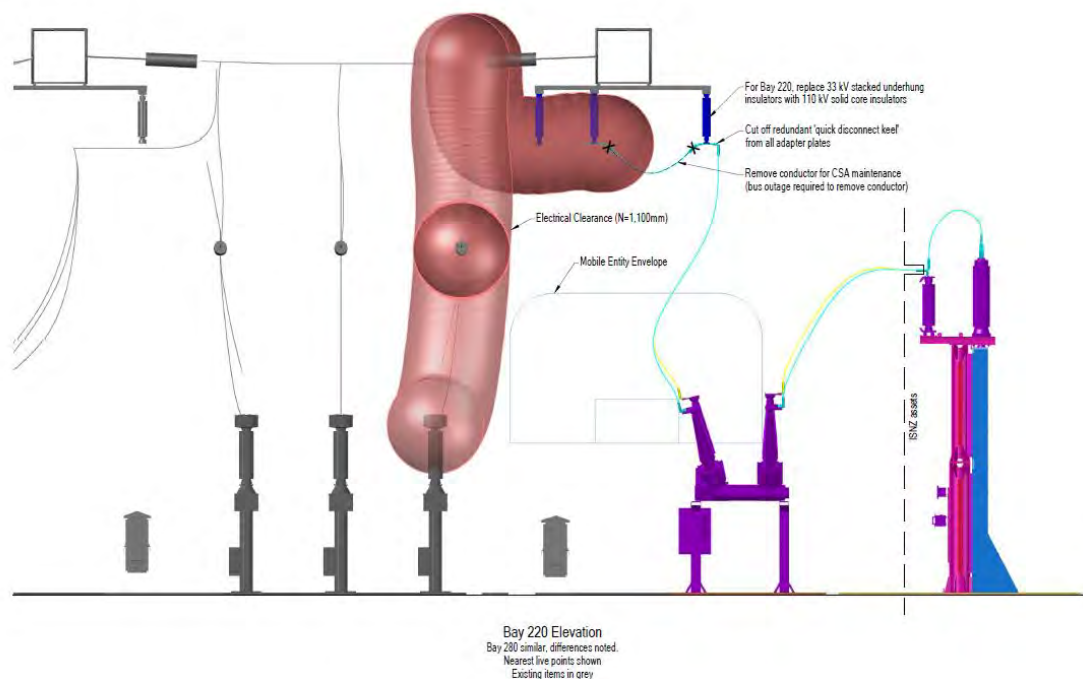


Figure 4: Elevation of Proposed Transpower Works Planned for 2026

The proposed work at the Bombay Electricity Substation is detailed below, with site and elevation plans having been provided under Figure 4, Figure 5 and **Appendix D**. Accordingly, under Section 176A (2) of the RMA an outline plan of works to authorise these works is not required.

A description of the proposed works is as follows:

- Install two new feeder bays within the existing substation switchyard (bay 220 and 280)
- Install a new 33kV underground cable which runs from the new feeder bays to the property boundary along Barber Road.
- Remove redundant feeder cables and equipment
- Ancillary earthworks for feeder bay foundations and trenches including the replacement of concrete pads

176A Outline plan

- (2) An outline plan need not be submitted to the territorial authority if—*
- (a) the proposed public work, project, or work has been otherwise approved under this Act; or*
 - (b) the details of the proposed public work, project, or work, as referred to in subsection (3), are incorporated into the designation; or***
 - (c) the territorial authority waives the requirement for an outline plan.*

The works detailed above could be implemented via either the existing or amended designation and conditions depending on timing (either set of conditions will be complied

with). However, the intent is to undertake the works after the conditions have been altered which will avoid the need for a separate outline plan.

Noise Conditions

Transpower is seeking amendments to Condition 4 to better align with NZS6803:1999 (NZS6803) and, in particular, not restricting construction noise emissions to the limits in NZS6803 but rather using the noise thresholds in the standard to trigger appropriate noise management as envisaged in NZS6803.

A change to the operational noise condition in Condition 14 is also sought to provide a more certain noise limit that better aligns with the permitted activity substation noise performance standards in Chapter E26 of the AUP. The AUP noise performance standards for substations are:

Substations and electricity storage facilities

(2) Noise from substations must not exceed the following noise limits when measured within the boundary of a residential zone site or within the notional boundary of a rural zone site:

(a) 55 dB L_{Aeq} between Monday to Saturday 7am to 10pm and Sundays 9am to 6pm and

(b) 45 dB L_{Aeq} /75 dB L_{Amax} for all other times

(3) Noise from substations and electricity storage facilities in other zones must not exceed the noise limits for the zone in which they are located as provided in E25 Noise and vibration.

The specific noise conditions sought are tracked against the existing designation conditions below.

Transpower is also seeking amendments to Condition 1 and the removal of Condition 2, 9 and 10 which relate to the Bombay ICT project which has now been completed and therefore these conditions are now redundant.

The nature of the proposed restrictions that would apply are:

Changes to Conditions 1, 4, 5, 6, 10 and 14 are shown in ~~strike-out~~ and **bold underline** in the conditions below:

8511 Bombay Electricity Substation

<i>Designation Number</i>	8511
<i>Requiring Authority</i>	Transpower New Zealand Ltd
<i>Location</i>	153 Barber Road, Bombay
<i>Rollover Designation</i>	No
<i>Legacy Reference</i>	Designation 85, Auckland Council District Plan (Franklin Section) 2000

Lapse Date	Given effect to (i.e. no lapse date)
------------	--------------------------------------

Purpose

Electricity transmission - Bombay electricity substation, line connections and associated infrastructure.

Conditions

- ~~The Bombay ICT Project shall be undertaken in general accordance with the plans and information submitted within the Assessment of Environmental Effects for the Notice of Requirement reference 'Bombay Substation alteration to designation - Notice of Requirement and AEE', dated 1 March 2021.~~

~~An Outline Plan for the Bombay ICT Project shall not be required and is waived, unless there are more than minor changes to the plans and information referenced above, in which case Transpower New Zealand Ltd (Transpower) shall clearly identify these changes and Auckland Council may then require an Outline Plan be submitted in accordance with Section 176A of the RMA.~~

- The New Feeder Project shall be undertaken in general accordance with the plans and information submitted within the 'Alteration of Bombay Electricity Substation Designation Conditions', dated X July 2025.**

An Outline Plan for the New Feeder Project shall not be required and is waived, unless there are more than minor changes to the plans and information referenced above, in which case the requiring authority shall clearly identify these changes and Auckland Council may then require an Outline Plan be submitted in accordance with Section 176A of the RMA.

- ~~Any new works other than the works provided for within the Bombay ICT Project in Condition 1 above shall be addressed through an Outline Plan where required in accordance with Section 176A of the Resource Management Act 1991.~~

Cultural / Spiritual

- If any urupā, traditional sites, taonga (significant artefacts), or kōiwi (human remains) are exposed during site works, then the following procedures shall apply:
 - Works in the immediate vicinity of the site that has been exposed shall cease;
 - The site supervisor shall immediately secure the area in a way that ensures that any remains or artefacts are untouched;
 - The site supervisor shall notify representatives of relevant tāngata whenua, Heritage New Zealand – Pouhere Taonga, the Auckland Council and, in the case of human remains, the New Zealand Police; and
 - the notification in (c) above shall allow such persons being given a reasonable time to record and recover archaeological features discovered before work may recommence on the exposed site.

Construction and Maintenance Noise

- ~~4. All construction work shall be designed, managed and conducted to ensure that construction and maintenance noise from the site does not exceed the limits in NZS6803:1999 Acoustics–Construction Noise.~~
4. **All the noise from any construction work activity must be measured, assessed, and managed in accordance with the requirements of NZS6803:1999 Acoustics–Construction Noise. Construction work is defined in New Zealand Standard NZS6803:1999 Acoustics – Construction noise.**
- ~~5. Prior to any significant construction work taking place, including any associated significant earthworks, a noise management plan shall be prepared, with the assistance of a suitably qualified and experienced person, that sets out the management procedures in terms of section 8 and Annex E of NZS6803:1999 and the works shall be undertaken in accordance with that noise management plan.~~
5. **A Construction Noise and Vibration Management Plan (CNVMP) must be submitted to Auckland Council for certification prior to commencement of any construction works that cannot comply with the guideline upper limits of New Zealand Standard NZS6803:1999 Acoustics–Construction Noise. The objective of the CNVMP is to identify and require the adoption of the best practicable option to minimise construction noise and vibration effects as far as practical.**
- ~~6. The noise management plan required by the above condition 3 shall be submitted to Council's Consents Manager for approval, at least 20 working days prior to the works commencing. The Council's Consents Manager shall respond within 20 working days indicating whether approval is given or refused. Approval shall not be unreasonably withheld.~~
6. **The CNVMP required by condition 5 must be submitted to the Council's Consents Manager, for certification a minimum of twenty (20) working days prior to commencement of the works. Construction works must not commence until certification has been received in writing from the Council. Certification must not be unreasonably withheld.**

Vibration

7. Vibration from all construction activities shall not exceed the limits of, and shall be measured and assessed in accordance with, German Standard DIN 4150-3 (1999-02) Structural Vibration – Effects of Vibration on Structures.

Hazardous Substances

8. Any new part of the facility containing oil shall be designed to comply with Transpower's Oil Spill Management Policy (TPG:GS.54.01). Electric and Magnetic Fields (EMF)
- ~~9. Any new equipment, including the Bombay ICT Project, shall be designed and operated to limit the electric and magnetic field exposures at or beyond the secure boundary of the substation site to the International Commission on Non-Ionising~~

~~Radiation Protection, Guidelines for limiting exposure to time-varying electric and magnetic fields (1Hz – 100kHz), (Health Physics 99(6):818-836; 2010) (ICNIRP Guidelines). That is the public exposure reference levels of 5 kV/m for electric fields and 200 µT for magnetic flux density at one metre above ground level under maximum normal operating conditions (ie, when there are no faults in the transmission system).~~

- ~~10. Within 3 months of completing the Bombay ICT Project, Transpower shall engage a suitably qualified and experienced person to confirm compliance with the ICNIRP guidelines as evidenced by actual measurements of electric and magnetic fields in relevant locations. The report shall be submitted to Auckland Council. In the event of any non-compliance, the report shall demonstrate how compliance can be achieved and the timeline for completion.~~

Radio Frequency Interference

11. Any new works or equipment shall be designed to comply with NZS 6869:2004 Limits and Measurement Methods of Electromagnetic Noise from High-Voltage a.c. Power Systems, 0.15 to 1000 MHz.

Earth Potential Rise

12. Any new substation earth grids shall be designed, built, and tested to ensure electrical safety at or beyond the designation boundary in accordance with Transpower Standard TP.DS.52.01, Issue 3, May 2016.

Light Spill

13. Any new exterior lighting shall be designed to comply with:
- AS/NZS 1158.3.1:2020 Lighting for Roads and Public Spaces Part 3.1; and
 - Transpower's guidelines and information for switchyard and grounds lighting TP.DS 40.03 and
 - AS/NA 4282:2019, Control of Obtrusive Effects of Outdoor Lighting.

Operational Noise

- ~~14. A noise management plan shall be submitted for any new equipment (such as transformers, fans and circuit breakers) where the noise from such equipment is likely to generate adverse noise effects for any noise sensitive land uses located in the vicinity.~~
14. **Cumulative noise from the substation (including but not limited to existing or new transformers, necessary fans and circuit breakers) must be designed and operated to ensure that the following noise limits are not exceeded.**

<u>Zone</u>	<u>Time</u>	<u>Noise Limit</u>	<u>Location</u>
<u>Residential zoned sites</u>	<u>0700-2200 hours</u>	<u>55 dB LAeq,15min</u>	<u>At or within the boundary</u>
	<u>2200-0700 hours</u>	<u>45 dB LAeq,15min</u>	
<u>Rural Zoned Sites</u>	<u>0700-2200 hours</u>	<u>55 dB LAeq,15min</u>	<u>At or within the notional boundary</u>
	<u>2200-0700 hours</u>	<u>45 dB LAeq,15min</u>	

Noise must be measured in accordance with New Zealand Standard NZS 6801:2008 Acoustics – Measurement of Environmental Sound and assessed in accordance with NZS 6802:2008 Acoustics – Environmental Noise apart from the application of an adjustment for noise containing special audible characteristics which must not be applied to noise at the 63 Hz and 125Hz centre frequency octave bands.

Landscaping and visual amenity

15. The requiring authority shall ensure that a planted landscaping strip with a minimum width of 10m is established and maintained along the eastern and southern boundaries, and part of the northern and western boundaries, of Lot 1 DP 162890 in accordance with Figure 6 – Mitigation Principles prepared by Isthmus, June 2021.
16. The landscaping shall be implemented as soon as practicable in the planting season following inclusion of the designation in the Auckland Unitary Plan.
17. The landscaping shall be maintained regularly and kept in a tidy condition, including replacement if any planting dies or becomes over mature. The replacement of any vegetation shall be no later than the next planting season (i.e. April to September) following discovery of the need for replacement.
18. Any landscaping required by Condition 15 above may be trimmed or removed where:
 - a. It is necessary in order to remove or reduce any risk to the maintenance or operational integrity of the substations; or
 - b. Future development of National Grid facilities on the site necessitates the removal of any landscaping.
19. If development of National Grid facilities on the site necessitates the removal of any landscaping (such as for new line connections), the Outline Plan submitted for these works shall address how the adverse visual effects of any landscaping removal will be avoided, remedied or mitigated.
20. A 15 m wide height restriction zone shall be maintained along the eastern and southern boundaries, and part of the northern and western boundaries, of Lot 1 DP 162890 in accordance with Figure 6 – Mitigation Principles prepared by Isthmus, June 2021. The height restriction zone extends 15 m into the site from the edge of the planted landscaping strip as shown on shown on Figure 6.
21. Within the height restriction zone, a height limit of 15 m applies to any new substation structures and buildings in accordance with this designation (i.e. any new substation structures and buildings that were not existing as at 31 May 2021). For the avoidance of doubt, this height limit does not apply to transmission lines and transmission line support structures.

Construction Traffic Management Plan

22. At least 20 working days prior to the commencement of any significant construction activities on the site, Transpower shall submit a Construction Traffic Management Plan (CTMP) to the Council for certification. The CTMP shall detail traffic

management and mitigation measures for delivery of substation equipment and materials and general construction activities including, but not limited to, restricting over dimension loads and otherwise limiting heavy vehicle movements wherever practicable to outside of Bombay School peak drop off and pick up times (being 8:15 to 9 am and 2:30 to 3:15 pm Monday to Friday, excluding school and public holidays).

In relation to the delivery of over dimension loads including transformers, the CTMP shall detail traffic management and mitigation measures within the vicinity of the Bombay Substation (i.e. Barber and Paparata Roads).

Advice Note

1. Any new works or equipment means those works which were not existing prior to the notification of the Auckland Unitary Plan.
2. The requiring authority will obtain an over dimension/ overweight load permit as required from Waka Kotahi NZ Transport Authority with input from Auckland Transport.
3. Should any proposed earthworks result in the identification of any previously unknown sensitive materials (i.e. archaeological sites), the requirements of E11.6.1 Land disturbance – Regional Accidental Discovery Rule (as at 14 May 2021 or any subsequent update to this rule) of the Auckland Unitary Plan (Operative in part) shall be complied with.

Attachments

Schedule of Legal Descriptions

The effects that the public work will have on the environment, and the ways in which any adverse effects will be mitigated, are:

General

The only relevant environmental effects to be considered are effects related to changes to the construction noise conditions and new operational noise condition.

Other potential adverse effects are no different to those already enabled by the existing designation.

Altered noise conditions

The proposed altered noise conditions and an explanation for the reasons for the changes from the existing conditions are addressed in the Noise Effects Assessment prepared by WSP attached as **Appendix C**. These conditions and the reasons for the changes sought are summarised as follows:

4. All the noise from any construction work activity must be measured, assessed, and managed in accordance with the requirements of NZS6803:1999 Acoustics– Construction Noise. Construction work is defined in New Zealand Standard NZS6803:1999 Acoustics – Construction noise.

Explanation:

The wording used in the proposed condition aligns with Section E25.6.1(3) of the AUP. It also aligns with the aims of NZS 6803 and the objectives of the AUP to manage, rather than restrict construction noise.

5. A Construction Noise and Vibration Management Plan (CNVMP) must be submitted to Auckland Council for certification prior to commencement of any construction works that cannot comply with the guideline upper limits of New Zealand Standard NZS6803:1999 Acoustics–Construction Noise. The objective of the CNVMP is to identify and require the adoption of the best practicable option to minimise construction noise and vibration effects as far as practical.

Explanation:

The wording used in the proposed condition requires the adoption of a CNVMP for all construction works that do not comply with the construction noise limits within NZS 6803. This removes the ambiguity of “significant construction works”. The revised wording also clarifies that the CNVMP is to manage the construction effects rather than achieve noise and vibration limits, which is the purpose of a CNVMP.

6. The CNVMP required by condition 5 must be submitted to the Council’s Consents Manager, for certification a minimum of twenty (20) working days prior to commencement of the works. Construction works must not commence until certification has been received in writing from the Council. Certification must not be unreasonably withheld.

Explanation:

The wording used in the proposed condition provides Council with sufficient time to review, certify and respond to Transpower with comments and/or recommendations on the CNVMP prior to the commencement of works.

14. Cumulative noise from the substation (including but not limited to existing or new transformers, necessary fans and circuit breakers) must be designed and operated to ensure that the following noise limits are not exceeded.

<u>Zone</u>	<u>Time</u>	<u>Noise Limit</u>	<u>Location</u>
<u>Residential zoned sites</u>	<u>0700-2200 hours</u>	<u>55 dB L_{Aeq,15min}</u>	<u>At or within the boundary</u>
	<u>2200-0700 hours</u>	<u>45 dB L_{Aeq,15min}</u>	
<u>Rural Zoned Sites</u>	<u>0700-2200 hours</u>	<u>55 dB L_{Aeq,15min}</u>	<u>At or within the notional boundary</u>
	<u>2200-0700 hours</u>	<u>45 dB L_{Aeq,15min}</u>	

Noise must be measured in accordance with New Zealand Standard NZS 6801:2008 Acoustics – Measurement of Environmental Sound and assessed in accordance with NZS 6802:2008 Acoustics – Environmental Noise apart from the application of an adjustment for noise containing special audible characteristics which must not be applied to noise at the 63 Hz and 125Hz centre frequency octave bands.

Explanation:

This updated wording provides certainty of the noise generated by the substation both for Transpower and the nearest noise sensitive receptors. The noise limits proposed are in line with AUP Chapter E26 Infrastructure (E26.2.5.3(2)) and AUP Chapter E25 Noise and Vibration. It also requires noise mitigation to be implemented where noise is predicted or measured to be above the limits, which is ambiguous under the existing condition.

As set out in the attached noise assessment, based on noise predictions (for operational noise) undertaken by WSP, the measurement results show that noise from the substation – transformers, lines, fans, and other ancillary equipment – are all below 40 dB LAeq,15min during night time at the closest residential zone boundary and at closest the rural zone notional envelope. This shows that the proposed condition noise limits are achievable based on the current operation from noise predictions.

Overall. In relation to the changes to the construction and operational noise conditions, WSP concludes that the changes:

- Do not restrict construction noise occurring where construction noise limits are predicted to exceed the noise criteria in NZS 6803.
- Require Best Practicable Option (BPO) mitigation to be implemented at all times.
- Align with the aims of NZS 6803 and the objectives of the AUP. Construction noise is not restricted in NZS 6803 or the AUP, so long as BPO mitigation is adopted, which, for construction, means a CNVMP is adopted and followed.
- Integrate operational noise limits to provide certainty to Transpower and the public on what operational noise levels the substation can be expected to generate, and in turn, what the potential noise effects are and when noise mitigation could be required.

Planned Works and Outline Plan Conditions

Conditions 2, 9 and 10 have been deleted as these relate to the Bombay ICT project which has been completed and these conditions are now redundant. Condition 1 has been amended such that details of the New Feeder Project outlined in this notice can proceed without a separate outline plan of works.

Earthworks

The Site is considered a 'piece of land' under Regulation 5(7) of the NESCS due to the presence of HAIL activities. The DSI prepared by SLR includes details of soil sampling, which involved the collection of 16 soil samples from seven locations across the proposed areas of soil disturbance at the site. The DSI concludes that *"the analytical results of the soil sampling have demonstrated that it is highly unlikely that there will be a risk to human health or the environment associated with the proposed work, or ongoing use of the Site as an electrical substation"*.

Based on the findings of the DSI, the proposed works can be undertaken as a permitted activity under Regulation 8(3) of the NESCS provided the requirements *"including duration, soil disturbance volumes not exceeding 3,440 m³ and soil disposal volumes not exceeding 688 m³"* are complied with. Regulation 8(3) will be complied with.

Transpower will undertake any earthworks under a Contaminated Soil Management Plan (CSMP) to ensure soil disturbance is appropriately managed.

The following resource consents are needed for the proposed activity have been applied for:

NA.

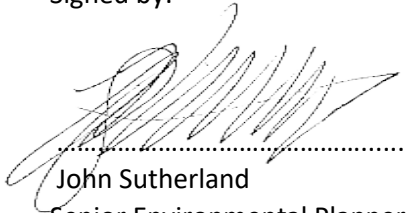
The following consultation has been undertaken with parties that are likely to be affected:

NA. Consultation was not considered necessary for the nature of the changes sought.

Transpower attaches the following information required to be included in this notice by the district plan, regional plan, or any regulations made under the Resource Management Act 1991.

- Appendix A: Certificate of Title
- Appendix B: Existing Bombay Electricity Substation Designation
- Appendix C: WSP Noise Assessment
- Appendix D: Plans of proposed Transpower Works
- Appendix E: Detailed Site Investigation Report

Signed by:



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John Sutherland
Senior Environmental Planner

16 day of June 2025

.....
Date

Address for Service:

Attention: John Sutherland
Transpower New Zealand Limited
PO Box 1021
Wellington 6140

Other Contact Details:

Phone DDI: 03 590 8551
Mobile: 027 856 5892
Email: john.sutherland@transpower.co.nz

Appendix A (A1 and A2)

Certificate of Title



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy**




R.W. Muir
Registrar-General
of Land

Identifier **544790**
Land Registration District **North Auckland**
Date Issued 28 April 2011

Prior References

NA79B/388 NA79B/389 NA84B/259
NA90D/10

Estate Fee Simple
Area 2.1264 hectares more or less
Legal Description Lot 3 Deposited Plan 439460
Registered Owners
Transpower New Zealand Limited

Interests

Subject to Part IV A Conservation Act 1987

Subject to Section 11 Crown Minerals Act 1991 (affects the part formerly Lots 5 & part Lot 9 DP 134365)

C995776.1 Certificate pursuant to Section 14(3) Waikato Raupatu Claims Settlement Act 1995 - 16.5.1996 at 11.30 am
(affects the part formerly contained in CT NA90D/10 and the part formerly Lot 6 DP 134365)

SUBJECT TO SECTION 11 WAIKATO RAUPATU CLAIMS SETTLEMENT ACT 1995 (WHICH PROVIDES FOR
RESIDUAL CROWN LAND TO BE OFFERED FOR PURCHASE TO A LAND HOLDING TRUST FOR WAIKATO
IN CERTAIN CIRCUMSTANCES) - SEE CERTIFICATE D004875.1 - 10.6.1996 AT 11.08 AM

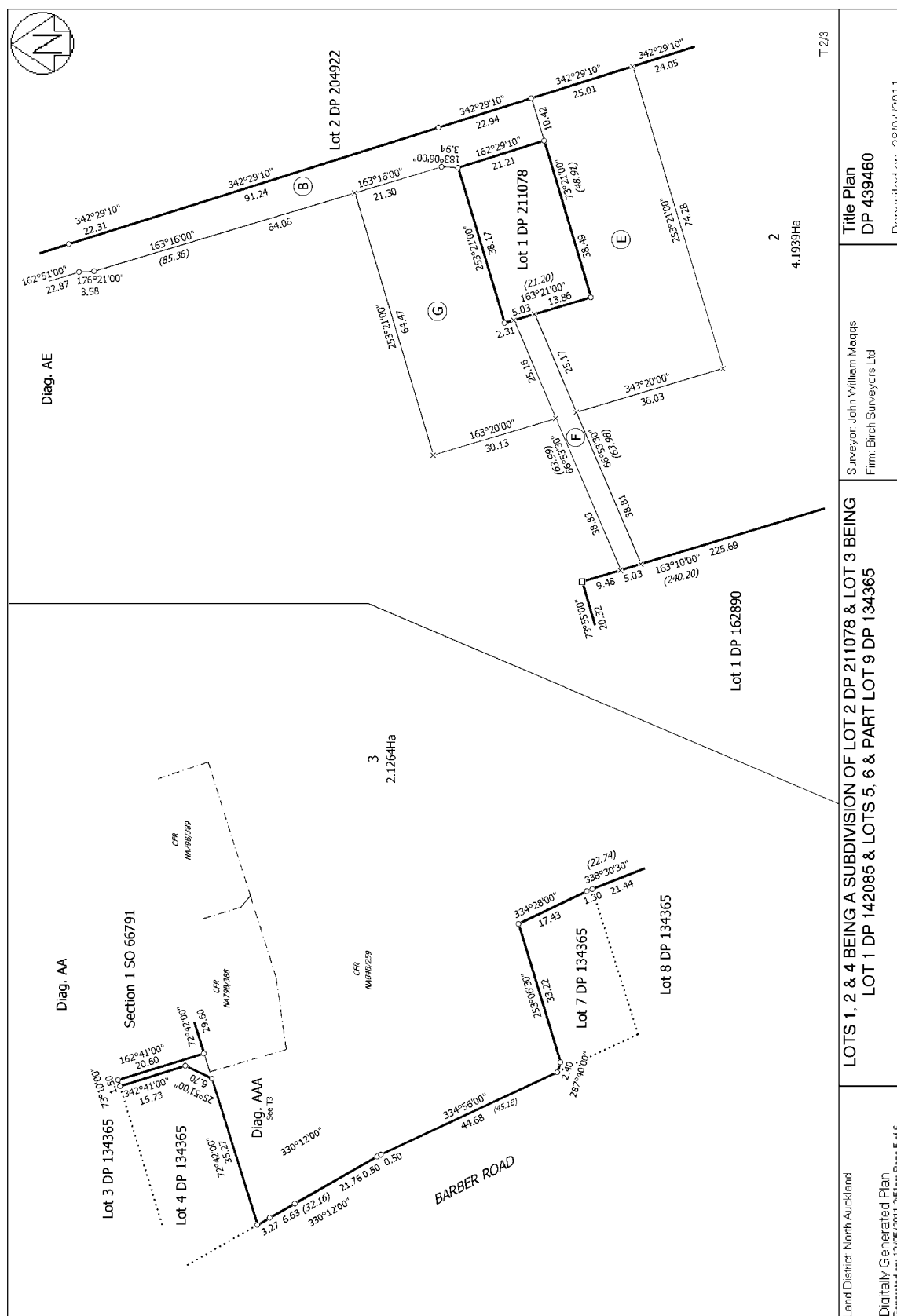
Subject to a right of way over part marked B on DP 560374 created by Easement Instrument 12182991.3 - 1.9.2021 at
10:24 am

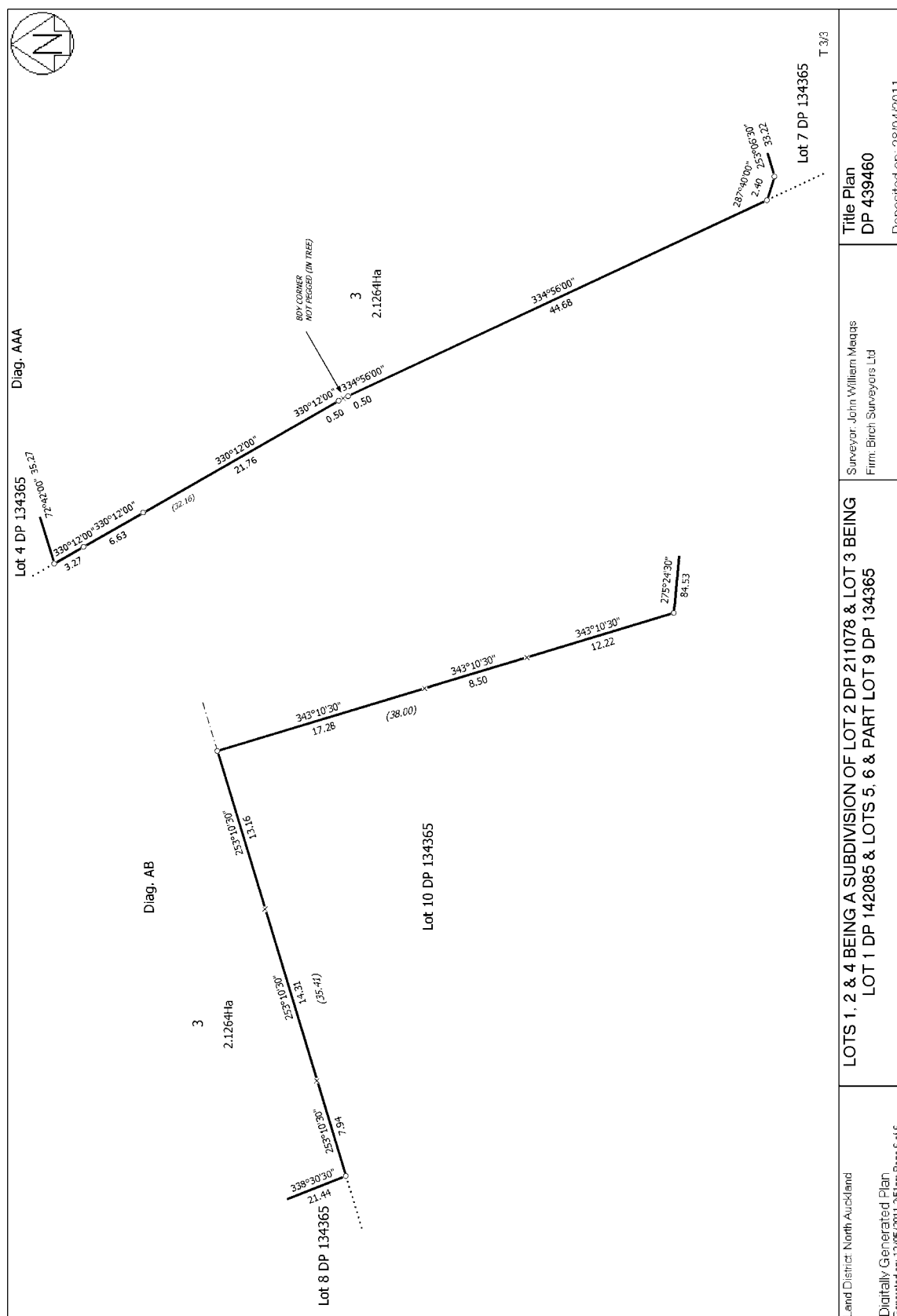
The easements created by Easement Instrument 12182991.3 are subject to Section 243 (a) Resource Management Act 1991

Subject to a right to convey telecommunications, electricity, gas, water and a right to drain sewage, water over part marked
B on DP 560374 created by Easement Instrument 12182991.4 - 1.9.2021 at 10:24 am

The easements created by Easement Instrument 12182991.4 are subject to Section 243 (a) Resource Management Act 1991









RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy




R.W. Muir
Registrar-General
of Land

Identifier **NA98B/125**
Land Registration District **North Auckland**
Date Issued 17 October 1994

Prior References
GN B256735.1

Estate Fee Simple
Area 4.6725 hectares more or less
Legal Description Lot 1 Deposited Plan 162890
Registered Owners
Transpower New Zealand Limited

Interests

Subject to Part IV A Conservation Act 1987
Subject to Section 11 Crown Minerals Act 1991
SUBJECT TO SECTION 11 WAIKATO RAUPATU CLAIMS SETTLEMENT ACT 1995 (WHICH PROVIDES FOR
RESIDUAL CROWN LAND TO BE OFFERED FOR PURCHASE TO A LAND HOLDING TRUST FOR WAIKATO
IN CERTAIN CIRCUMSTANCES) - SEE CERTIFICATE C995776.2 - 16.5.1996 AT 11.30 AM

Search Copy Dated 16/07/25 2:01 pm, Page 2 of 2
Register Only

Appendix B

Existing Bombay Substation Designation

8511 Bombay Electricity Substation

Designation Number	8511
Requiring Authority	Transpower New Zealand Ltd
Location	153 Barber Road, Bombay
Rollover Designation	Yes
Legacy Reference	Designation 85, Auckland Council District Plan (Franklin Section) 2000
Lapse Date	Given effect to (i.e. no lapse date)

Purpose

Electricity transmission - Bombay electricity substation, line connections and associated infrastructure.

Conditions

1. The Bombay ICT Project shall be undertaken in general accordance with the plans and information submitted within the Assessment of Environmental Effects for the Notice of Requirement reference 'Bombay Substation alteration to designation - Notice of Requirement and AEE', dated 1 March 2021.

An Outline Plan for the Bombay ICT Project shall not be required and is waived, unless there are more than minor changes to the plans and information referenced above, in which case Transpower New Zealand Ltd (Transpower) shall clearly identify these changes and Auckland Council may then require an Outline Plan be submitted in accordance with Section 176A of the RMA.

2. Any new works other than the works provided for within the Bombay ICT Project in Condition 1 above shall be addressed through an Outline Plan where required in accordance with Section 176A of the Resource Management Act 1991.

Cultural / Spiritual

3. If any urupā, traditional sites, taonga (significant artefacts), or kōiwi (human remains) are exposed during site works, then the following procedures shall apply:

a. Works in the immediate vicinity of the site that has been exposed shall cease;

b. The site supervisor shall immediately secure the area in a way that ensures that any remains or artefacts are untouched;

c. The site supervisor shall notify representatives of relevant tāngata whenua, Heritage New Zealand – Pouhere Taonga, the Auckland Council and, in the case of human remains, the New Zealand Police; and

d. the notification in (c) above shall allow such persons being given a reasonable time to record and recover archaeological features discovered before work may recommence on the exposed site.

Construction and Maintenance Noise

4. All construction work shall be designed, managed and conducted to ensure that construction and maintenance noise from the site does not exceed the limits in NZS6803:1999 Acoustics—Construction Noise.

5. Prior to any significant construction work taking place, including any associated significant earthworks, a noise management plan shall be prepared, with the assistance of a suitably qualified and experienced person, that sets out the management procedures in terms of section 8 and Annex E of NZS6803:1999 and the works shall be undertaken in accordance with that noise management plan.

6. The noise management plan required by the above condition 3 shall be submitted to Council's Consents Manager for approval, at least 20 working days prior to the works commencing. The Council's Consents Manager shall respond within 20 working days indicating whether approval is given or refused. Approval shall not be unreasonably withheld.

Vibration

7. Vibration from all construction activities shall not exceed the limits of, and shall be measured and assessed in accordance with, German Standard DIN 4150-3 (1999-02) Structural Vibration – Effects of Vibration on Structures.

Hazardous Substances

8. Any new part of the facility containing oil shall be designed to comply with Transpower's Oil Spill Management Policy (TPG:GS.54.01).

Electric and Magnetic Fields (EMF)

9. Any new equipment, including the Bombay ICT Project, shall be designed and operated to limit the electric and magnetic field exposures at or beyond the secure boundary of the substation site to the International Commission on Non-Ionising Radiation Protection, Guidelines for limiting exposure to time-varying electric and magnetic fields (1Hz – 100kHz), (Health Physics 99(6):818-836; 2010) (ICNIRP Guidelines). That is the public exposure reference levels of 5 kV/m for electric fields and 200 µT for magnetic flux density at one metre above ground level under maximum normal operating conditions (ie, when there are no faults in the transmission system).

10. Within 3 months of completing the Bombay ICT Project, Transpower shall engage a suitably qualified and experienced person to confirm compliance with the ICNIRP guidelines as evidenced by actual measurements of electric and magnetic fields in relevant locations. The report shall be submitted to Auckland Council. In the event of any non-compliance, the report shall demonstrate how compliance can be achieved and the timeline for completion.

Radio Frequency Interference

11. Any new works or equipment shall be designed to comply with NZS 6869:2004 Limits and Measurement Methods of Electromagnetic Noise from High-Voltage a.c. Power Systems, 0.15 to 1000 MHz.

Earth Potential Rise

12. Any new substation earth grids shall be designed, built, and tested to ensure electrical safety at or beyond the designation boundary in accordance with Transpower Standard TP.DS.52.01, Issue 3, May 2016.

Light Spill

13. Any new exterior lighting shall be designed to comply with:
- a. AS/NZS 1158.3.1:2020 Lighting for Roads and Public Spaces Part 3.1; and
 - b. Transpower's guidelines and information for switchyard and grounds lighting TP.DS 40.03 and
 - c. AS/NA 4282:2019, Control of Obtrusive Effects of Outdoor Lighting.

Operational Noise

14. A noise management plan shall be submitted for any new equipment (such as transformers, fans and circuit breakers) where the noise from such equipment is likely to generate adverse noise effects for any noise sensitive land uses located in the vicinity.

Landscaping and visual amenity

15. The requiring authority shall ensure that a planted landscaping strip with a minimum width of 10m is established and maintained along the eastern and southern boundaries, and part of the northern and western boundaries, of Lot 1 DP 162890 in accordance with Figure 6 – Mitigation Principles prepared by Isthmus, June 2021.

16. The landscaping shall be implemented as soon as practicable in the planting season following inclusion of the designation in the Auckland Unitary Plan.

17. The landscaping shall be maintained regularly and kept in a tidy condition, including replacement if any planting dies or becomes over mature. The replacement of any vegetation shall be no later than the next planting season (i.e. April to September) following discovery of the need for replacement.

18. Any landscaping required by Condition 15 above may be trimmed or removed where:

- a) It is necessary in order to remove or reduce any risk to the maintenance or operational integrity of the substations; or
- b) Future development of National Grid facilities on the site necessitates the removal of any landscaping.

19. If development of National Grid facilities on the site necessitates the removal of any landscaping (such as for new line connections), the Outline Plan submitted for these works shall address how the adverse visual effects of any landscaping removal will be avoided, remedied or mitigated.

20. A 15 m wide height restriction zone shall be maintained along the eastern and southern boundaries, and part of the northern and western boundaries, of Lot 1 DP 162890 in accordance with Figure 6 – Mitigation Principles prepared by Isthmus, June 2021. The height restriction zone extends 15 m into the site from the edge of the planted landscaping strip as shown on shown on Figure 6.

21. Within the height restriction zone, a height limit of 15 m applies to any new substation structures and buildings in accordance with this designation (i.e. any new substation structures and buildings that were not existing as at 31 May 2021). For the avoidance of doubt, this height limit does not apply to transmission lines and transmission line support structures.

Construction Traffic Management Plan

22. At least 20 working days prior to the commencement of any significant construction activities on the site, Transpower shall submit a Construction Traffic Management Plan (CTMP) to the Council for certification. The CTMP shall detail traffic management and mitigation measures for delivery of substation equipment and materials and general construction activities including, but not limited to, restricting over dimension loads and otherwise limiting heavy vehicle movements wherever practicable to outside of Bombay School peak drop off and pick up times (being 8:15 to 9 am and 2:30 to 3:15 pm Monday to Friday, excluding school and public holidays).

In relation to the delivery of over dimension loads including transformers, the CTMP shall detail traffic management and mitigation measures within the vicinity of the Bombay Substation (i.e. Barber and Paparata Roads).

Advice Note

1. Any new works or equipment means those works which were not existing prior to the notification of the Auckland Unitary Plan.
2. The requiring authority will obtain an over dimension/ overweight load permit as required from Waka Kotahi NZ Transport Authority with input from Auckland Transport.
3. Should any proposed earthworks result in the identification of any previously unknown sensitive materials (i.e. archaeological sites), the requirements of E11.6.1 Land disturbance – Regional Accidental Discovery Rule (as at 14 May 2021 or any subsequent update to this rule) of the Auckland Unitary Plan (Operative in part) shall be complied with.

Attachments

Schedule of Legal Descriptions

Parcel ID	
Lot 3 DP 439460 Lot DP 162890	

Landscape strip and height restriction area map

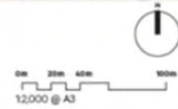


Figure 6 - Mitigation Principles

Scale 1:12,000 @ A3
Drawing No. SK26
Produced by Isthmus Group Ltd.
Base map source: Auckland Council GIS (Geomapx)

LEGEND:

	Proposed native low growing species & shrubs up to 2m in height		Courtney Power Site (Designation 3010)
	Proposed native tree planting		10m height restriction zone
	Existing Contours (SDEM)		



Isthmus.
Solving Interconnecting Transforms | Transpower New Zealand Ltd | June 2025

Appendix C

WSP Noise Assessment



Consultant Advice Note

To	John Sutherland (Transpower)
Copy	Chris Horne (Incite)
From	George van Hout (WSP)
Date	9 July 2025
File/Ref	250709-ITPA08-GvH-R1-Rev1-Bombay Substation Designation Amendment
Subject	Assessment of Noise Effects Associated with Bombay Substation Designation Condition Amendment

Introduction

Transpower New Zealand Limited operate Bombay Electricity Substation, at 153 Barber Road, Bombay, Auckland. This designation has three conditions relating to construction noise and one relating to operational noise.

WSP has been engaged to assess the potential noise impacts of a change to Condition 4, Condition 5, Condition 6, and Condition 14 of the Bombay Electricity Substation (AUP designation 8511).

The purpose of this Consultant Advice Note (CAN) is to propose amendments to the Conditions to align with the AUP and referenced NZ Standards, then assess the noise effects associated with the amendment. To that regard, this CAN outlines the existing designation conditions, the revised conditions, and the noise effects associated with the changes.

Existing Designation Conditions

There are currently three (3) conditions under the *Construction and Maintenance Noise* section (Conditions 4 – 6) and one (1) under the *Operational Noise* section (Condition 14) of Designation 8511, that are recommended to be revised. These conditions are reproduced below:

4. *All construction work shall be designed, managed and conducted to ensure that construction and maintenance noise from the site does not exceed the limits in NZS6803:1999 Acoustics–Construction Noise.*
5. *Prior to any significant construction work taking place, including any associated significant earthworks, a noise management plan shall be prepared, with the assistance of a suitably qualified and experienced person, that sets out the management procedures in terms of section 8 and Annex E of NZS6803:1999 and the works shall be undertaken in accordance with that noise management plan.*

6. *The noise management plan required by the above condition 3 shall be submitted to Council's Consents Manager for approval, at least 20 working days prior to the works commencing. The Council's Consents Manager shall respond within 20 working days indicating whether approval is given or refused. Approval shall not be unreasonably withheld.*
14. *A noise management plan shall be submitted for any new equipment (such as transformers, fans and circuit breakers) where the noise from such equipment is likely to generate adverse noise effects for any noise sensitive land uses located in the vicinity.*

The wording of Condition 4 requires that the recommended noise limits outlined in Table 2 and Table 3 of NZS 6803 are not exceeded. However, the scope and aims of NZS 6803 are not to restrict construction activities in this way, but to enable them by requiring developers, site operators and/or contractors to manage noise emissions. It is not a mandatory requirement to comply with the noise limits when undertaking an assessment in line with NZS 6803 (unlike the existing Condition 4 wording); instead, these limits are used to determine the level of noise mitigation required.

Condition 5 references "any significant construction work" the construction work which is "significant" is not defined. Therefore, it is recommended this is reworded to clarify what construction works require the implementation of a Construction Noise and Vibration Management Plan (CNVMP).

The wording of Condition 6 requires that the CNVMP is "sent for approval" prior to works commencing. The submission to Council is required under the Outline Plan of Works (OPW), but it is not required to be approved. Council can only provide comment and/or recommendations for this. It is recommended that this condition is updated in line with the requirements of an OPW process.

Condition 14 requires a noise management plan to be submitted for any new equipment that is predicted or measured that generates adverse noise effects. The noise levels where adverse effects would occur is not stated, nor what is required if there are adverse noise effects. This condition does not protect Transpower from generating adverse effects or receivers from receiving adverse effects.

Proposed Designation Conditions

It is recommended that Condition 4 be revised to align with the scope and objectives of NZS 6803. The proposed wording for Condition 4 is provided below:

4. *All the noise from any construction work activity must be measured, assessed, and managed in accordance with the requirements of NZS6803:1999 Acoustics–Construction Noise. Construction work is defined in New Zealand Standard NZS6803:1999 Acoustics – Construction noise.*

The wording used in the proposed condition aligns with Section E25.6.1(3) of the Auckland Unitary Plan (AUP). It also aligns with the aims of NZS 6803 and the objectives of the AUP to manage, rather than restrict construction noise.

It is recommended that Condition 5 be revised to:

5. *A Construction Noise and Vibration Management Plan (CNVMP) must be submitted to Auckland Council for certification prior to commencement of any construction works that cannot comply with the guideline upper limits of New Zealand Standard NZS6803:1999 Acoustics–Construction Noise. The objective of the CNVMP is to identify and require the adoption of the best practicable option to minimise construction noise and vibration effects as far as practical.*

The wording used in the proposed condition requires the adoption of a CNVMP for all construction works that do not comply with the construction noise limits within NZS 6803. This removes the ambiguity of “significant construction works”. The revised wording also clarifies that the CNVMP is to manage the construction effects rather than achieve noise and vibration limits, which is the purpose of a CNVMP.

It is recommended that Condition 6 be revised to:

6. *The CNVMP required by condition 5 must be submitted to the Council's Consents Manager for certification a minimum of twenty (20) working days prior to commencement of the works. Construction works must not commence until certification has been received in writing from the Council. Certification must not be unreasonably withheld.*

The wording used in the proposed condition provides Council with sufficient time to review, certify and respond to the Designation holder with comment and/or recommendation in an advisory capacity prior to the commencement of works.

The operational noise condition 14 is recommended to be revised to:

14. *Cumulative noise from the Transpower substation (including but not limited to existing or new transformers, necessary fans and circuit breakers) must be designed and operated to ensure that the following noise limits are not exceeded.*

Zone	Timing	Noise limit	Location
Residential zoned sites	0700 – 2200 hours	55 dB $L_{Aeq,15min}$	At or within the boundary
	2200 – 0700 hours	45 dB $L_{Aeq,15min}$ 75 dB L_{AFmax}	
Rural zoned sites	0700 – 2200 hours	55 dB $L_{Aeq,15min}$	At or within the notional boundary
	2200 – 0700 hours	45 dB $L_{Aeq,15min}$ 75 dB L_{AFmax}	

Noise must be measured in accordance with New Zealand Standard NZS 6801:2008 Acoustics – Measurement of Environmental Sound and assessed in accordance with NZS 6802:2008 Acoustics – Environmental Noise apart from the application of an adjustment for noise containing special audible characteristics which must not be applied to noise at the 63 Hz and 125Hz centre frequency octave bands.

This updated wording provides certainty of the noise generated by the substation both for Transpower and the nearest noise sensitive receptors. The noise limits proposed are in line with AUP Chapter E26 *Infrastructure* (E26.2.5.3(2)) and AUP Chapter E25 *Noise and Vibration*. It also requires noise mitigation to be implemented where noise is predicted or measured to be above the limits, which is ambiguous under the existing Condition.

Noise Effects Discussion

Condition 4

Condition 4 currently restricts any construction works from occurring unless the noise generated is below the recommended noise limits in NZS 6803.

The revision to Condition 4 is less restrictive and permits construction works to occur as long as the construction noise is measured, assessed, and managed per NZS 6803. This would allow construction activities to generate higher noise levels than those outlined in NZS 6803, provided that procedures to determine the Best Practicable Option (BPO) for mitigation are developed, followed, and implemented. Note that NZS 6803 states “A *noise management plan will often be appropriate to achieve the aims of the Standard*”. Therefore, restricting construction work that does not achieve the noise limits in NZS 6803 is not in line with the aims of NZS 6803.

The requirement to develop and implement BPO mitigation is already stipulated by existing Designation Conditions 5 and 6, which mandates the implementation of a CNVMP, which is in line with the aims of NZS 6803. The use of a CNVMP to manage effects from construction aligns with the objectives of AUP Chapter E26 Infrastructure. Section E26.2.1(4) allows the *development, operation, maintenance, repair, replacement, renewal, upgrading and removal* of infrastructure, as long as adverse effects are avoided, remedied, or mitigated (Section E26.2.1(9)).

Note that the operation, maintenance, and repair of utilities (A1) is a permitted activity in all zones as per Chapter E26 of the AUP (Table E26.2.3.1). It is therefore reasonable to expect construction to occur as part of utility works and not be prohibited if it does not comply with the NZS 6803 noise limits.

The AUP does not prohibit construction works (unlike the existing Condition 4 wording). Instead, construction works are allowed as long as duration, frequency, and timing are controlled to manage effects (Objective E25.2(4)). The proposed wording of Designation Condition 4 is in line with this objective within the AUP, allowing construction to occur so long as noise effects are managed. The CNVMP required by Designation Conditions 5 and 6 serves as a method to manage any adverse effects.

In summary, the proposed revised wording for Condition 4 aligns with the existing Designation Conditions, the AUP infrastructure permitted standards, the AUP construction noise requirements, and enables construction works while managing effects in line with NZS 6803. The change in wording would provide the same level of effects as the AUP, and therefore the acoustic effects are low.

Condition 5

Existing Condition 5 only requires a CNVMP when there are “significant construction work”. There is ambiguity on what constitutes “significant” works.

The wording of the revised Condition 5 clarifies which construction works are required to adopt a CNVMP - all works exceeding the NZS 6803 construction noise criteria.

The use of a CNVMP for construction works exceeding the NZS 6803 noise limits aligns with the aims of NZS 6803 (being to manage noise effects from construction) and Objective E25.2(4) of the AUP.

The use of a CNVMP where the NZS 6803 construction noise limits are exceeded is also an industry best-practice. Experience on other construction projects of various scales typically have CNVMP's to manage noise effects from construction.

The inclusion of the objective of the CNVMP within the revised Condition 5 clarifies that the CNVMP is to minimise noise and vibration effects (by using the BPO mitigation). This follows

the revised Condition 4 which allows noise levels higher than the NZS 6803 noise levels, so long as BPO mitigation is adopted.

In summary, the amended wording of Condition 5 has the same outcome/noise effect as the existing Designation Condition wording, whilst clarifying what “significant” works are. It is also in line with the AUP and NZS 6803. Therefore, the acoustic effects are low.

Condition 6

Condition 6 currently requires approval from Council prior to works commencing and provides opportunity for refusal of the works. This is not aligned with the process for an Outline Plan of Works which allows for Designation activities to be undertaken so long as works are submitted to Council for certification within a defined number of working days.

The wording of the revised Condition 6 requires that Council shall certify the CNVMP and also provides opportunity for comment and/or recommendation in an advisory capacity to the Designation holder in advance of the works commencing.

The revised condition still requires the CNVMP to be submitted to Council for certification at least twenty (20) working days in advance of the works, to allow for enough time for review and response.

As such, the acoustic effects associated with the revised wording for Condition 6 are low.

Condition 14

The current Condition 14 requires a noise management plan when new equipment is “likely to generate adverse noise effects”. The level at which adverse noise effects are generated is not explicit, and therefore it is ambiguous when a noise management plan is required. In addition, there is no requirement if the outcomes of the noise management plan is that there are adverse noise effects (i.e. is noise mitigation required).

Noise sensitive land uses are not defined and whether this relates to zoning or actual use of the site (for example residential receptor in a business zone).

The proposed wording of Condition 14 provides explicit noise limits to which Bombay Substation operates. These limits are based on AUP Chapter E26 *Infrastructure* (E26.2.5.3(2)) and AUP Chapter E25 *Noise and Vibration*. The noise limits in these chapters provide the permitted baseline for noise within this environment.

The Chapter E25 and E26 noise limits would be used to determine if Bombay Substation is “likely to generate adverse noise effects” under the existing Condition 14 wording where a noise management plan is undertaken. Providing a condition which provides these actual limits removes the ambiguity from the current Conditions

As noise limits are set at specific sites, the proposed Condition 14 wording also clarifies what a “noise sensitive land use” is.

Noise limits provide certainty to Council, Transpower, and adjacent receptors on what constitutes a “reasonable level of noise” and as such onset of adverse noise effects.

Noise measurements were made by WSP on the boundary on Barber Road residential properties to the Bombay Substation on the night of 3 June 2025 with a calibrated Class 1 SLM between 2200 hours and 0100 hours.

A series of 15-minute measurements near 163 Barber Rd and 159 Barber Rd ranged from 35 – 40 dB $L_{Aeq,15min}$ / 33 – 39 $L_{A90,15min}$. Noise measurements near 149 Barber Road ranged from 35 – 40 dB $L_{Aeq,15min}$ / 31 – 35 dB $L_{A90,15min}$. These measurements included noise from the substation (transformers, fans corona discharge) and traffic, fauna (sheep, birds), and foliage noise (wind in trees). This shows that the proposed condition noise limits are achievable based on the current operation from noise measurements.

The proposed Condition 14 wording amendment provides a definitive noise level to which adverse noise effects are considered. Since it is a limit, noise mitigation would be needed if this limit is exceeded. The proposed condition provides a higher level of noise protection than the current condition. Therefore, the change in noise effects is low or has a benefit.

Summary

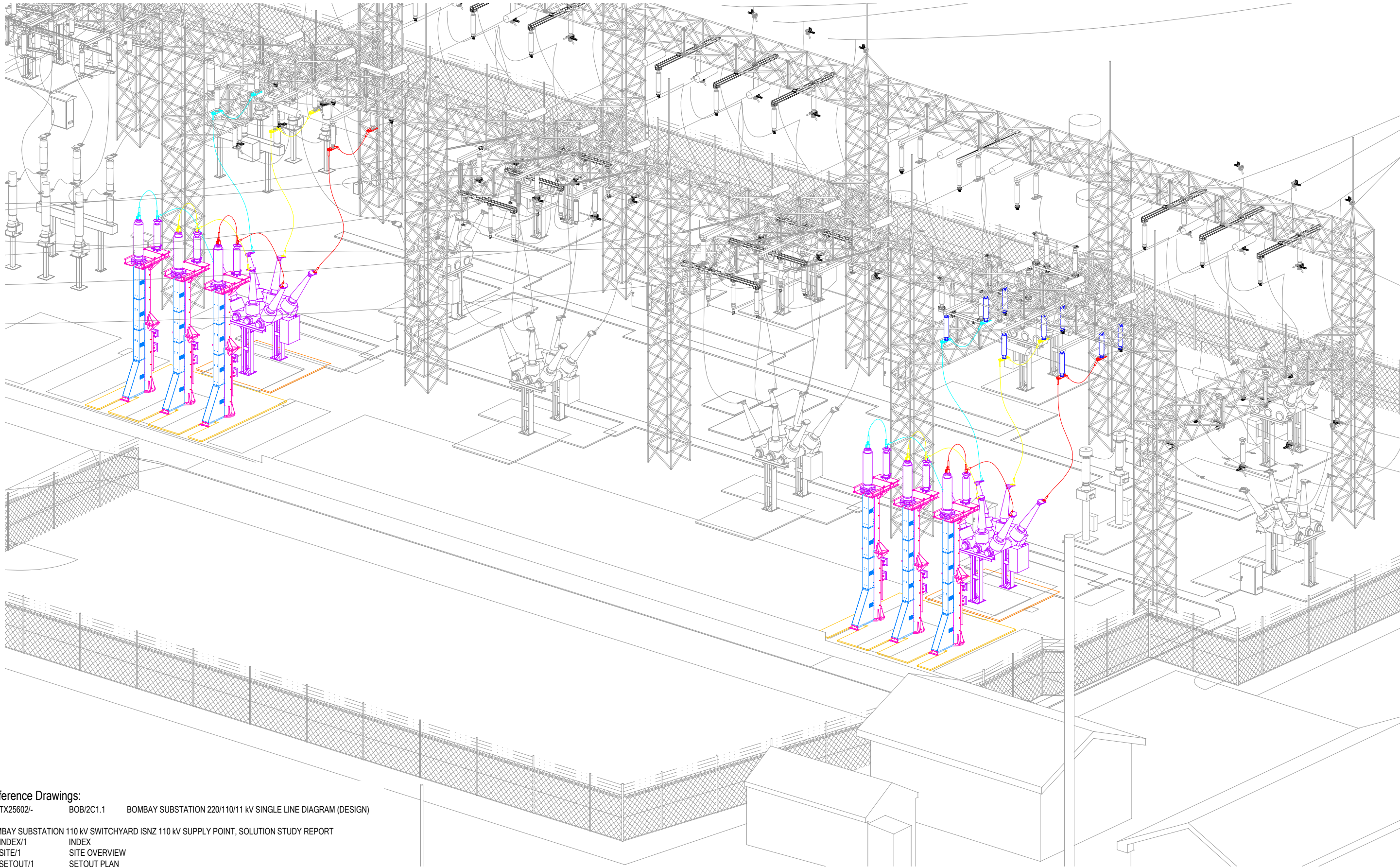
As discussed above, the change in wording of the Designation Conditions:

- Does not restrict construction occurring where noise limits are predicted to exceed the noise criteria in NZS 6803.
- Requires BPO mitigation to be implemented at all times.
- Aligns with the aims of NZS 6803 and the objectives of the AUP. Construction noise is not restricted in NZS 6803 or the AUP, so long as BPO mitigation is adopted, which, for construction, means a CNVMP is adopted and followed.
- Integrates operational noise limits to provide certainty to what a reasonable level of noise is, the onset of potential noise effects, and trigger for noise mitigation.

Appendix D

Plans of Proposed Works

TRANSPOWER DRAWING TITLE BLOCK VERSION: E3.0.1



- Reference Drawings:**
- | | | |
|--------------|-----------|--|
| SK_TX25602/- | BOB/2C1.1 | BOMBAY SUBSTATION 220/110/11 kV SINGLE LINE DIAGRAM (DESIGN) |
|--------------|-----------|--|
- BOMBAY SUBSTATION 110 kV SWITCHYARD ISNZ 110 kV SUPPLY POINT, SOLUTION STUDY REPORT
- | | |
|------------------|-----------------------------|
| TP_INDEX/1 | INDEX |
| TP_SITE/1 | SITE OVERVIEW |
| TP_SETOUT/1 | SETOUT PLAN |
| TP_110kV CABLE/1 | 110 kV CABLE ROUTES |
| TP_MAINTENANCE/1 | BAY ELEVATION & MAINTENANCE |
| TP_EARTHWORK/1 | CIVIL EARTHWORKS |
| TP_LIGHTNING/1 | LIGHTNING SHIELDING |

REV	REVISION DESCRIPTION	CONSULTANT									TP	
		CONSLT	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE
-1	First Issue	AECOM	PS	5.25	PS	5.25	IG	5.25	GQ	5.25	-	-



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BOMBAY SUBSTATION
110 kV SWITCHYARD
ISNZ 110 kV SUPPLY POINT, SOLUTION STUDY REPORT
INDEX

TRANSPOWER PROJECT CODE IP_BOB_00Q_0_00		FOLDER -	
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DRAWING CREATED BY: AECOM NZ Ltd (60739090) https://www.AECOM.com/nz		SCALE 1:75	

TRANSPOWER DRAWING TITLE BLOCK VERSION: E3.0.1



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-2	Changed drawing number.	AECOM	PS	5.25	PS	5.25	IG	5.25	GQ	5.25	-	-



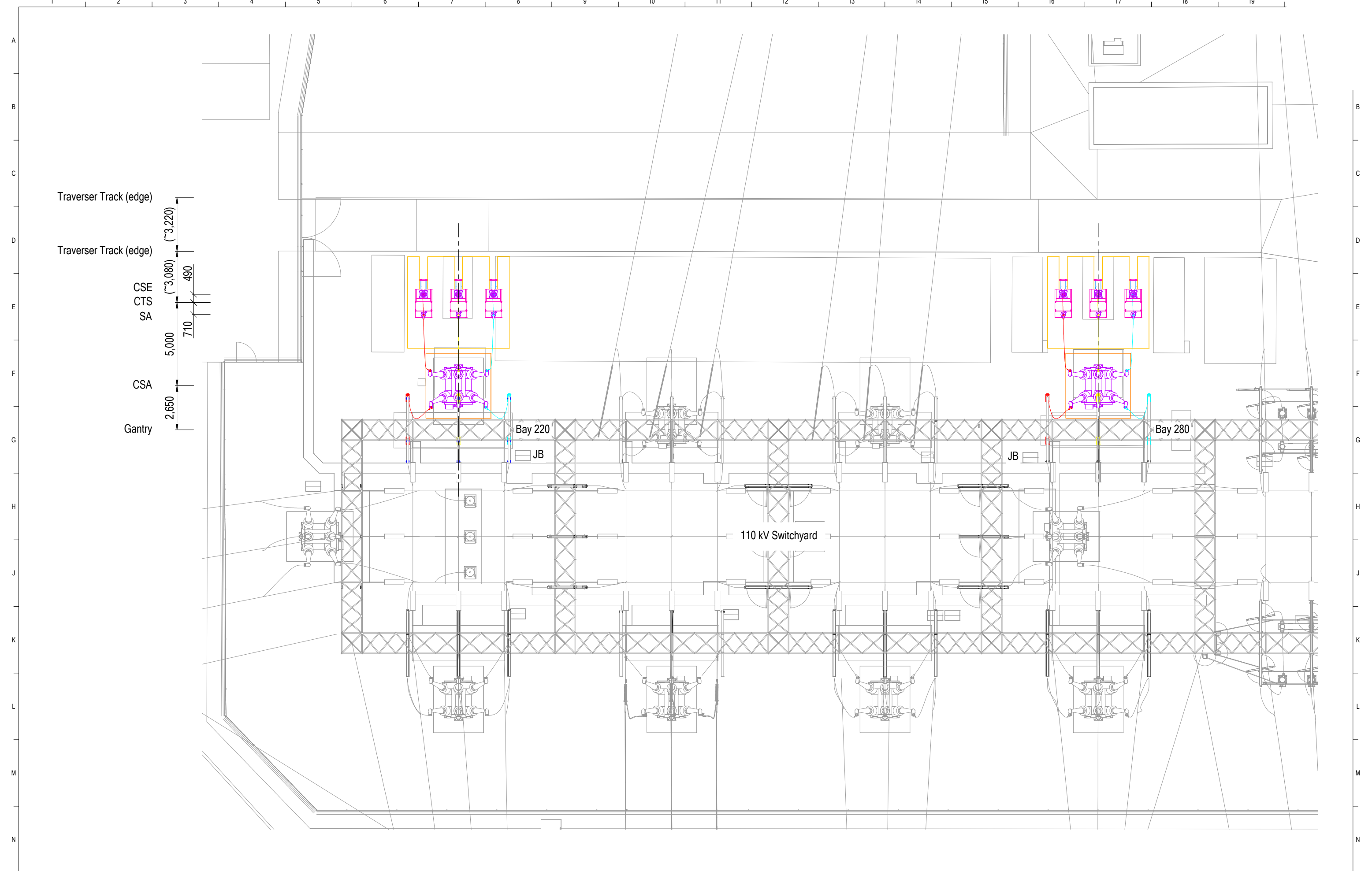
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BOMBAY SUBSTATION				TRANSPOWER PROJECT CODE		FOLDER	
110 kV SWITCHYARD				IP_BOB_00Q_0_00		-	
ISNZ 110 kV SUPPLY POINT, SOLUTION STUDY REPORT				DRAWING NUMBER		SHEET	REVISION
SITE OVERVIEW				TP OVERVIEW		1	-2
				DRAWING CREATED BY:		SCALE	
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				https://www.AECOM.com/nz			

QREF:

A1

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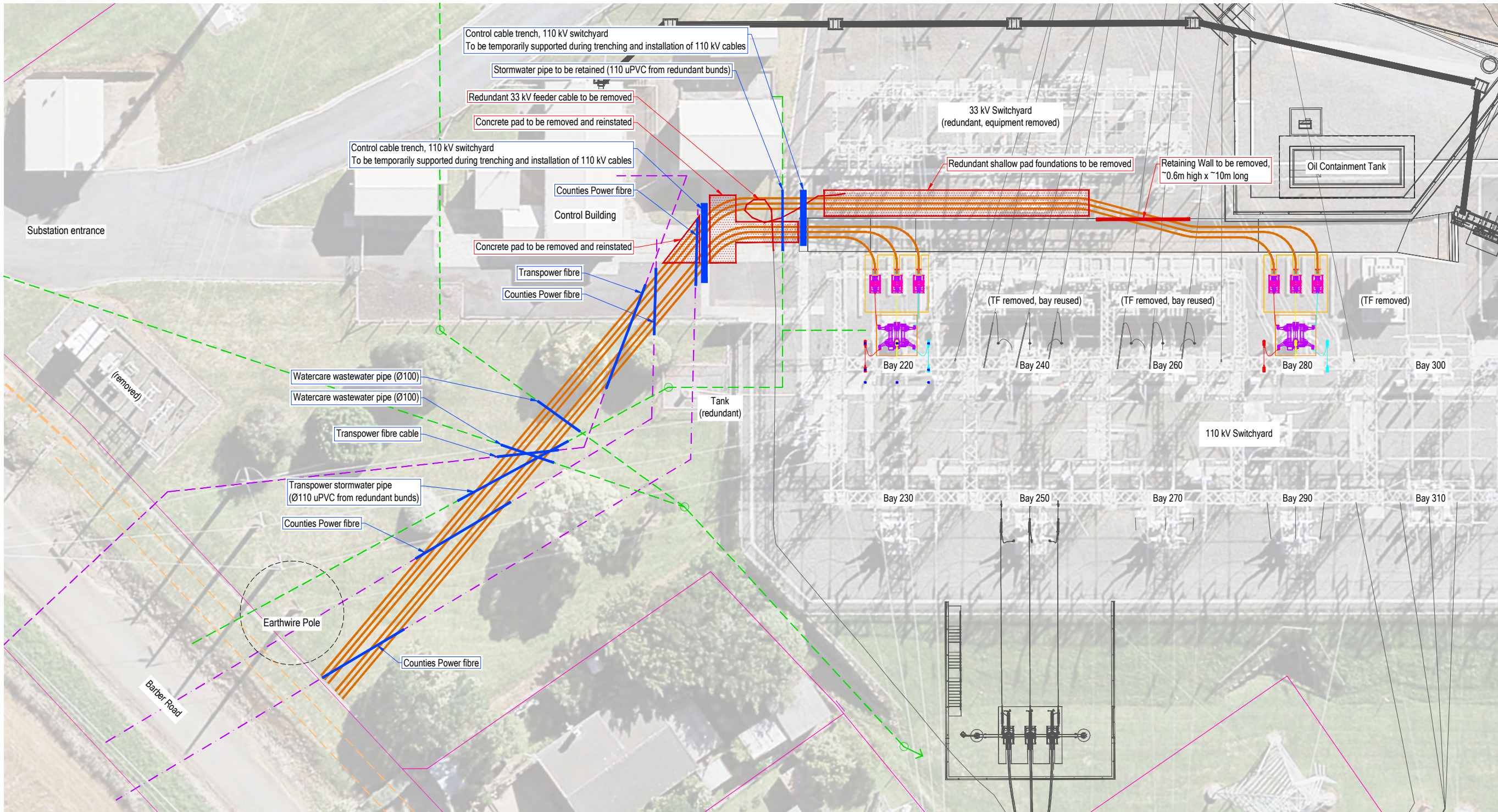
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-2	Minor updates	AECOM	PS	5.25	PS	5.25	IG	5.25	GQ	5.25	-	-	-



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110 kV SWITCHYARD		DRAWING NUMBER		SHEET	REVISION
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ISNZ 110 kV SUPPLY POINT, SOLUTION STUDY REPORT		DRAWING CREATED BY: AECOM NZ Ltd (60739090) https://www.AECOM.com/nz		SCALE	
				1:100	
SETOUT PLAN					

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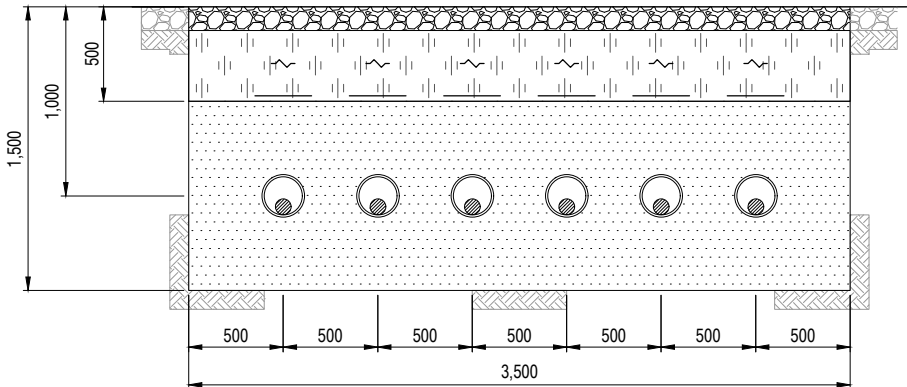


Key for Plan:

- Proposed 33 kV Cable
- Removal
- Conflict (asset to be retained)
- Stormwater
- Fibre, Transpower
- Fibre, Counties Energy
- Power, 230/400 V, 11-22 kV, Counties Energy
- Boundary

Notes:

- Stormwater routes based on as-built Transpower drawings.
- Transpower fibre route from as-built Transpower drawing TP74031_- A and from BeforeUdig records. Note, the drawing and records do not align for the section of cable route through the paddock. The route need to be verified onsite.
- Counties Energy fibre routes are based on BeforeUdig records. There are mutple discrepancies (e.g cable through oil containment tank, and cables ending short of any building. The routes need to be verified onsite.



Cable Trench, Tycpial
Min values shown

Key for Cable Trench:

- Switchyard Metal, 125±25mm thick (or other)
- Natural Ground
- Trench Backfill (Native, Screened)
- Granular Thermal Backfill, dry TR = 1.1K.m/W
- Warning Tape, 500mm below surface level
- MagSlab, 300mm wide, 300mm above cable
- 110kV Cable, 800mm² Al, XLPE
- Duct, 200 NB

REV	REVISION DESCRIPTION	CONSULTANT										TP	
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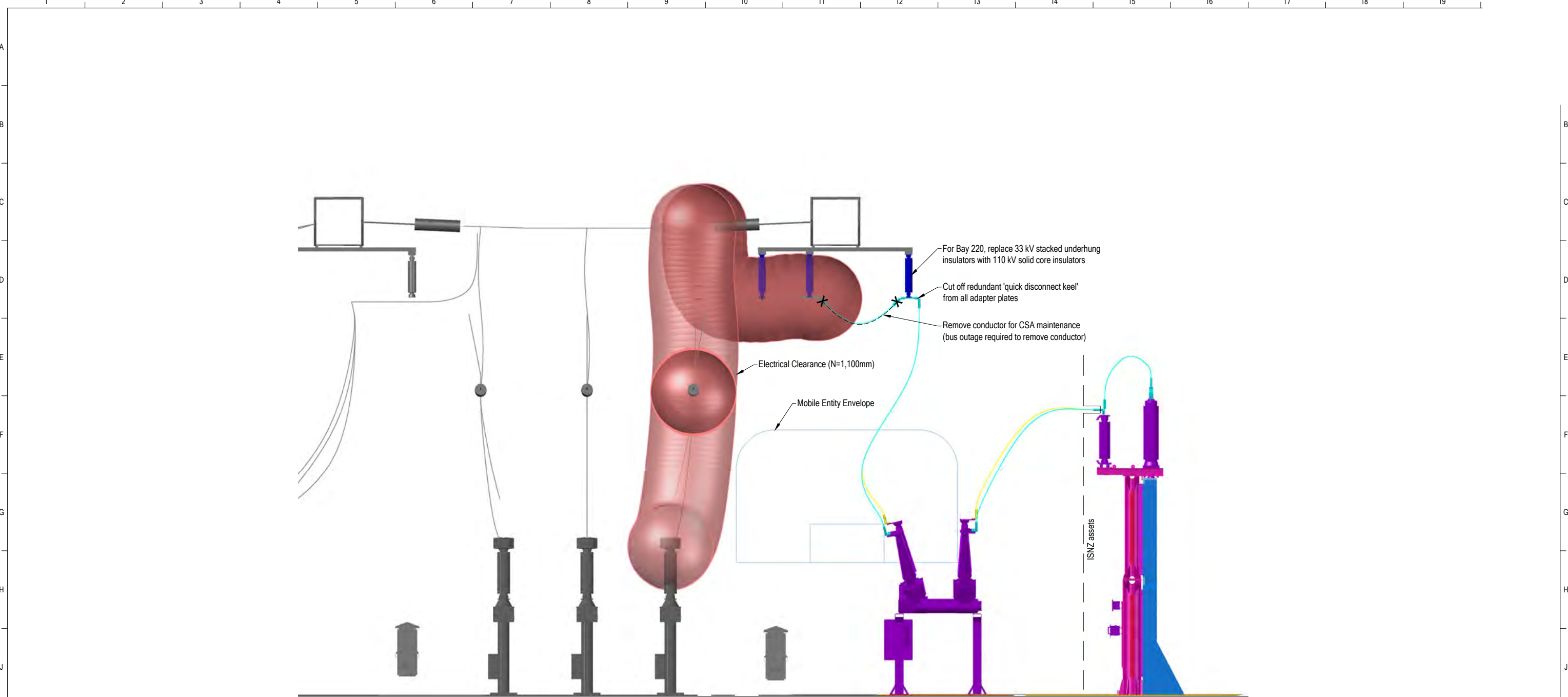
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		AECOM NZ Ltd (60739090) https://www.AECOM.com/nz		1:20 & 1:200	

QREF:

A1

TRANSPOWER DRAWING TITLE BLOCK VERSION: E3.0.1



Bay 220 Elevation
Bay 280 similar, differences noted.
Nearest live points shown
Existing items in grey

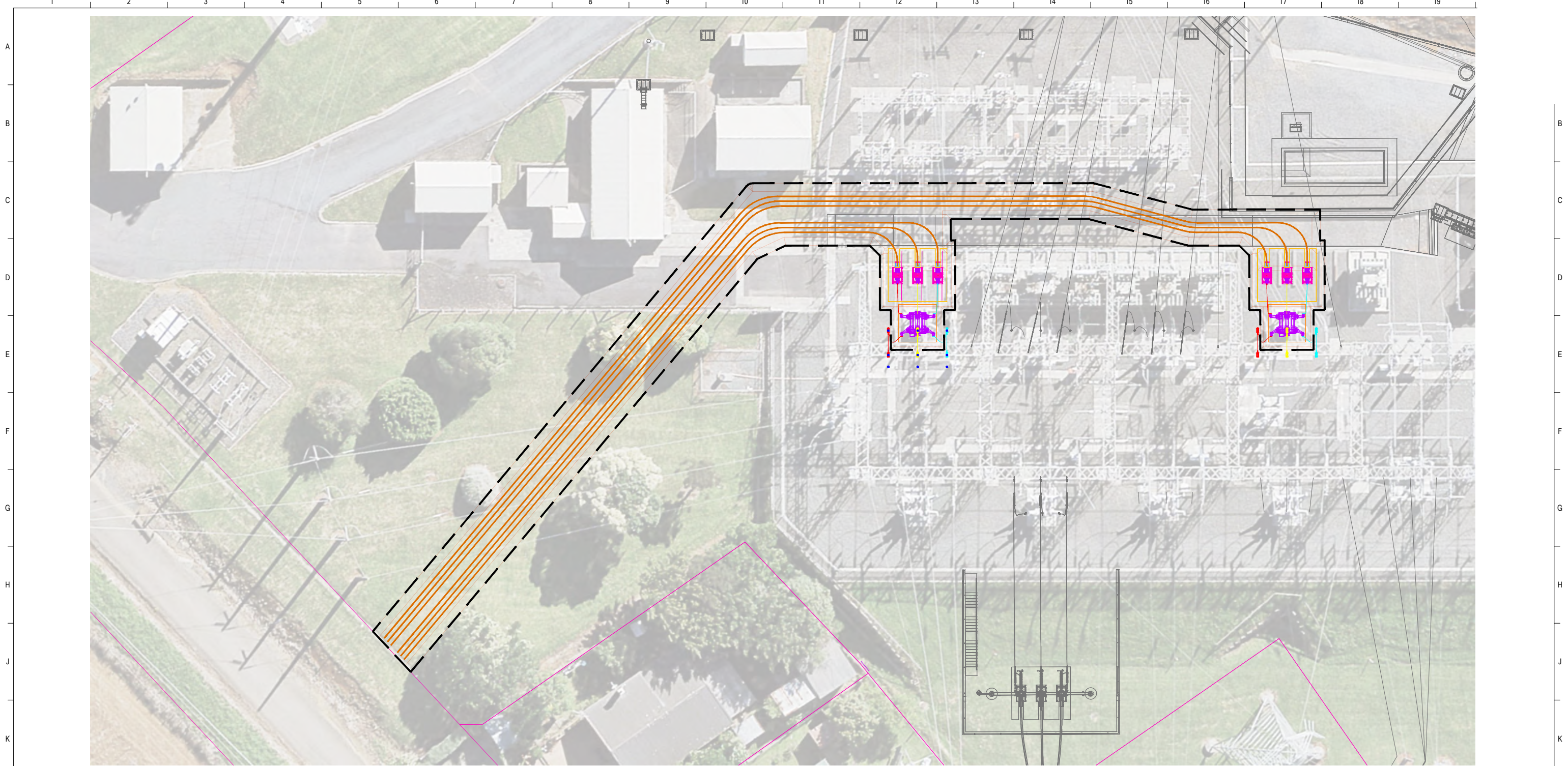
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-2	Added demarcation. Revised conductors.	AECOM	PS	5.25	PS	5.25	IG	5.25	GQ	5.25	-	-	-



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BOMBAY SUBSTATION	TRANSPOWER PROJECT CODE IP_BOB_00Q_0_00		FOLDER -	
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110 kV SWITCHYARD				
ISNZ 110 kV SUPPLY POINT, SOLUTION STUDY REPORT				
BAY ELEVATION & MAINTENANCE				

TRANSPOWER DRAWING TITLE BLOCK VERSION: E30.1



Earthworks
890m³
770m²

REV	REVISION DESCRIPTION	CONSULTANT										TP	
		CONSLT	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE	DATE
P	-1 First Issue	AECOM	PS	5.25	PS	5.25	IG	5.25	GQ	5.25	-	-	-



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BOMBAY SUBSTATION		TRANSPower PROJECT CODE IP_BOB_00Q_0_00		FOLDER -	
110 kV SWITCHYARD		DRAWING NUMBER TP_EARTHWORKS		SHEET 1	REVISION -1
ISNZ 110 kV SUPPLY POINT, SOLUTION STUDY REPORT		DRAWING CREATED BY: AECOM NZ Ltd (60739090) https://www.AECOM.com/nz		SCALE 1:200	
CIVIL EARTHWORKS					

Appendix E

Detailed Site Investigation Report



Detailed Site Investigation

Bombay Substation

Transpower New Zealand Limited

22 Boulcott Street, Wellington, 6011

Prepared by:

SLR Consulting New Zealand Limited

SLR Project No.: 810.031579.00001

19 June 2025

Revision: 1.0

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
1.0	19 June 2025	O. Mollentze	S. Ensoll	J. Blackwell

Basis of Report

This report has been prepared by SLR Consulting New Zealand Limited (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Transpower New Zealand Limited (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.



Executive Summary

Transpower New Zealand Limited (Transpower) has engaged SLR Consulting New Zealand Limited (SLR) to undertake a Detailed Site Investigation (DSI) to support the proposed installation of two 110kV connections at Bombay Substation (the Site), located at 153 Barber Road, Bombay, Auckland. (the 'Property').

This DSI included a review of the Site's history, soil sampling, and field observations. The key findings are:

- The earliest available aerial image of the Site is 1942, showing that the Property was already established as a substation, with the Site grassed on the western portion and occupied by substation infrastructure on the east.
- Soil sampling involved the collection of 16 soil samples from seven locations (SS01 – SS03, and SS05 – SS08) across the areas of proposed soil disturbance at the Site.
- All contaminant concentrations in soil samples analysed were reported below the adopted National Environmental Standards for Assessing and Managing Contaminants in Soil, 2011 (NESCS) Soil Contaminant Standards (SCS).
- Lead was reported above regional background concentrations in three samples (SS02_0.0, SS03_0.0 and SS03_0.5), and mercury was above background concentrations in one sample (SS07_0.5).
- One sample (SS02_0.0) reported a lead concentration above the Auckland Unitary Plan: Operative in Part (AUP: OP) environmental discharge criteria; however, subsequent toxicity characteristic leaching procedure (TCLP) extraction analysis confirmed low leachability and minimal environmental risk when compared against Class A Landfill Waste Acceptance Criteria. The surface sample collected from SS02 (0.5 m bgl) reported lead within regional background concentrations, indicating that the elevated lead is isolated to small distinct surface impact.
- Trace concentrations of polycyclic aromatic hydrocarbon (PAH) congeners were detected at one location (SS03), reported above laboratory limits of reporting but below the adopted human health and environmental discharge criteria.
- Asbestos and Polychlorinated biphenyls (PCBs) were not detected in any of the analysed samples.
- The analytical results of the soil sampling have demonstrated that it is highly unlikely that there will be a risk to human health or the environment associated with the proposed work, or ongoing use of the Site as an electrical substation.

Based on the findings of the DSI, the following conclusions are made:

- The Site is considered a 'piece of land' under Regulation 5(7) of the NESCS due to the presence of HAIL activities.
- The proposed works may be undertaken as a Permitted Activity, providing the requirements under Regulation 8(3) can be met including duration of earthworks, soil disturbance volumes not exceeding 3,440 m³, and soil disposal volumes not exceeding 688 m³.
- The Contaminated Land Rules of the AUP: OP are not considered applicable to the proposed works, as contaminant levels do not exceed the relevant permitted activity criteria set out in Table E30.6.1.4.1 of the AUP: OP.
- Soils beneath the Site are considered suitable for retention and reuse, and on-site retention of excess generated soils is strongly encouraged. Should off-site disposal be required, soils from select locations may meet the cleanfill criteria, pending



acceptance from the receiving facility, with the remaining soils unlikely to be considered cleanfill.



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Acronyms and Abbreviations

Acronym	Description
AUP: OP	Auckland Unitary Plan: Operative in Part
ACM	Asbestos-containing material
CLMG	Contaminated Land Management Guidelines
CoPC	Contaminants of Potential Concern
CSM	Conceptual Site Model
DSI	Detailed Site Investigation
GAMAS	New Zealand Guidelines for Assessing and Managing Asbestos in Soil
HAIL	Hazardous Activity and Industry List
LoR	Limits of Reporting
MfE	Ministry for the Environment
m asld	Metres above sea level datum
m bgl	Metres below ground level
mg/kg	Milligram / kilogram
NESCS	National Environmental Standards for Assessing and Managing Contaminants in Soil
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated biphenyls
PSI	Preliminary Site Investigation
SCS	Soil Contaminant Standards
SLR	SLR Consulting New Zealand Limited
SQEP	Suitably Qualified and Experienced Practitioner
Transpower	Transpower New Zealand Limited
QA/QC	Quality Assurance / Quality Control



1.0 Introduction

1.1 Background

Transpower New Zealand Limited (Transpower) has engaged SLR Consulting New Zealand Limited (SLR) to undertake a Detailed Site Investigation (DSI) to support the installation of two 110kV connections at Bombay Substation (the 'Works Area'), located at 153 Barber Road, Bombay, Auckland. (the 'Property'). The Site layout is presented in **Figure 1**.

Transpower propose to enable two 110 kV connections at Bombay Substation, to support the construction of a new 110/33 kV substation near Pukekohe. The proposed works include installation of two feeder bays (Bay 220 and 280) and a 110 kV cable to the Property boundary. The proposed development plan is presented in **Appendix A**.

The purpose of this DSI is to assess the potential risk to human health and/or the environment as part of the proposed activity, and to assess implications for the proposed soil disturbance under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESC) (MfE, 2011) and the Auckland Unitary Plan: Operative in Part (AUP: OP) Contaminated Land Discharge Rules.

Consideration of the NESC is required for the activities of soil disturbance on pieces of land that have been subject to any activities or industries listed on the Ministry for the Environment (MfE) Hazardous Activities and Industries List (HAIL). Land covered in the NESC is defined in regulation 5(7) as:

A piece of land that is described by one of the following:

- a) *An activity or industry described in the HAIL is being undertaken on it:*
- b) *An activity or industry described in the HAIL has been undertaken on it:*
- c) *It is more likely than not that an activity or industry described in the HAIL is being or has been undertaken on it.*

This DSI report has been prepared in general accordance with MfE Contaminated Land Management Guidelines No.1 Reporting on Contaminated Sites in New Zealand (2021) (CLMG No. 1).

1.2 Scope of Works

This scope of this investigation is limited to the Works Area, which is defined as the area of soil disturbance associated with the cable trench and installation of the two new 110kV connections.

The scope of this DSI has included the following:

- A review of selected, publicly available information for the Property to determine whether or not any activities or industries on the HAIL are, have been, or might have been undertaken on the Works Area.
- Site inspection to visually assess the presence of any activities or industries listed on the HAIL or evidence of potential contamination.
- Collection and analysis of selected soil samples collected from areas of proposed soil disturbance.
- An overall assessment of the applicability of the NESC and the Contaminated Land Discharge Rules of AUP: OP.



1.3 Report Status

This report has been undertaken under the supervision of, and approved by James Blackwell, a Certified Environmental Practitioner – Site Contamination (CEnvP – SC) and Suitably Qualified and Experienced Practitioner (SQEP) as outlined in *Contaminated Land Management Guidelines No. 1 – Reporting on Contaminated Sites in New Zealand (CLMG No. 1)* (MfE, 2021a), *Contaminated Land Management Guidelines No. 5 – Site Investigation and Analysis of Soils (CLMG No. 5)* (MfE, 2021b), and the Resource Management (NESCS) Regulations, 2011.

This report fulfils the requirements of a DSI as outlined in the CLMG No.1.





Legend

- Property Boundary
- Works Area Boundary

0 10 m 20 m

LINZ CC BY 4.0 © Imagery Basemap contributors



Produced by **Datanest.earth**

Title: Works Area and Property Location Plan

Client: Transpower NZ Ltd Size: A3

Project: Bombay Substation DSI	Drawn: OM	Figure No.: 1
Date: 17-06-2025	Checked: JB	

Proj No: 810.031579.00001	Scale: 1:1000	Version: 1.0
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2.0 Property Details

2.1 Property Identification

The Property is located in Bombay, Auckland. The location of the Works Area within the Property is shown in **Figure 1**. Specific details are provided in **Table 1**.

Table 1: Property Identification Details

Aspect	Details
Address	153 Barber Road, Bombay, Auckland
Legal Description	Lot 1 DP 162890 and Lot 3 DP 439460
Property Area	6.88 ha
Works Area	770 m ²

2.2 Land Use

2.2.1 Current and Proposed

Under the Auckland Council (AC) AUP: OP, the Property is zoned as *Rural Production Zone* and is designated under Schedule 8511 as 'electricity transmission'.

The Works Area and Property are operated by Transpower as an electrical substation. This land use will continue following the completion of the proposed development at the Site.

Figure 1 illustrates the proposed locations of the two new bays, the 33 kV Switchyard located north of the Site, the 110 kV switchyard located to south of the Site, and the 220 kV switchyard located north-east of the Site. The historic location of an Oil Containment tank is documented directly north of the proposed Bay 280.

It is estimated approximately 890 m³ of earthworks over an area of 770 m² will be required as part of the proposed connection works.

2.2.2 Surrounding Land Use

The land uses surrounding the Property are recorded in **Table 2**.

Table 2: Surrounding Land Use

Direction	Description
North	Zoned <i>Residential – Rural and Coastal Settlement Zone</i> (north-west) and <i>Rural Production Zone</i> . Residential properties located immediately north-west, with Barber Road Substation (Counties Energy Ltd) located directly north that is connected to the Property via overhead powerlines. The general surrounding area is pastoral land.
East	Zoned <i>Rural Production Zone</i> . Pastoral land with rural-residential dwellings.
South	Zoned <i>Rural Production Zone</i> . Rural residential dwellings situated within pastoral land, and Barber Road Local Purpose Reserve which is designated as Bombay Sewage Treatment Facility.
West	Zoned <i>Rural Production Zone</i> .



Direction	Description
	Barber Road, with pastoral land and rural-residential dwellings beyond.

2.3 Environmental Features

2.3.1 Topography

The Property slopes from the north-east towards the south-west, with an approximate elevation change of 284 metres above sea level datum (m asld) to 269 m asld. The Works Area is generally topographically flat, situated at approximately 272 m asld.

2.3.2 Geology

The Institute of Geological and Nuclear Sciences (GNS) 1:250,000 online geological map shows that the Property is underlain by Undifferentiated Kerikeri Volcanic Group basalt lava of South Auckland Volcanic Field, comprised of fine-grained and coarse-grained, porphyritic, olivine basalt, basanite and hawaiite lava flows.

Encountered Works Area-specific geology as encountered during soil sampling is detailed in **Appendix E**.

2.3.3 Hydrology

No surface water bodies were identified in the Property, however a stormwater swale is located east of the 220 kV switchyard that travels from the Barber Road Substation before discharging to ground approximately 97 m south-east of the Works Area.

The closest open water body is an unnamed watercourse, located approximately 258 m south-east of the Works Area and 23 m from the Property boundary. A stormwater swale is present along the eastern boundary of the Property.

2.3.4 Hydrogeology

AC has a record of three drilled bores present in surrounding area of the Property, as presented in the AC Contaminated Land Enquiry. Bore details are presented in **Table 3**.

Table 3: Details of Bores

Consent Ref.	Location to Site	Depth	Use
LUC60271340	72 Lowry Road, Bombay (200 m south-east of Property)	Unknown	The construction of one bore for stock and domestic purposes
LUC60128666	27 Razorback Road (20 m west and south of Property)	Unknown	Proposed new water bore for irrigation purposes
LUC60354433	60 Paparata Road, Bombay (directly north of Property)	Unknown	Application for water permit – Bore

A search of the New Zealand Geotechnical Database (NZGD) was conducted on 12 June 2025. A review of NZDG identified no bore records within the Works Area or Property. The closest bore record is located approximately 472 m north-east of the Property (ID – 78722), drilled and measured in 1965 for unknown purposes, with a final depth of 95.1 m bgl and water level recorded at 67.1 m bgl.

AC Geomaps indicates that groundwater underlying the Property consists of Bombay Volcanic (Franklin Volcanic) aquifer. This is listed as a High Use and a Quality-Sensitive



aquifer in the AUP: OP (Chapters D1 and D2 respectively). This indicates that groundwater underlying the Works Area is shallow and unconfined, thus is considered susceptible to pollution from surface sources, and requires water availability management due to being highly allocated. The depth to groundwater and flow direction underneath the Property is unknown.



3.0 Preliminary Site Investigation

A review of publicly available information for the Works Area was undertaken, to understand the development history of the Property and Works Area, particularly the nature and location of any potentially contaminating activities. This included a review of:

- Selected historical aerial photographs available through Retrolens®, AC Geomaps and Google® Earth™ Pro.
- AC Contaminated Land Enquiry.
- Review of any existing reports associated with the Works Area.
- Hazardous Substances and Incidents report provided by the Environmental Protection Agency (EPA).
- A site walkover.

3.1 Aerial Photographs

Historical aerial photographs were sourced from Retrolens®, AC Geomaps and Google Earth Pro. These are described in **Table 4** and can be found in **Appendix B**.

Table 4: Historical Aerial Photographs Summary

Year	Reference	Observations
1942	Retrolens (black and white)	Works Area: Bombay Substation has already been established, with the western portion of the Site consisting of open grassed land and the eastern portion located within the switchyard (<i>Feature 1</i>). Property: Several structures, potentially residential dwellings, are located along the north-west boundary (<i>Features 2 to 7</i>). Several structures, associated with the substation land use, are located to the west (<i>Features 8 to 10</i>), north-east (<i>Feature 11</i>) and south (<i>Feature 12</i>). Western portion of the Property consist of open grassed land. Surroundings: Bombay Road has already been established to the west. Two residential dwellings, with detached sheds or garaging, are present to the south-west. Remaining surroundings appear to be pastoral and open grassed land.
1963	Retrolens (black and white)	Works Area: A new circular structure (<i>Feature 13</i>) is present at the western corner of the Works Area. Property: Bombay Substation switchyard has been extended towards the east. One structure has been removed (<i>Feature 11</i>) and four new structures (associated with substation activities) are present across the Property (<i>Features 14 to 17</i>). Three small storage structures, specifically above-ground storage tanks (ASTs) are visible north of the Works Area (<i>Feature 18</i>). Surroundings: Three new residential dwellings have been constructed north-west of the Property.
1975	Retrolens (black and white)	Works Area: No significant changes to the Works Area observed. Property: Three structures have been removed, located in the north-east, east, and southern areas of the Property (<i>Features 2, 12 and 15</i>). Surroundings: Two rural-residential dwellings have been constructed north-west of the Property.
1988	Retrolens	Works Area: No significant changes to the Works Area observed.



Year	Reference	Observations
	(black and white)	Property: Additions have been made to an existing structure, located in the north-eastern corner of the Property (<i>Feature 16</i>), and two new structures have been constructed (<i>Features 19 and 20</i>). New transmission pylons (<i>Features 21 and 22</i>) are visible in the north-eastern portion of the Property. Surroundings: No significant changes to the surrounding area observed.
2003-2004	AC (colour) – low resolution	Works Area: No significant changes to the Works Area observed. Property: Several structures, previously observed along the northern boundary (<i>Features 2 to 6, and 17</i>), have been removed. Surroundings: No significant changes to the surrounding area observed.
2006	AC (colour)	Works Area: A new structure (<i>Feature 23</i>) is observed in the middle of the Works Area, where the grass and hardstanding areas intersect. Property: Significant soil disturbance and stockpiling (<i>Feature 24</i>) is observed immediately south-east of the switchyard. Surroundings: No significant changes to the surrounding area observed.
2010-2011	AC (colour)	Works Area: One structure have been removed from the western portion of the Works Area (<i>Features 13</i>). Property: One structure (<i>Feature 14</i>) has been removed. The substation infrastructure has been extended towards the east. A new structure is present in the northern side (<i>Feature 25</i>). Surroundings: No significant changes to the surrounding area observed.

3.2 Council Records

AC holds records of properties where certain HAIL activities that are considered likely to cause land contamination are known to be occurring, may have occurred, or have occurred in the past.

A Site Contamination Enquiry (SCE) was requested from AC and received on 6 June 2025 and is presented in **Appendix C**. The SCE provides information on records held by AC for landfills, bores, air discharge consents, industrial and trade process consents, contaminated site discharge consents, and environmental incidents for the Property and within a 200 m radius of the Property.

The report pertains to the Property and confirms that the Property and Works Area may have been subject to the following activities listed on the MfE HAIL:

- B4: Power stations, substations or switchyards.

Council records indicate the Property has been utilised as a substation since the 1960's. The report states that a DSI undertaken in 2020 identified one sample with copper concentrations exceeding AUP(OP) permitted activity discharge criteria.

The SCE also states that due to the age of the structures on the Property, the potential for asbestos and/or lead paint may need to be considered within the Works Area.

Incidents

One incident has been recorded for the surrounding area, as follows:

- 2012 – 70 Paparata Road (180 m north) - Dirt / Inert Minerals / Sediment, Discharge to Water to cause Potential Water / Land Pollution.



It has been assessed that the recorded incident is highly unlikely to have impacted soils within the Works Area due to the age, distance, elevation and nature of incident that occurred.

Consents

Two issued consents have been recorded for the Property, specifically:

- Industrial or Trade Activity discharge consent - issued 2021: *Discharge of contaminants for an Industrial and Trade Activity (ITA) associated with a new electrical sub-station.*
- Contaminated Site discharge consent - issued 2020: *Disturbance of contaminated soil associated with the undertaking of bulk earthworks of 5,300m³ over and area of 13,500m² for the installation of infrastructure, including the disturbance of land.*

Seven issued consents were recorded for the surrounding area, as follows:

- Wastewater discharge consent - issued 2014: 27 Razorback Road, Bombay (20 m west and south of the Property). *Regional resource consent for the discharge of up to 5.4 m³/d of treated wastewater at Bombay Wastewater Treatment Plant.*
- Two water take consents - both issued 2021: 27 Razorback Road (20 m west and south of the Property).
 - o *Take/use up to 1,330 m³/day & 57,000 m³/year Bombay Volcanic aquifer groundwater for irrigation of market garden on 27 Razorback Rd (WAT60352635 (bore 30284) and WAT60352937 (bore 30263).*
 - o *Take/use up to 420 m³/day & 18,000 m³/year Bombay Volcanic aquifer groundwater for irrigation of market garden on 27 Razorback Rd (WAT60352635 (bore 30284) and WAT60352937 (bore 30263).*
- Domestic sewage consent - issued 2014. *To discharge up to 5,400 litres per day of treated domestic wastewater from six 3-bedroom dwellings and an electricity substation to ground disposal.*
- Land use consent – issued 2013: 72 Lowry Road, Bombay (200 m south-east of Property). *The construction of one bore for stock and domestic purposes.*
- Land use consent – issued 2017: 27 Razorback Road (20 m west and south of the Property). *Proposed new water bore for irrigation purposes.*
- Land use consent – issued 2020: 60 Paparata Road, Bombay (directly north of the Property). *Application for water permit - Bore.*

3.3 Hazardous Substances and Incidents Report

The Environmental Protection Agency (EPA) maintained a list of reported hazardous substance incidents over the period July 2006 – December 2011. A review of the EPA register over this period, accessed June 2025, identified no EPA recorded incidents that have occurred within one kilometre (km) of the Property.

3.4 Previous Reports

3.4.1 Asbestos Management Survey, 4Sight Consulting Ltd (2017)

In August and September 2017, an asbestos management survey was conducted to identify and manage asbestos risks at the Property. Asbestos was identified on the external cladding



materials, loose debris surrounding structures, and within outdoor junction boxes (ODJBs) within the switchyard. Removal of identified asbestos material was recommended, and soils were not assessed as part of this investigation.

3.4.2 RTU Replacement Pre-Works Assessment and Asbestos Monitoring & Clearance, 4Sight Consulting Ltd (2020)

In June 2020, a pre-works asbestos assessment was completed for the RTU replacement following the detection of asbestos in composite swab samples from internal and external locations. No bulk or visual asbestos containing material (ACM) was identified in the control room trenches or external cable trenches, and the asbestos detections were classified as “Minor”.

In October 2020, third-party asbestos monitoring and clearance was conducted by 4Sight following ACM removal to support RTU replacement. Clearance swab samples confirmed no asbestos following removal works.

3.4.3 ICT Project Pre-Works Assessment, 4Sight Consulting Ltd (2021)

In October 2021, a pre-works asbestos and soil assessment was completed for the ICT Project, located in the immediate surrounding areas to the north, east and south of the Site, as follows:

- Thirteen swab samples were collected from equipment and cable trenches. Chrysotile was detected in one trench sample (4S_ICT_13); all others were clear.
- Soil sampling (21 samples from 11 locations) identified heavy metals above background, polycyclic aromatic hydrocarbons (PAH) in two samples above laboratory limits of reporting (LoR), and low-level chrysotile in one sample (4S_BOB_02_100). Contaminant concentrations were reported below human health guideline levels.

The asbestos pipe was removed under Class B controls, with soils within 150 mm considered asbestos-contaminated. Soils were assessed as suitable for re-use on-site, and isolated areas would require off-site disposal as managed fill.

3.4.4 Soil Assessment, 4Sight Consulting Ltd (2022)

In February 2022, soil sampling was undertaken to support trenching works in the 220kV switchyard, located adjacent to the north-east of the Site, as follows:

- Eight samples (SS01 to SS08) were analysed for heavy metals, PAHs, and asbestos.
- Contaminants in shallow soils were considered unlikely to pose human health risks for the proposed works.
- Soils were deemed suitable for on-site reuse. Isolated areas would require off-site disposal as managed fill due to heavy metal and PAH concentrations reported above background criteria.

3.5 Site Walkover

A Site visit was undertaken by SLR staff on 28 May 2025. Photos of the Site visit are presented in **Appendix D**. The walkover was limited to the Works Area and did not incorporate the Property. The following observations were made during the walkover:

- The Works Area is occupied by grassed area (western portion) and approximately 0.1 m layer of GAP60 fill within substation infrastructure (eastern portion).



- The Works Area slopes from the grassed area upwards to the substation infrastructure (east to west).
- During the sub-surface clearance conducted during the Site inspection, buried services and utilities were identified within the Works Area.
- SS04 could not be safely advanced due to proximity to underground services. No alternative location that would meet the goals of the sampling location was identified.

3.6 The Works Area and Property History Summary

Based on a review of publicly available information in relation to the history of the Works Area and the Property, and the Site walkover, the following can be summarised:

- The earliest available aerial image of the Property was from 1942 and identified that the Works Area was grassed on the western portion and occupied by substation infrastructure on the eastern portion. The western portion of the Works Area remained grassed land until two structures were present in 1963 and 2006, with both removed by 2010. The eastern portion of the Works Area has been occupied by substation infrastructure since circa 1942.
- The Property was developed into an electrical substation prior to 1942. It was expanded further south and south-east in 1963, 2010 and 2022, and has historically included an oil containment tank directly north of the proposed Bay 280.
- The surrounding land use has consisted of pastoral land since as early as 1942 with a few residential dwellings toward the eastern side of the Property. The Barber Road Substation (Counties Energy Ltd) was developed north of the Property in 2022.
- The Property and Works Area continue to operate as an electrical substation. Based on this background information review, the following Hazardous Activities and Industries List (HAIL) activities have or potentially have occurred at the Works Area:
 - o *B4: Electrical and electronic works, power generation and transmission - Power stations, substations or switchyards.* Associated with the use and storage of cleaning and anti-corrosion solutions along with general operations of the Substation.
 - o *E1: Mineral extraction, refining and reprocessing, storage and use - Asbestos products manufacture or disposal, including sites with buildings containing asbestos products known to be in a deteriorated condition.* Associated with potential ACM from within the current and former Substation equipment.
- The contaminants of potential concern (CoPC) associated with potential HAIL activities that have the potential to have occurred at the Site include:
 - o Asbestos semi-quantitative method (ACM SQ).
 - o Polychlorinated Biphenyls (PCB).
 - o Heavy metals (arsenic, cadmium, copper, lead, mercury, nickel and zinc) (HM).
 - o Polycyclic Aromatic Hydrocarbons (PAH).



4.0 Initial Conceptual Site Model

An initial conceptual site model (CSM) has been prepared and is presented below in **Table 5**. A CSM provides a detailed description of the identified potential sources, pathways and receptors, and a qualitative assessment of complete or potentially complete source-pathway-receptor (SPR) linkages. A risk is only present if there is a complete SPR linkage. The CSM detailed in **Table 5** is based on the results of the background review only and is intended to guide and inform the soil sampling and analysis.

Table 5: Tabulated Initial Conceptual Site Model

Activity Identified	Potential HAIL Reference	Location on Site	Potential Contaminants	Pathway	Receptor	Discussion and SPR Linkage
Operation and maintenance of Substation	B4: Power stations, substations or switchyards	Substation and immediate surrounds	- Heavy Metals - PCBs - PAHs - Asbestos	Direct contact, inhalation and/or ingestion	Site users and maintenance / excavation workers	Potentially Complete Determination of whether the SPR linkage is complete requires soil sampling and analysis to assess the concentrations of contaminants in soil, and a risk assessment to determine the potential risk to human health and the environment.
				Leaching to groundwater or river	Environmental	
Potential ACM from within the current and former Substation equipment	E1: Asbestos products manufacture or disposal, including sites with buildings containing asbestos products known to be in a deteriorated condition	Substation and location of historic structures	Asbestos	Inhalation	Site users and maintenance / excavation workers	



5.0 Detailed Site Investigation

On 28 May 2025, a total of 16 primary soil samples were collected from seven sampling locations (SS01 to SS03, and SS05 to SS08).

Samples were not collected from location SS04 due to proximity to underground services.

Soil sampling locations were advanced using hand excavation methods to depths ranging from 0.5 m to 1.0 m bgl. Soil sampling locations were positioned to provide coverage of soils within the Works Area associated with the proposed soil disturbance and assess CoPC associated with the operation and maintenance of the substation.

Sample locations are presented in **Figure 2**. Site photographs are presented in **Appendix D**. Soil sample information, and the analytical schedule, is presented in **Appendix E**.

Soil sampling was undertaken in general accordance with the Contaminated Land Management Guidelines No.5 Site Investigation and Analysis of Soils (MfE, 1999, revised 2021). The methodology for the soil sampling is set out below.

5.1 Sampling Methodology

The following methodology was adopted during the soil sampling works:

- A stainless-steel spade and hand auger were used to collect soil samples from seven locations: SS01 to SS03 and SS05 to SS08.
- At locations SS05 to SS08, located within the switchyard, fill materials comprising approximately 0.1 m of GAP60 and/or gravels were removed using a shovel. Soil samples were collected from the material immediately below the gravel fill layer, at the following depths:
 - o 0.0 - Immediately below fill layer (shallow).
 - o 0.3 - 0.5 m below fill layer (sub-surface).
 - o 0.9 - 1.0 m below fill layer (depth).
- All soil samples were subject to a screening for visual and olfactory evidence of contaminant impact.
- A clean pair of nitrile gloves were worn to place the soil sample within the sample jars to limit the potential for cross-contamination.
- Soil samples were collected directly from the auger and placed in laboratory provided clean sample jars and identified with a unique sample identifier, which was documented on the sample label, and chain of custody form.
- All soil samples were placed in an ice-cooled storage box (i.e. Chilly Bin) immediately after collection and transported under chain of custody documentation to the analytical laboratory.
- All field sampling equipment was decontaminated prior to use at each soil sample location to limit the potential for cross-contamination. Decontamination of field equipment involved: wash with clean potable water; scrubbing in a detergent solution (Decon® 90) and potable water; and a final rinse in clean water.
- The soil samples were transported under full Chain of Custody documentation to Hill Laboratories (Hill Labs), Hamilton. The soils were analysed as per the analytical schedule in **Appendix E**.



5.2 Laboratory Analysis

All primary soil samples were submitted to an International Accreditation New Zealand (IANZ) accredited laboratory (Hill Labs, Hamilton) with accredited methodologies for analysis for the presence of identified and potential CoPC as detailed in **Appendix F**.

5.3 Sampling Observations

Photos of the Works Area and typical soil profile are presented in **Appendix D**. The following soil characteristics and observations are described below:

- Within the western portion of the Works Area , soils were overlaid by grass cover.
- Within the eastern portion of the Works Area , soils were covered by approximately 0.1m substation ballast (GAP60) consisting of fine to coarse angular gravels.
- Sub-surface soils generally consisted of light to dark brown sandy silt, and light to dark brown silty sand with some gravel.
- No visual or olfactory evidence of contamination were present.

5.4 QA/QC

Standard field quality assurance protocols were followed. All tools used for sampling were decontaminated and washed between samples to remove the risk of cross contamination. Nitrile gloves were also used and disposed of between each sample. Samples were analysed by Hill Laboratories, a New Zealand accredited laboratory (by International Accreditation NZ). Their primary quality standard is NZS/ISO/IEC 17025:2005 which incorporates the aspects of ISO 9000 relevant to testing laboratories.

Refer to the laboratory analysis report in **Appendix F** for further information on accreditation.

5.4.1 QA/QC Sample Results

A relative percentage difference (RPD) was calculated for each duplicate pair to obtain a quantitative measure of the accuracy of the results obtained. A RPD range of 30% - 50% is generally considered acceptable (based on the requirements of MfE CLMG No.5). Validation and interpretation of the QA/QC data was undertaken by calculating the RPD for each duplicate pair.

The RPD values were calculated using the formula:

$$\text{RPD}\% = \frac{(X_1 - X_2)}{M} \times 100$$

Where:

X_1 = primary sample result

X_2 = duplicate sample result

M = mean result of parent and duplicate

As part of the soil sampling works, one QA/QC duplicate sample was collected and scheduled for the same suite as the primary sample.

The RPD calculations presented in **Table 6** illustrate that the variance between the primary and duplicate samples was calculated as generally less than 12%. Demonstrating reasonable sample homogeneity and repeatability of results such that the laboratory analytical results can be relied upon for the purposes of this DSI.



Table 6: QAQC Relative Percentage Difference Calculations

Analyte	SS01_0.0 (Primary)	QAQC (Duplicate)	RPD Calculations (%)
Arsenic	8	9	11.76
Cadmium	0.11	0.1	9.52
Chromium (III+VI)	26	27	3.77
Copper	37	37	0.0
Lead	48	46	4.26
Mercury	0.21	0.21	0.0
Nickel	12	12	0.0
Zinc	92	100	8.33
Note: All values in mg/kg.			

5.5 Evaluation Criteria

The soil sample results have been screened against the following criteria:

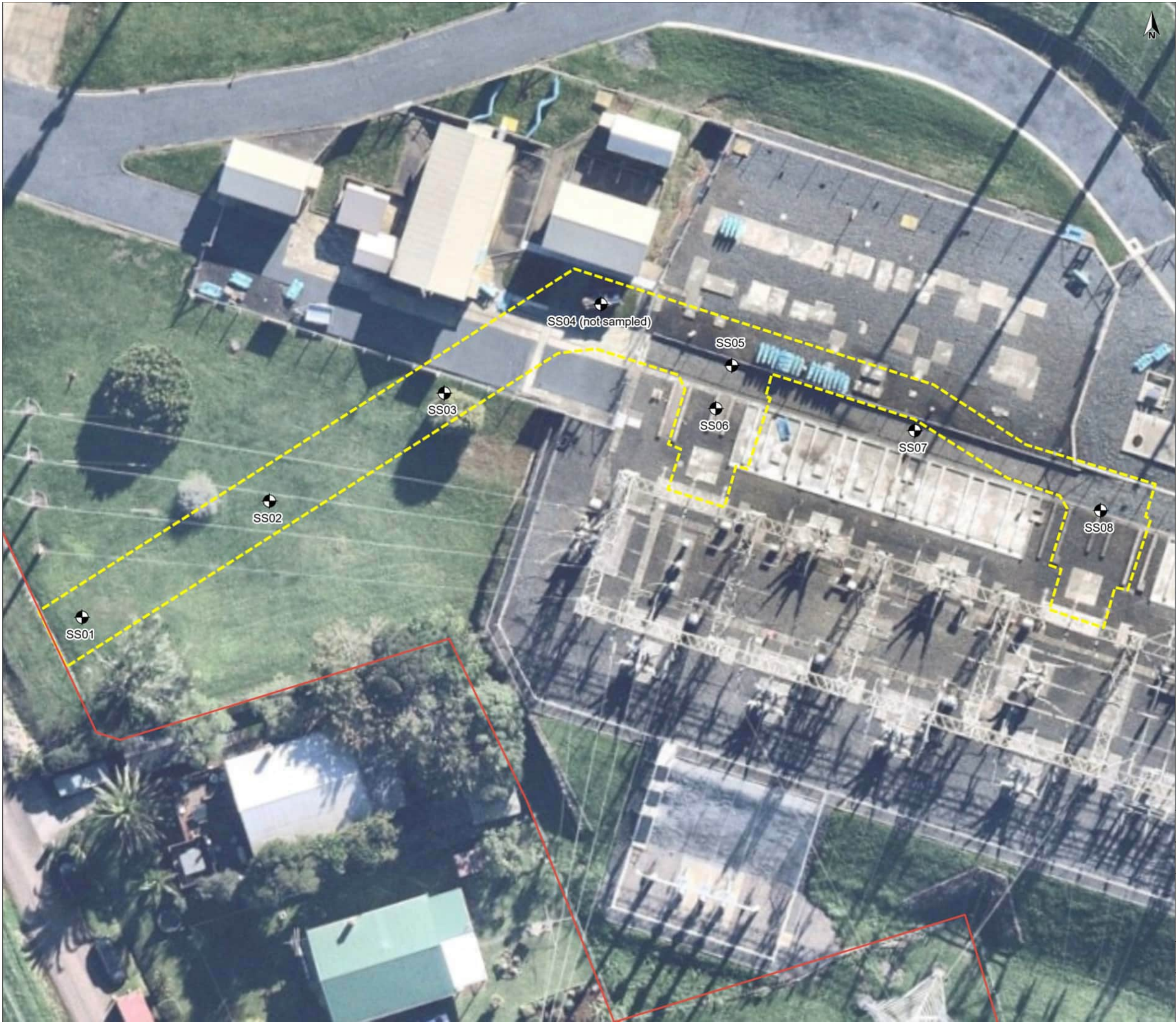
Human Health Guidelines

- NESCS Soil Contaminant Standards (SCS) using the 'commercial / industrial' land use scenario. This is consistent with the ongoing land use.
 - o In the absence of New Zealand specific human health risk assessment criteria for concentrations of nickel and zinc in soil, the Australian National Environment Protection Council National Environment Protection (Assessment of Site Contamination) Measure 1999, Amendment No.1 (2013) - Health Investigation Levels using 'Commercial / Industrial' exposure scenario guidelines have been adopted in accordance with the hierarchy for selecting Soil Guidelines Values (SGVs) as detailed in MfE CLMG No.2 Hierarchy and Application in New Zealand of Environmental Guideline Values, 2011.
- New Zealand Guidelines for Assessing and Managing Asbestos in Soil (GAMAS) 2024, using the commercial / industrial land use scenario for ACM and the 'all' land use scenario for asbestos fines and fibrous asbestos.
- MfE 1999, Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand (Oil Industry Guidelines), using the Commercial / Industrial land use all exposure pathways contamination depth <1 m bgl sand scenario.

Background and Environmental Discharge

- Background levels for heavy metals (volcanic range) as presented in Auckland Regional Council's TP153 (Background Concentrations of Inorganic Elements in Soils from the Auckland Region, 2001), used as a guideline for typical concentrations in volcanic soils and to assist in determining appropriate disposal locations should soil be removed from the Site.
- AUP: OP Table E30.6.1.4.1, Permitted Activity Soil Acceptance Criteria.
- MfE, 2004. Hazardous Waste Guidelines - Landfill Waste Acceptance Criteria and Landfill Classification. *Appendix A - Total concentration and leachability limits for Class A landfills.*





- Legend**
- Sample Locations
 - Property Boundary
 - Works Area Boundary

0 5 m 10 m
LINZ CC BY 4.0 © Imagery Basemap contributors



Produced by **Datanest.earth**

Title: Sample Location Plan		
Client: Transpower NZ Ltd		Size: A3
Project: Bombay Substation DSI	Drawn: OM	Figure No.: 2
Date: 17-06-2025	Checked: JB	
Proj No: 810.031579.00001	Scale: 1:350	Version: 1.0

6.0 Results

A summary of the laboratory results is presented in **Table 7**. The full results are contained in the laboratory analysis reports provided in **Appendix F**. The following is noted regarding the soil sample laboratory analytical results obtained as part of this DSI.

Heavy Metals

- Concentrations of all heavy metals analysed were below the respective NESCS SCS for commercial / industrial land use.
- CoPC above published regional background concentrations included:
 - o Lead (65 mg/kg) in three samples, ranging from 114 mg/kg (SS03_0.0) to 550 mg/kg (SS02_0.0)
 - o Mercury (0.45 mg/kg) in one sample (0.56 mg/kg - SS07_0.5).
- Lead concentrations exceeded the AUP: OP permitted activity soil acceptance criteria (250 mg/kg) in one sample (SS02_0.0 – 550 mg/kg). Toxicity Characteristic Leaching Procedure (TCLP) analysis was subsequently conducted on the sample, with the lead concentration (1.36 mg/L) reported below the Class A Landfill Acceptance Criteria (5 mg/L).

Asbestos

- Asbestos was not detected in any of the samples analysed.

Polycyclic Aromatic Hydrocarbons (PAH)

- Concentrations of several PAH congeners were reported above laboratory LOR in SS03_0.0 and SS03_0.5, at concentrations below the respective human health criteria but above published regional background concentrations.
- All other analysed samples reported concentrations of PAH below the laboratory LOR, and thus below adopted human health assessment criteria and within published regional background concentrations.

Polychlorinated Biphenyls (PCB)

- Concentrations of PCB congeners were below the laboratory limit of reporting (LOR) in the two analysed samples.

7.0 Disposal

Soils are suitable to be retained and re-used within the Works Area, as well as within the Property.

Should off-site disposal be required, soils from select locations may meet the cleanfill criteria, pending acceptance from the receiving facility, with the remaining soils (from locations SS02 and SS03) are unlikely to be considered cleanfill, and will likely require disposal (if required) as Managed Fill, subject to receiving facility acceptance.



Table 7:
Laboratory Analytical Results

Summary of Results																		Guideline Criteria					
Sample Name		SS01		SS02		SS03		SS05		SS06			SS07		SS08			NESCS SCS - Commercial / Industrial ¹	Permitted Activity Discharge Criteria ²	MfE Petroleum Guidelines ³	Background Criteria (Volcanic Soils) ⁴	NZ GAMAS Asbestos Criteria - Commercial ⁵	Class A Landfill Acceptance Criteria - Concentrate in Leachate ⁶
Approximate Sample Depth (metres below fill level)		0.0	0.5	0.0	0.5	0.0	0.5	0.0	0.5	0.0	0.5	1.0	0.0	0.5	0.0	0.5	1.0						
Soil Type		Sandy SILT	Sandy SILT	Sandy SILT	Sandy SILT	Sandy SILT	Sandy SILT	Silty SAND	Silty SAND	Silty SAND	Silty SAND	Sandy SILT	Silty SAND	Silty SAND	Silty SAND	Silty SAND	Silty SAND						
Sample Date		28-May-25																					
Lab Number		3901976_1	3901976_2	3901976_4	3901976_5	3901976_6	3901976_7	3901976_9	3901976_10	3901976_11	3901976_12	3901976_13	3901976_14	3901976_15	3901976_16	3901976_17	3901976_18						
Presence / Absence	Asbestos (% w/w)	Asbestos NOT detected.	-	Asbestos NOT detected.	-	Asbestos NOT detected.	-	Asbestos NOT detected.	-	Asbestos NOT detected.	-	-	Asbestos NOT detected.	-	Asbestos NOT detected.	-	-	-	-	-	Presence / Absence	-	
Form		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Combined FA + AF		<0.001	-	<0.001	-	<0.001	-	<0.001	-	<0.001	-	-	-	<0.001	-	<0.001	-	-	-	-	0.001	-	
ACM (bonded)		<0.001	-	<0.001	-	<0.001	-	<0.001	-	<0.001	-	-	-	<0.001	-	<0.001	-	-	-	-	0.05	-	
Arsenic	Heavy Metals (mg/kg)	8	8	8	7	9	8	9	11	4	3	6	8	11	10	12	9	70	100	-	12	-	-
Cadmium		0.11	< 0.1	0.15	< 0.1	0.23	0.18	< 0.1	< 0.1	0.19	0.18	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1,300	7.5	-	0.65	-	-
Chromium		26	27	27	29	29	27	20	20	56	39	45	20	20	25	20	20	6,300	400	-	125	-	-
Copper		37	35	62	34	63	81	21	21	36	25	34	22	23	22	19	23	10,000	325	-	90	-	-
Lead		48	40	550	46	114	116	33	15.7	13	17.5	31	14.2	16.6	13.9	10.7	13.3	3,300	250	-	65	-	-
Mercury		0.21	0.26	0.29	0.25	0.2	0.22	0.25	0.27	< 0.1	< 0.1	0.2	0.28	0.56	0.31	0.22	0.31	4,200	1	-	0.45	-	-
Nickel		12	11	11	10	16	16	15	15	59	23	17	15	16	17	14	16	6,000 ²	105	-	320	-	-
Zinc		92	55	85	39	146	116	77	77	210	200	82	84	82	83	65	73	400,000 ²	400	-	1,160	-	-
TCLP - Lead	g/m3	-	-	1.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	
Total of Reported PAHs in Soil	Polycyclic Aromatic Hydrocarbons Screening in Soil (mg/kg)	-	-	-	-	< 0.4	< 0.4	< 0.3	-	< 0.3	< 0.3	-	< 0.3	-	< 0.3	< 0.3	-	-	-	-	BDL	-	-
1-Methylnaphthalene		-	-	-	-	< 0.016	< 0.015	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
2-Methylnaphthalene		-	-	-	-	< 0.03	< 0.015	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Acenaphthylene		-	-	-	-	< 0.016	< 0.015	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Acenaphthene		-	-	-	-	< 0.016	< 0.015	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Anthracene		-	-	-	-	< 0.016	< 0.015	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Benzo[a]anthracene		-	-	-	-	< 0.016	0.022	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Benzo[a]pyrene (BAP)		-	-	-	-	0.02	0.032	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Benzo[a]pyrene Potency Equivalency Factor (PEF) NES		-	-	-	-	< 0.038	0.044	< 0.026	-	< 0.026	< 0.028	-	< 0.025	-	< 0.025	< 0.026	-	35	-	(11) ^d	BDL	-	-
Benzo[a]pyrene Toxic Equivalence (TEF)		-	-	-	-	< 0.038	0.043	< 0.026	-	< 0.026	< 0.028	-	< 0.025	-	< 0.025	< 0.026	-	-	-	-	BDL	-	-
Benzo[b]fluoranthene + Benzo[j]fluoranthene		-	-	-	-	0.028	0.042	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Benzo[e]pyrene		-	-	-	-	0.016	0.025	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Benzo[g,h,i]perylene		-	-	-	-	0.02	0.033	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Benzo[k]fluoranthene		-	-	-	-	< 0.016	0.019	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Chrysene		-	-	-	-	< 0.016	0.026	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Dibenzo[a,h]anthracene		-	-	-	-	< 0.016	< 0.015	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Fluoranthene		-	-	-	-	0.021	0.05	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Fluorene		-	-	-	-	< 0.016	< 0.015	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Indeno[1,2,3-c,d]pyrene		-	-	-	-	0.02	0.03	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Naphthalene		-	-	-	-	< 0.08	< 0.08	< 0.06	-	< 0.06	< 0.06	-	< 0.06	-	< 0.06	< 0.06	-	-	-	(190) ^e	BDL	-	-
Perylene		-	-	-	-	< 0.016	< 0.015	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Phenanthrene		-	-	-	-	< 0.016	0.028	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	-	BDL	-	-
Pyrene		-	-	-	-	0.021	0.044	< 0.011	-	< 0.011	< 0.012	-	< 0.011	-	< 0.011	< 0.011	-	-	-	NA	BDL	-	-
Total PCB (Sum of 35 congeners)	Polychlorinated Biphenyls Screening in Soil (mg/kg)	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.35	< 0.35	-	-	-	-	BDL	-	-

Notes:

All results and criteria are expressed in mg/kg dry weight.
Any results exceeding adopted criteria are shaded accordingly.

1: National Environmental Standards for Managing and Assessing Contaminants in Soil to Protect Human Health' - Soil Contaminant Standards (SCS), (MfE, 2012) for Commercial / industrial outdoor worker.
2: Auckland Unitary Plan - Operative in Part (AUP: OP) Table E30.6.1.4.1, Permitted Activity (PA) Soil Acceptance Criteria: Discharge'.
3: Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand (MfE Petroleum Guidelines) (MfE, 1999). Values are taken from Table 4.11 Sand (<1 m below ground level) - commercial/industrial use all pathways. Limiting pathway for each criterion v = volatilisations, d - dermal. Brackets denote values exceed threshold likely to correspond to formation of residual separate phase hydrocarbons.
4: Background Concentrations of Inorganic Elements in Soils from the Auckland Region (volcanic soils) Technical Publication No. 153, (Auckland Regional Council, 2001).
5: Asbestos in Soil A Guide for Work Places (BRANZ, 2024) Criteria for Human Health, Industrial
6: MfE, 2004. Hazardous Waste Guidelines - Landfill Waste Acceptance Criteria and Landfill Classification. Appendix A - Total concentration and leachability limits for Class A landfills.

8.0 Discussion

8.1 Results

8.1.1 Human Health

Concentrations of all identified CoPC are below the respective adopted assessment criteria for the protection of human health. The soils are considered highly unlikely to pose a risk to human health during the development works and are suitable to remain within the Works Area as part of the ongoing use of the Property as an electrical substation.

8.1.2 Environmental

Concentrations of heavy metals (lead and mercury) were reported above the published regional background concentrations in four soil samples, with all remaining samples analysed reporting concentrations within the respective published background concentrations. Additionally, lead was reported above the AUP: OP Permitted Activity discharge criteria in one sample (SS02_0.0), located within the western grassed portion of the Works Area.

TCLP extraction analysis was conducted on the elevated lead concentration, with a result that confirmed low leachability and minimal environmental risk when compared to Class A Landfill Waste Acceptance Criteria. Furthermore, the subsurface soil sample collected from SS02 reported lead concentrations within regional background criteria, which suggests the elevated lead concentration is isolated to a surface impact only and no vertical contaminant mobilisation is likely.

It is noted that the sub-surface environment, particularly on substation sites, can be variable and influenced by previous earthworks and filling activities, rather than specific HAIL activities. The results from this DSI are consistent with the findings from previous environmental investigations conducted within the Property, and the quality assurance samples confirm sample homogeneity within the Works Area.

Concentrations of asbestos and PCBs were reported below the laboratory LOR for all samples analysed. Low-level concentrations of PAH congeners were reported at SS03; however, all PAH concentrations were below human health guidelines, and key compounds (naphthalene and benzo(a)pyrene) were below applicable human health criteria. This indicates that the PAH impact is low-level and restricted to one location, thus is not considered to pose a significant risk to the environment nor indicative of a wider contamination source.

As such, it is considered highly unlikely that soils at the Works Area present a risk to the environment, and the elevated lead concentration is not considered representative of soils within the Works Area.

8.2 National Environmental Standard for Assessing and Managing Contaminants in Soil

Based on the results of the DSI, the following conclusions have been made regarding HAIL activities undertaken at the Site:

- **HAIL E1:** Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition was considered as part of this assessment.



- o Asbestos was not detected in any of the soil samples collected at the Works Area and no observations of deteriorated asbestos were noted on-site. As such, it is considered highly unlikely that HAIL E1 has been undertaken on-site.
- **HAIL B4:** *Electrical and electronic works, power generation and transmission - Power stations, substations or switchyards*, associated with the operation of the substation at the Site since the mid-1950s.
 - o Soil sampling has identified that concentrations of all identified CoPC are below the applicable evaluation criteria for commercial / industrial land use.

Concentrations of select heavy metals (lead and mercury) are elevated above adopted regional background concentrations in four out of 16 sample locations and select PAH congeners were detected above laboratory LOR in two samples collected from the one location (SS03). The low-level presence of these contaminants is consistent with the use of the Works Area for substation activities.

As HAIL B4 has been undertaken at the Works Area and Property, the Works Area is considered to be a “piece of land” under Regulation 5(7) of the NESCS.

The proposed development may occur as a Permitted Activity subject to the conditions required under Regulation 8(3) being met, including:

- The soil disturbance volume does not exceed 3,400 m³ and the soil disposal volume does not exceed 688 m³, based on the Property area of 6.88 ha and understanding of earthworks completed in the previous or forthcoming 12 months.
- The duration of the activity does not extend beyond 2 months, and soils must be reinstated to an erosion-free state within 1 month of the activity.

8.3 Auckland Unitary Plan: Operative in Part

The Contaminated Land Rules of the AUP: OP are not considered applicable to the proposed development works as the concentrations of contaminants meet the permitted activity criteria set out in the AUP: OP (Table E30.6.1.4.1).



9.0 Revised Conceptual Site Model

An updated CSM is presented in **Table 8**, assessing the potential sources, pathways and receptors, and a qualitative assessment of complete or potentially complete source-pathway-receptor (SPR) linkages following a review of the soil sampling data. A risk is only present if there is a complete SPR linkage. The CSM detailed in **Table 8** is not intended to be an exhaustive assessment of all potential SPR linkages.

The CSM has been developed based on available information, any omissions are not indicative of no risk.

Table 8: Tabulated Initial Conceptual Site Model

Source	Pathway	Receptor	Human Health and Environmental	SPR Linkage and Discussion
Heavy metals in soils	Direct contact, inhalation and/or ingestion	Site users and maintenance/ excavation workers	Human Health	Incomplete Concentrations of all analysed heavy metals are below the adopted NESCS SCS for commercial/industrial land use.
	Leaching to groundwater and/or river	Groundwater / River	Environmental	Highly Unlikely TCLP was conducted on the one sample (SS02_0.0) which reported heavy metal concentrations (lead) above environmental discharge criteria, with a result that confirmed low leachability and minimal environmental risk when compared against Class A Landfill Waste Acceptance Criteria. Furthermore, the subsurface sample reported a lead concentration within regional background concentrations. Heavy metals typically bind to soil and thus are considered generally immobile in shallow soils. The potential for off-site discharge is considered highly unlikely given the concentrations detected, that sediment and erosion controls will be employed during earthwork activities, and the closest open surface water body is an unnamed watercourse located approximately 258 m south-east of the Property.
PCBs in Soil	Direct contact, inhalation and/or ingestion	Site users and maintenance/ excavation workers	Human Health	Incomplete Concentrations of all PCBs analysed were below the laboratory LOR, and thus also below the adopted human health and environmental discharge criteria for commercial / industrial land use scenario.
	Leaching to groundwater and/or river	Groundwater / River	Environmental	
PAHs in Soil	Direct contact, inhalation and/or ingestion	Site users and maintenance/ excavation workers	Human Health	Incomplete Low-level concentrations of PAHs were reported at one location (SS03), specifically above laboratory LOR but below the adopted human health criteria for commercial / industrial use. All other analysed samples did not detect PAH congeners above laboratory LOR. Therefore, it is considered highly unlikely that PAH congeners present a risk to human health or the environment.
	Leaching to groundwater and/or river	Groundwater / River	Environmental	
Asbestos in soils	Direct contact, inhalation and/or ingestion	Site users and maintenance/ excavation workers	Human Health	Incomplete Asbestos was not detected in all soil samples analysed, and thus also below the adopted human health and environmental discharge criteria for commercial / industrial land use scenario.



10.0 Conclusions

Transpower propose to install two 110 kV connections at Bombay Substation. Approximately 890 m³ of earthworks over an area of 770 m² will be required as part of the proposed connection works. It is anticipated that any surplus soil which cannot be retained on-site may require off-site disposal, subject to acceptance by the receiving facility.

The Site is an active electrical substation which has operated since circa 1942, which is an activity listed on the MfE HAIL. Consideration of the NESCS is required for soil disturbance on properties subject to activities listed on the MfE HAIL. The purpose of this DSI was to assess the potential risk to human health and/or the environment as part of the proposed soil disturbance, and to assess implications for the proposed soil disturbance under the NESCS.

This DSI included a review of the Site's history, soil sampling, and field observations. The key findings are:

- Historical aerial imagery confirms that substation infrastructure has occupied the eastern portion of the Site since circa 1942, with additional structures constructed and demolished across the Site and Property between the 1960's and 2010's.
- The surrounding land use has remained predominantly pastoral, with rural-residential dwellings to the north and south of the Property, and an industrial development to the north of the Property.
- Soil sampling involved the collection of 16 soil samples from seven locations across the areas of proposed soil disturbance at the Site.
- No exceedances were reported above the adopted NESCS SCS criteria.
- One sample (SS02_0.0) reported heavy metal concentrations (lead) above the AUP: OP environmental discharge criteria, with subsequent TCLP analysis confirming low leachability and minimal environmental risk when compared against Class A Landfill Waste Acceptance Criteria. The subsurface sample collected from SS02 (0.5 m bgl) reported lead within regional background concentrations, indicating that the elevated lead concentration is isolated to a surface area.
- Lead was reported above regional background concentrations in three samples (SS02_0.0, SS03_0.0 and SS03_0.5), and mercury was above background concentrations in one sample (SS07_0.5).
- Trace concentrations of PAH congeners were detected at one location (SS03), reported above laboratory LOR but below the adopted human health and environmental discharge criteria.
- Asbestos and PCBs were not reported above LOR in any soil sample analysed.
- The analytical results of the soil sampling have demonstrated that it is highly unlikely that there will be a risk to human health or the environment associated with the proposed work, or ongoing use of the Site as an electrical substation.

Based on the findings of the DSI, the following conclusions are made:

- The Site is considered a 'piece of land' under Regulation 5(7) of the NESCS due to the presence of HAIL activities. The proposed works may be undertaken as a Permitted Activity, assuming the requirements under Regulation 8(3) can be met including duration, soil disturbance volumes not exceeding 3,440 m³, and soil disposal volumes not exceeding 688 m³.



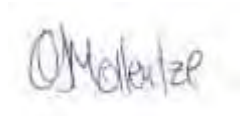
- The Contaminated Land Rules of the AUP: OP are not considered applicable to the proposed works, as contaminant levels do not exceed the relevant permitted activity criteria set out in Table E30.6.1.4.1 of the AUP: OP.
- Soils beneath the Site are considered suitable for retention and reuse, and on-site retention of excess generated soils is strongly encouraged. Should off-site disposal be required, soils from select locations may meet the cleanfill criteria, pending acceptance from the receiving facility, with the remaining soils unlikely to be considered cleanfill.

11.0 Closure

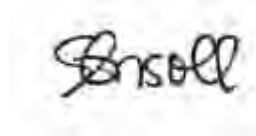
This investigation and associated reporting have been carried out and reviewed by a Suitably Qualified and Experienced Practitioner (SQEP) in accordance with NESCS requirements.

Sincerely,

SLR Consulting New Zealand Limited



Olivia Mollentze
Environmental Consultant



Sarah Ensoll
Senior Environmental Consultant



12.0 References

- 4Sight Consulting, 2020. Bombay Substation – RTU Replacement Pre-Works Assessment (ref. R_AA7217_BOB Substation RTU Replacement PreWorks Assessment_v1.0).
- 4Sight Consulting, 2020. Bombay Substation – RTU Replacement Project, Asbestos Third-Party Monitoring and Clearance (ref. R_AA7217_TP_BOB Substation RTU Replacement Clearance Report_v1).
- 4Sight Consulting, 2021. Bombay Substation ICT Project Pre-Works Assessment (ref. R_9918_Bombay Substation ICT Project Preworks Assessment_v2.0).
- 4Sight Consulting, 2022. BOB Substation Control and Earthing Cable Soil Assessment (ref. r_11142_TP_BOB Control & Earthing Cable Soil Assessment Results Letter_v1.0).
- Auckland Council Unitary Plan – Operative in part (AUP: OP):
http://unitaryplan.aucklandcouncil.govt.nz/pages/plan/Book.aspx?exhibit=AucklandUnitaryPlan_Print.
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- Ministry for the Environment. 2011. Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011. Ministry for the Environment, Wellington, New Zealand.
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- National Environmental Protection Council (NEPC), April 2011. National Environmental Protection (Assessment of Site Contamination) Measure – Schedule B1: Guideline on Investigation Levels for Soil and Groundwater.
- New Zealand Guidelines for Assessing and Managing Asbestos in Soil (NZ GAMAS, December 2024).
- NZ Geotechnical Database: <https://nzgd.org.nz>. Accessed June 2025.
- Retrolens® (2021). Retrieved from <http://retrolens.nz> and licensed by LINZ CC-BY 3.0, accessed June 2025.





Appendix A Development Plans

Detailed Site Investigation

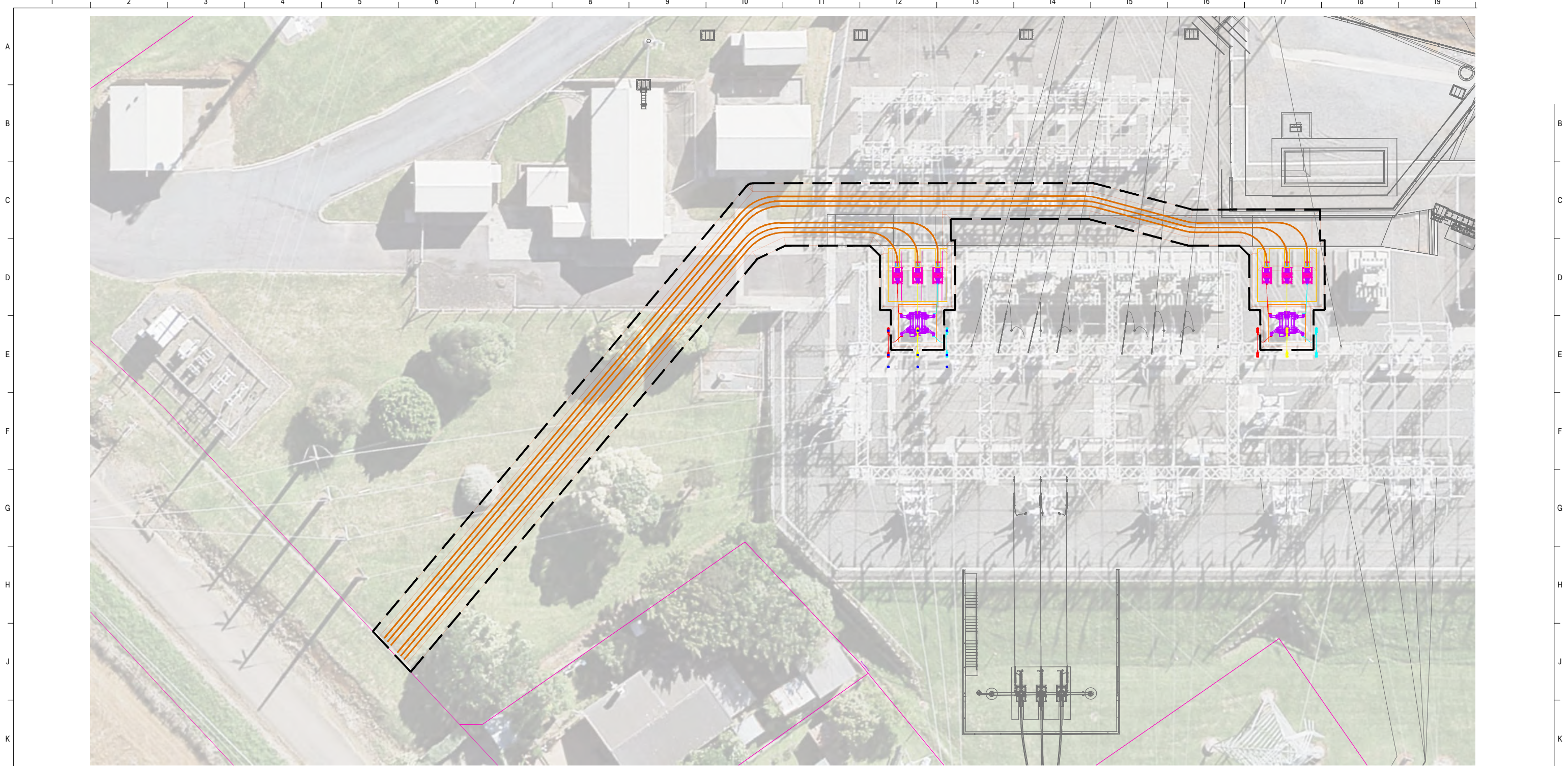
Bombay Substation

Transpower New Zealand Limited

SLR Project No.: 810.031579.00001

19 June 2025

TRANSPOWER DRAWING TITLE BLOCK VERSION: E3.0.1



Earthworks
890m³
770m²

REV	REVISION DESCRIPTION	CONSULTANT										TP	
		CONSLT	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE	DATE
P	-1 First Issue	AECOM	PS	5.25	PS	5.25	IG	5.25	GQ	5.25	-	-	-



TRANSPOWER

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BOMBAY SUBSTATION		TRANSPOWER PROJECT CODE IP_BOB_00Q_0_00		FOLDER -	
110 kV SWITCHYARD		DRAWING NUMBER TP_EARTHWORKS		SHEET 1	REVISION -1
ISNZ 110 kV SUPPLY POINT, SOLUTION STUDY REPORT		DRAWING CREATED BY: AECOM NZ Ltd (60739090) https://www.AECOM.com/nz		SCALE 1:200	
CIVIL EARTHWORKS					



Appendix B Historical Aerial Photographs

Detailed Site Investigation

Bombay Substation

Transpower New Zealand Limited

SLR Project No.: 810.031579.00001

19 June 2025



Legend

- Property Boundary
- - - Works Area Boundary

0 25 m 50 m

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Produced by **Datanest.earth**

Title: 1942 Historical Aerial		
Client: Transpower NZ Ltd		Size: A4
Project: Bombay Substation DSI	Drawn: OM	Figure: B1
Date: 17-06-2025	Checked: JB	
Proj No: 810.031579.00001	Scale: 1:1988	Version: 1.0



Legend

Property Boundary

Works Area Boundary

0

25 m

50 m

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SLR

Produced by **Datanest.earth**

Title:
1963 Historical Aerial

Client: Transpower NZ Ltd

Size: A4

Project:
Bombay
Substation DSI

Drawn: OM

Date: 17-06-2025

Checked: JB

Proj No:
810.031579.00001

Scale: 1:2000

Version: 1.0



Legend

- Property Boundary
- Works Area Boundary

0 25 m 50 m

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Produced by **Datanest.earth**

Title: 1975 Historical Aerial		
Client: Transpower NZ Ltd		Size: A4
Project: Bombay Substation DSI	Drawn: OM	Figure: B3
Date: 17-06-2025	Checked: JB	
Proj No: 810.031579.00001	Scale: 1:2000	Version: 1.0



Legend

- Property Boundary
- Works Area Boundary

0 25 m 50 m

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SLR

Produced by **Datanest.earth**

Title: 1988 Historical Aerial		
Client: Transpower NZ Ltd		Size: A4
Project: Bombay Substation DSI	Drawn: OM	Figure: B4
Date: 17-06-2025	Checked: JB	
Proj No: 810.031579.00001	Scale: 1:2000	Version: 1.0



- Legend**
- Property Boundary
 - Works Area Boundary

0 25 m 50 m
© OpenStreetMap contributors, GeoMaps Auckland
Regional Council



Produced by **Datanest.earth**

Title: 2003 - 2004 Historical Aerial		
Client: Transpower NZ Ltd		Size: A4
Project: Bombay Substation DSI	Drawn: OM	Figure: B5
Date: 17-06-2025	Checked: JB	
Proj No: 810.031579.00001	Scale: 1:2000	Version: 1.0



Legend

- Property Boundary
- Works Area Boundary

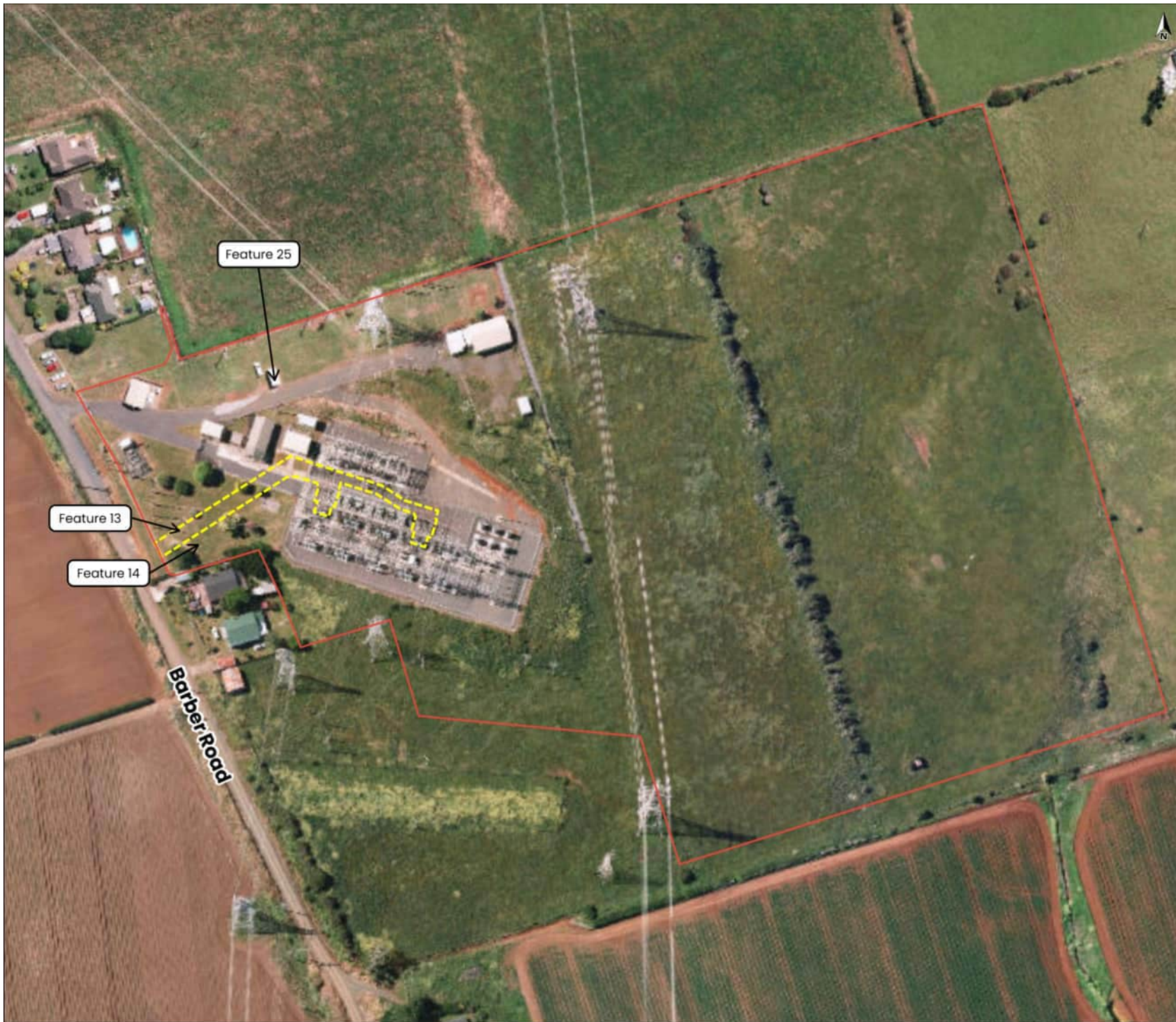
0 25 m 50 m

© OpenStreetMap contributors, GeoMaps Auckland
Regional Council

SLR

Produced by **Datanest.earth**

Title: 2006 Historical Aerial		
Client: Transpower NZ Ltd		Size: A4
Project: Bombay Substation DSI	Drawn: OM	Figure: B6
Date: 17-06-2025	Checked: JB	
Proj No: 810.031579.00001	Scale: 1:2000	Version: 1.0



Legend

- Property Boundary
- Works Area Boundary

0 25 m 50 m

© OpenStreetMap contributors, GeoMaps Auckland
Regional Council

SLR

Produced by **Datanest.earth**

Title: 2010 - 2011 Historical Aerial		
Client: Transpower NZ Ltd		Size: A4
Project: Bombay Substation DSI	Drawn: OM	Figure: B7
Date: 17-06-2025	Checked: JB	
Proj No: 810.031579.00001	Scale: 1:2000	Version: 1.0



Appendix C Contaminated Land Enquiry

Detailed Site Investigation

Bombay Substation

Transpower New Zealand Limited

SLR Project No.: 810.031579.00001

19 June 2025

6 June 2025

SLR Consulting

17 Grey Street

TAURANGA

Attention: Olivia Mollentze

Dear Olivia,

Site Contamination Enquiry – 153 Barber Road, Bombay

This letter is in response to your enquiry requesting available site contamination information within Auckland Council records for the above site. Please note this report does not constitute a site investigation report; such reports are required to be prepared by a (third-party) Suitably Qualified and Experienced Practitioner.

The following details are based on information available to the Contamination, Air & Noise Team in the Planning & Resource Consent Department. The details provided may be from former regional council information, as well as property information held by the former district/city councils. For completeness the relevant property file should also be requested to obtain all historical records and reports via 09 3010101 or online at:

<https://www.aucklandcouncil.govt.nz/buying-property/order-property-report/Pages/order-property-file.aspx>.

1. Hazardous Activities and Industries List (HAIL) Information

This list published by the Ministry for the Environment (MfE) comprises activities and industries that are considered likely to cause land contamination as a result of hazardous substance use, storage, and/or disposal.

Council's records indicate this site has possibly been subject to the following activity that fall within the HAIL:

- HAIL Item (B4) - Power stations, substations or switchyards

Records indicate the site 153 Barber Road Bombay has been used as a substation since the 1960s. A Detailed Site Investigation dated 2020 found that one sample exceeded the AUP(OP) permitted activity discharge criteria for copper.

Please note:

- *If you are demolishing any building that may have asbestos containing materials (ACM) in it, you have obligations under the Health and Safety at Work (Asbestos) Regulations 2016 for the management and removal of asbestos, including the need to engage a Competent Asbestos Surveyor to confirm the presence or absence of any ACM.*
- *Paints used on external parts of properties up until the mid-1970's routinely contained lead, a poison and a persistent environmental pollutant. You are advised to ensure that soils affected by old, peeling or flaking paint are assessed in relation to the proposed use of the property, including high risk use by young children.*

2. Consents and Incidents Information (200m radius of the selected site)

The Council database was searched for records of the following activities within approximately 200 metres of the site and results are displayed in Figure 1 below:

- Pollution Incidents (including air discharges, oil or diesel spills)
- Bores
- Contaminated site and air discharges, and industrial trade process consents
- Closed Landfills
- Air quality permitted activities
- Identified HAIL activities



Figure 1: Selected Consents, Incidents and HAIL activities within approximately 200m of the subject site

Legend:

All Consents +	Closed Landfill (Auckland Council owned) □
All Applications ■	Closed Landfill (Privately owned) ■
All Permitted Activities *	All Incidents •
All Bores ★	HAIL activities ▨

Relevant details of any pollution incidents, consents and HAIL activities are appended to this letter (Attachment A). Please refer to the column titled 'Property Address' on the spreadsheet to aid in identifying corresponding data on the map.

For any identified HAIL sites, please refer to the tab “HAIL activities” for more information (Column C and D include HAIL activity details where these are available).

Please note:

The HAIL activity hatching in Figure 1 only reflects whether a site has been identified as a HAIL site (both verified and non-verified) by the Council and the type of HAIL associated with the site. This does not confirm whether the site has been formally investigated or the contamination status of the property (e.g. contaminated, remediated etc.). Additionally, due to limitations within Council's records, the specific HAIL activity is not included in the data for all properties. For further information on any of these known HAIL sites, a subsequent site contamination enquiry can be lodged for the specific property (up to 5 adjacent properties can be covered in one request).

While the Auckland Council has carried out the above search using its best practical endeavours, it does not warrant its completeness or accuracy and disclaims any responsibility or liability in respect of the information. If you or any other person wishes to act or to rely on this information, or make any financial commitment based upon it, it is recommended that you seek appropriate technical and/or professional advice.

If you wish to clarify anything in this letter that relates to this site, please contact contaminatedsites@aucklandcouncil.govt.nz. Any follow up requests for information on other sites must go through the online order process.

Should you wish to request any of the files referenced above and/or listed in the attached spreadsheet for viewing, please contact the Auckland Council Call Centre on 301 0101 and note you are requesting former Auckland Regional Council records (the records department requires three working days' notice to ensure the files will be available).

Please note Auckland Council cost recovers officer's time for all site enquiries. As such an invoice for the time involved in this enquiry will follow shortly.

Yours Sincerely,

**Contamination, Air and Noise Team
Specialist Unit | Planning & Resource Consents
Auckland Council**

AC Consent Discharge																						
GIS Application ID	AC Consent ID	SAP Application ID	SAP Consent ID	Consent Reference	Consent Description	Transaction Type	Transaction Type Description	Form Type	Form Type Description	Consent Status	Application SubType	Lodged Date	Decision Date	Issued Date	Consent Decision	Notified	Notified Desc	Project Value	GISRecordStatus	Consent GIS Classification	XCoord	YCoord
		8360367431	8380426421	DIS60367431	Discharge of contaminants for an Industrial and Trade Activity (ITA) associated with a new electrical sub-station.	YRCC	Resource Management Consent	YDIS	Discharge Consent	Ongoing Monitoring	Industrial or Trade Activity			2021-01-21 0:00					Current	RMA Consent	1777508.69	5882595.38
	ACC0002522273	8360083096	8380126460	DIS60083096	Regional resource consent for the discharge of up to 5.4m3/d of treated wastewater at Bombay Wastewater Treatment Plant.	YRCC	Resource Management Consent	YDIS	Discharge Consent	Ongoing Monitoring	Wastewater			2014-07-28 0:00					Current	RMA Consent	1777119.07	5882438.18
		8360353823	8380426378	DIS60353823	Disturbance of contaminated soil associated with the undertaking of bulk earthworks of 5,300m*3 over and area of 13,500m*2 for the installation of infrastructure, including the disturbance of land whe	YRCC	Resource Management Consent	YDIS	Discharge Consent	Complete	Contaminated Site		2025-05-29 0:00	2020-06-08 0:00	Monitoring Complete				Current	RMA Consent	1777625.58	5882345.28

AC Consent Take																						
GIS Application ID	AC Consent ID	SAP Application ID	SAP Consent ID	Consent Reference	Consent Description	Transaction Type	Transaction Type Description	Form Type	Form Type Description	Consent Status	Application SubType	LodgedDate	DecisionDate	IssuedDate	ConsentDecision	Notified	Notified Desc	Project Value	GISRecordStatus	Consent GIS Classification	XCoord	YCoord
		8360352508		WAT60352508	Ground water take for irrigation of market garden located at 177 Barber Road and 27 Razorback Road	YRCA	Resource Management Application	YWAT	Water Consent application	Created in Error		1900-01-01 0:00	2020-02-03 0:00		Error	NNTF			Current	RMA Consent	1777373.43	5882118.32
		8360352937	8380436336	WAT60352937	Take/use up to 1330m3/day & 57,000m3/year Bombay Volcanic aquifer groundwater for irrigation of market garden on 27 Razorback Rd (WAT60352635 (bore 30284) and WAT60352937 (bore 30263) processed togeth	YRCC	Resource Management Consent	YWAT	Water Consent	Construction Monitoring	Take			2021-07-30 0:00					Current	RMA Consent	1777373.43	5882118.32
		8360352635	8380436297	WAT60352635	Take/use up to 420m3/day & 18,000m3/year Bombay Volcanic aquifer groundwater for irrigation of market garden on 27 Razorback Rd (WAT60352635 (bore 30284) and WAT60352937 (bore 30263) processed togethe	YRCC	Resource Management Consent	YWAT	Water Consent	Construction Monitoring	Take			2021-07-30 0:00					Current	RMA Consent	1777373.43	5882118.32

HAIL Contaminated Sites			
SAPSiteID	Property Address	HAIL Code	HAIL Description
11297058	153 Barber Road Bombay 2675	B4	Power stations, substations or switchyards

CONSENT NUMBER	FILE REFERENCE	CONSENT STATUS	GRANTED DATE	REVIEW DATE	EXPIRY DATE	PURPOSE	WORKS DESCRIPTION	EASTING	NORTHING	DISC SEW ID	ACTIVITY STATUS	MAX DAILY FLOW	SOURCE TYPE	WASTE TYPE	TREATMENT TYPE	ENVIRONMENT	DISPOSAL METHOD	DATE CREATED	PROPERTY ADDRESS	LOC TYP	DISCHARGE TYPE
43215	5310	Issued	20140725	20150330	20290930	To discharge up to 5400 litres per day of treated domestic wastewater from six 3 bedroom dwellings and an electricity substation to ground disposal.		1777540	5882230	2123	Occurring	5.4	Domestic	Sewage	Primary	Into ground - full year	Trenches	2017-06-01 17:22	Paparata Road Bombay Franklin	Point	MASTER.OAS_CONS_D_SEWAGE
14002	CG955310	Superseded	19990503		20141231	To discharge up to 5400 litres per day of treated domestic wastewater from six 3 bedroom dwellings and an electricity substation to ground disposal.	Vacating of two 3 bedroom dwellings and the singlemens quarters.	1777540	5882230	2123	Occurring	5.4	Domestic	Sewage	Primary	Into ground - full year	Trenches	2017-06-01 17:22	Paparata Road Bombay Franklin	Point	MASTER.OAS_CONS_D_SEWAGE
5511	CG865310	Replaced	19861201		19951231	TO DISCHARGE SEPTIC TANK EFFLUENT TO GROUND SOAKAGE~AND EVAPOTRANSPIRATION~~~~	N/A	1777540	5882230	2123	Occurring	7	Domestic	Sewage	Primary	Into ground - full year	Trenches	2017-06-01 17:22	Paparata Road Bombay Franklin	Point	MASTER.OAS_CONS_D_SEWAGE
42095	5310	Replaced	20131206		20141231	To discharge up to 5400 litres per day of treated domestic wastewater from six 3 bedroom dwellings and an electricity substation to ground disposal.		1777540	5882230	2123	Occurring	5400	Domestic	Sewage	Primary	Into ground - full year	Trenches	2017-06-01 17:22	Paparata Road Bombay Franklin	Point	MASTER.OAS_CONS_D_SEWAGE

Property Characteristic Extent																			
SAPSiteID	SAPSiteType	Primary Address	Condition Code	Condition Group	Condition Type	Condition Description	Condition tatus	Submitted By	Submission Date	ReportTitle	Report Author	Effective Date	Lapse Date	File Reference	Data Source	Property Status	Legacy Property ID	Maintenance Notes	GeometrySource
30038298	Occupancy	153 Barber Road Bombay Auckland 2675	CON	Contamination	Contamination Confirmed		Lapsed					2021-06-03 0:00	2021-10-05 0:00		SAP	Current	ACC0000626244		Property boundary
11297058	Standard	153 Barber Road Bombay 2675	CON	Contamination	Contamination Confirmed		Current					2021-10-12 0:00			SAP	Current	ACC0000608869		Property boundary

SIIED Pollution Incidents																	
INCIDENT NUMBER	XCOORD	YCOORD	NZTMXCOORD	NZTMYCOORD	LOCATION	SUBURB	CATCHMENT CODE	POLLUTANT TYPE	RECIEVED	REPORT	INCIDENT TYPE	IMPACT	VOLUME	PROBLEM FOUND	CULPRIT TRACED	RECORD DATE	INVESTIGATION DATE
12/1298	1777491.8	5882537.55	1777491.8	5882537.55	70 Paparata Rd	Bombay	732	Dirt / Inert Minerals / Sediment	Hotline	Discharge to Water	Potential Water/Land Pollution	Potential	N/A	YES	YES	2012-03-23 0:00	2012-03-23 0:00

AC Consent Bore																	
INCIDENT NUMBER	XCOORD	YCOORD	NZTMXCOORD	NZTMYCOORD	LOCATION	SUBURB	CATCHMENTCODE	POLLUTANTTYPE	RECIEVED	REPORT	INCIDENTTY PE	IMPACT	VOLUME	PROBLEM FOUND	CULPRIT TRACED	RECORD DATE	INVESTIGATION DATE
12/1298	1777491.8	5882537.55	1777491.8	5882537.55	70 Paparata Rd	Bombay	732	Dirt / Inert Minerals / Sediment	Hotline	Discharge to Water	Potential Water/Land Pollution	Potential	N/A	YES	YES	2012-03-23 0:00	2012-03-23 0:00



Appendix D Photolog

Detailed Site Investigation

Bombay Substation

Transpower New Zealand Limited

SLR Project No.: 810.031579.00001

19 June 2025

Site Photolog – 27 May 2025

Photo 1: View of material sampled from location SS01 	Photo 2: View of material sampled from location SS02 	Photo 3: View of material sampled from location SS03 
Photo 4: View of material sampled from location SS05 	Photo 5: View of material sampled from location SS06 	Photo 6: View of material sampled from location SS07 



Photo 7: View of material sampled from location SS08 	Photo 8: View of the Site facing north-west 	Photo 9: View of the Site facing south-east 
Photo 10: View of the Site facing south 	Photo 11: View of the Site facing north-east 	Photo 12: View of the Site facing south-east 





Appendix E Soil Logs and Analytical Schedule

Detailed Site Investigation

Bombay Substation

Transpower New Zealand Limited

SLR Project No.: 810.031579.00001

19 June 2025

Sample Location	Depth (m bgl)	Description	Analysis
SS01	0.0	Grass cover. Sandy SILT, dark brown. Low plasticity, moist.	HM, Asb SQ
	0.5	Sandy SILT, light brown. Low plasticity, moist. Some light brown clay inclusions.	HM
	1.0	Sandy SILT, light brown. Low plasticity, moist. Some light brown clay inclusions.	Hold cold
SS02	0.0	Grass cover. Sandy SILT, dark brown. Low plasticity, moist.	HM, Asb SQ
	0.5	Sandy SILT, light brown. Low plasticity, moist.	HM
SS03	0.0	Grass cover. Sandy SILT, red-dark brown. Low plasticity, moist.	HM, Asb SQ, PAH
	0.5	Sandy SILT with some gravel, red-dark brown. Low plasticity, moist. Gravel is medium, grey, subangular.	HM, PAH
	1.0	Sandy SILT with some gravel, red-dark brown. Low plasticity, moist. Gravel is medium, grey, subangular.	Hold cold
SS05	0.0	0.0 - 0.1 = gravel cover (not GAP60). Silty SAND with some gravel, light brown. Gravel is fine to medium, grey, subangular.	HM, Asb SQ, PAH
	0.5	Silty SAND with some gravel, light brown. Gravel is fine to medium, grey, subangular.	HM
SS06	0.0	0.0 - 0.1 = GAP60 cover. Silty SAND with some gravel, grey-dark brown. Gravel is fine, grey, subangular.	HM, Asb SQ, PAH
	0.5	Silty SAND with some gravel, grey-dark brown. Gravel is fine, grey, subangular.	HM, PAH
	1.0	Sandy SILT with trace gravel, brown. Low plasticity, moist. Gravel is fine, grey, subangular.	HM
SS07	0.0	0.0 - 0.1 = gravel cover (not GAP60). Silty SAND with some gravel, light brown. Gravel is fine to medium, grey, subangular.	HM, Asb SQ, PAH
	0.5	Silty SAND with some gravel, light brown. Gravel is fine to medium, grey, subangular.	HM
SS08	0.0	0.0 - 0.1 = GAP60 cover. Silty SAND with some gravel, light brown. Gravel is fine to medium, grey, subangular.	HM, PCB, Asb SQ, PAH
	0.5	Silty SAND with some gravel, light brown. Gravel is fine to medium, grey, subangular.	HM, PAH, PCB
	1.0	Silty SAND with some gravel, light brown. Gravel is fine to medium, grey, subangular.	HM

Key:

Heavy Metals (including mercury)	HM
Polycyclic Aromatic Hydrocarbons	PAH
Asbestos (semi-quantitative)	ACM SQ
Polychlorinated Biphenyls	PCB



Appendix F Laboratory Analytical Reports

Detailed Site Investigation

Bombay Substation

Transpower New Zealand Limited

SLR Project No.: 810.031579.00001

19 June 2025

Certificate of Analysis

Page 1 of 5

Client:	SLR Consulting New Zealand Limited	Lab No:	3901976	SPv2
Contact:	Sarah Ensoll	Date Received:	28-May-2025	
	C/- SLR Consulting New Zealand Limited	Date Reported:	13-Jun-2025	(Amended)
	PO Box 911310	Quote No:	97403	
	Victoria Street West	Order No:		
	Auckland 1142	Client Reference:	810.031579.00001	
		Submitted By:	Nikki White	

Sample Type: Soil

Sample Name:	SS01_0.0	SS01_0.5	SS02_0.0	SS02_0.5	SS03_0.0
	28-May-2025	28-May-2025	28-May-2025	28-May-2025	28-May-2025
Lab Number:	3901976.1	3901976.2	3901976.4	3901976.5	3901976.6

Individual Tests

Dry Matter	g/100g as rcvd	-	-	-	-	63
TCLP Weight of Sample Taken	g	-	-	50	-	-
TCLP Initial Sample pH	pH Units	-	-	6.5	-	-
TCLP Acid Adjusted Sample pH	pH Units	-	-	1.6	-	-
TCLP Extractant Type*		-	-	NaOH/Acetic acid at pH 4.93 +/- 0.05	-	-
TCLP Extraction Fluid pH	pH Units	-	-	5.0	-	-
TCLP Post Extraction Sample pH	pH Units	-	-	5.0	-	-

Heavy Metals with Mercury, Screen Level

Total Recoverable Arsenic	mg/kg dry wt	8	8	8	7	9
Total Recoverable Cadmium	mg/kg dry wt	0.11	< 0.10	0.15	< 0.10	0.23
Total Recoverable Chromium	mg/kg dry wt	26	27	27	29	29
Total Recoverable Copper	mg/kg dry wt	37	35	62	34	63
Total Recoverable Lead	mg/kg dry wt	48	40	550	46	114
Total Recoverable Mercury	mg/kg dry wt	0.21	0.26	0.29	0.25	0.20
Total Recoverable Nickel	mg/kg dry wt	12	11	11	10	16
Total Recoverable Zinc	mg/kg dry wt	92	55	85	39	146

Polycyclic Aromatic Hydrocarbons Screening in Soil*

Total of Reported PAHs in Soil	mg/kg dry wt	-	-	-	-	< 0.4
1-Methylnaphthalene	mg/kg dry wt	-	-	-	-	< 0.016
2-Methylnaphthalene	mg/kg dry wt	-	-	-	-	< 0.03
Acenaphthylene	mg/kg dry wt	-	-	-	-	< 0.016
Acenaphthene	mg/kg dry wt	-	-	-	-	< 0.016
Anthracene	mg/kg dry wt	-	-	-	-	< 0.016
Benzo[a]anthracene	mg/kg dry wt	-	-	-	-	< 0.016
Benzo[a]pyrene (BAP)	mg/kg dry wt	-	-	-	-	0.020
Benzo[a]pyrene Potency Equivalency Factor (PEF) NES*	mg/kg dry wt	-	-	-	-	< 0.038
Benzo[a]pyrene Toxic Equivalence (TEF)*	mg/kg dry wt	-	-	-	-	< 0.038
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	-	-	-	-	0.028
Benzo[e]pyrene	mg/kg dry wt	-	-	-	-	0.016
Benzo[g,h,i]perylene	mg/kg dry wt	-	-	-	-	0.020
Benzo[k]fluoranthene	mg/kg dry wt	-	-	-	-	< 0.016
Chrysene	mg/kg dry wt	-	-	-	-	< 0.016
Dibenzo[a,h]anthracene	mg/kg dry wt	-	-	-	-	< 0.016
Fluoranthene	mg/kg dry wt	-	-	-	-	0.021
Fluorene	mg/kg dry wt	-	-	-	-	< 0.016



This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised. The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Soil						
Sample Name:		SS01_0.0 28-May-2025	SS01_0.5 28-May-2025	SS02_0.0 28-May-2025	SS02_0.5 28-May-2025	SS03_0.0 28-May-2025
Lab Number:		3901976.1	3901976.2	3901976.4	3901976.5	3901976.6
Polycyclic Aromatic Hydrocarbons Screening in Soil*						
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	-	-	-	-	0.020
Naphthalene	mg/kg dry wt	-	-	-	-	< 0.08
Perylene	mg/kg dry wt	-	-	-	-	< 0.016
Phenanthrene	mg/kg dry wt	-	-	-	-	< 0.016
Pyrene	mg/kg dry wt	-	-	-	-	0.021
Sample Name:		SS03_0.5 28-May-2025	SS05_0.0 28-May-2025	SS05_0.5 28-May-2025	SS06_0.0 28-May-2025	SS06_0.5 28-May-2025
Lab Number:		3901976.7	3901976.9	3901976.10	3901976.11	3901976.12
Individual Tests						
Dry Matter	g/100g as rcvd	67	94	-	91	85
Heavy Metals with Mercury, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	8	9	11	4	3
Total Recoverable Cadmium	mg/kg dry wt	0.18	< 0.10	< 0.10	0.19	0.18
Total Recoverable Chromium	mg/kg dry wt	27	20	20	56	39
Total Recoverable Copper	mg/kg dry wt	81	21	21	36	25
Total Recoverable Lead	mg/kg dry wt	116	33	15.7	13.0	17.5
Total Recoverable Mercury	mg/kg dry wt	0.22	0.25	0.27	< 0.10	< 0.10
Total Recoverable Nickel	mg/kg dry wt	16	15	15	59	23
Total Recoverable Zinc	mg/kg dry wt	116	77	77	210	200
Polycyclic Aromatic Hydrocarbons Screening in Soil*						
Total of Reported PAHs in Soil	mg/kg dry wt	< 0.4	< 0.3	-	< 0.3	< 0.3
1-Methylnaphthalene	mg/kg dry wt	< 0.015	< 0.011	-	< 0.011	< 0.012
2-Methylnaphthalene	mg/kg dry wt	< 0.015	< 0.011	-	< 0.011	< 0.012
Acenaphthylene	mg/kg dry wt	< 0.015	< 0.011	-	< 0.011	< 0.012
Acenaphthene	mg/kg dry wt	< 0.015	< 0.011	-	< 0.011	< 0.012
Anthracene	mg/kg dry wt	< 0.015	< 0.011	-	< 0.011	< 0.012
Benzo[a]anthracene	mg/kg dry wt	0.022	< 0.011	-	< 0.011	< 0.012
Benzo[a]pyrene (BAP)	mg/kg dry wt	0.032	< 0.011	-	< 0.011	< 0.012
Benzo[a]pyrene Potency Equivalency Factor (PEF) NES*	mg/kg dry wt	0.044	< 0.026	-	< 0.026	< 0.028
Benzo[a]pyrene Toxic Equivalence (TEF)*	mg/kg dry wt	0.043	< 0.026	-	< 0.026	< 0.028
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	0.042	< 0.011	-	< 0.011	< 0.012
Benzo[e]pyrene	mg/kg dry wt	0.025	< 0.011	-	< 0.011	< 0.012
Benzo[g,h,i]perylene	mg/kg dry wt	0.033	< 0.011	-	< 0.011	< 0.012
Benzo[k]fluoranthene	mg/kg dry wt	0.019	< 0.011	-	< 0.011	< 0.012
Chrysene	mg/kg dry wt	0.026	< 0.011	-	< 0.011	< 0.012
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.015	< 0.011	-	< 0.011	< 0.012
Fluoranthene	mg/kg dry wt	0.050	< 0.011	-	< 0.011	< 0.012
Fluorene	mg/kg dry wt	< 0.015	< 0.011	-	< 0.011	< 0.012
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	0.030	< 0.011	-	< 0.011	< 0.012
Naphthalene	mg/kg dry wt	< 0.08	< 0.06	-	< 0.06	< 0.06
Perylene	mg/kg dry wt	< 0.015	< 0.011	-	< 0.011	< 0.012
Phenanthrene	mg/kg dry wt	0.028	< 0.011	-	< 0.011	< 0.012
Pyrene	mg/kg dry wt	0.044	< 0.011	-	< 0.011	< 0.012
Sample Name:		SS06_1.0 28-May-2025	SS07_0.0 28-May-2025	SS07_0.5 28-May-2025	SS08_0.0 28-May-2025	SS08_0.5 28-May-2025
Lab Number:		3901976.13	3901976.14	3901976.15	3901976.16	3901976.17
Individual Tests						
Dry Matter	g/100g as rcvd	-	95	-	95	95
Heavy Metals with Mercury, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	6	8	11	10	12
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	45	20	20	25	20

Sample Type: Soil						
Sample Name:		SS06_1.0 28-May-2025	SS07_0.0 28-May-2025	SS07_0.5 28-May-2025	SS08_0.0 28-May-2025	SS08_0.5 28-May-2025
Lab Number:		3901976.13	3901976.14	3901976.15	3901976.16	3901976.17
Heavy Metals with Mercury, Screen Level						
Total Recoverable Copper	mg/kg dry wt	34	22	23	22	19
Total Recoverable Lead	mg/kg dry wt	31	14.2	16.6	13.9	10.7
Total Recoverable Mercury	mg/kg dry wt	0.20	0.28	0.56	0.31	0.22
Total Recoverable Nickel	mg/kg dry wt	17	15	16	17	14
Total Recoverable Zinc	mg/kg dry wt	82	84	82	83	65
Polycyclic Aromatic Hydrocarbons Screening in Soil*						
Total of Reported PAHs in Soil	mg/kg dry wt	-	< 0.3	-	< 0.3	< 0.3
1-Methylnaphthalene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
2-Methylnaphthalene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Acenaphthylene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Acenaphthene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Anthracene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Benzo[a]anthracene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Benzo[a]pyrene (BAP)	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Benzo[a]pyrene Potency Equivalency Factor (PEF) NES*	mg/kg dry wt	-	< 0.025	-	< 0.025	< 0.026
Benzo[a]pyrene Toxic Equivalence (TEF)*	mg/kg dry wt	-	< 0.025	-	< 0.025	< 0.026
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Benzo[e]pyrene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Benzo[g,h,i]perylene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Benzo[k]fluoranthene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Chrysene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Dibenzo[a,h]anthracene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Fluoranthene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Fluorene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Naphthalene	mg/kg dry wt	-	< 0.06	-	< 0.06	< 0.06
Perylene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Phenanthrene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Pyrene	mg/kg dry wt	-	< 0.011	-	< 0.011	< 0.011
Polychlorinated Biphenyls Screening in Soil*						
PCB-18	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-28	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-31	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-44	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-49	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-52	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-60	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-77	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-81	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-86	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-101	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-105	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-110	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-114	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-118	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-121	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-123	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-126	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-128	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-138	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-141	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-149	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-151	mg/kg dry wt	-	-	-	< 0.010	< 0.010

Sample Type: Soil						
Sample Name:		SS06_1.0 28-May-2025	SS07_0.0 28-May-2025	SS07_0.5 28-May-2025	SS08_0.0 28-May-2025	SS08_0.5 28-May-2025
Lab Number:		3901976.13	3901976.14	3901976.15	3901976.16	3901976.17
Polychlorinated Biphenyls Screening in Soil*						
PCB-153	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-156	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-157	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-159	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-167	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-169	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-170	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-180	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-189	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-194	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-206	mg/kg dry wt	-	-	-	< 0.010	< 0.010
PCB-209	mg/kg dry wt	-	-	-	< 0.010	< 0.010
Mono-Ortho PCB Toxic Equivalence (TEF)*	mg/kg dry wt	-	-	-	< 0.000003	< 0.000003
Non-Ortho PCB Toxic Equivalence (TEF)*	mg/kg dry wt	-	-	-	< 0.0014	< 0.0014
Total PCB (Sum of 35 congeners)	mg/kg dry wt	-	-	-	< 0.35	< 0.35

Sample Name:		SS08_1.0 28-May-2025	QAQC 28-May-2025
Lab Number:		3901976.18	3901976.19
Heavy Metals with Mercury, Screen Level			
Total Recoverable Arsenic	mg/kg dry wt	9	9
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	0.10
Total Recoverable Chromium	mg/kg dry wt	20	27
Total Recoverable Copper	mg/kg dry wt	23	37
Total Recoverable Lead	mg/kg dry wt	13.3	46
Total Recoverable Mercury	mg/kg dry wt	0.31	0.21
Total Recoverable Nickel	mg/kg dry wt	16	12
Total Recoverable Zinc	mg/kg dry wt	73	100

Sample Type: Aqueous		
Sample Name:		SS02_0.0 [TCLP extract]
Lab Number:		3901976.20
Individual Tests		
Total Lead	g/m ³	1.36

Analyst's Comments	
Amended Report: This certificate of analysis replaces report '3901976-SPv1' issued on 05-Jun-2025 at 10:55 am. Reason for amendment: Additional testing added as per clients request.	

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Environmental Solids Sample Drying*	Air dried at 35°C Used for sample preparation. May contain a residual moisture content of 2-5%.	-	16-17
Environmental Solids Sample Drying*	Air dried at 35°C Used for sample preparation. May contain a residual moisture content of 2-5%. (Free water removed before analysis, non-soil objects such as sticks, leaves, grass and stones also removed).	-	1-2, 4-7, 9-19
Total of Reported PAHs in Soil	Sonication extraction, GC-MS/MS analysis. In-house based on US EPA 8270.	0.03 mg/kg dry wt	6-7, 9, 11-12, 14, 16-17

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
Dry Matter	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. (Free water removed before analysis, non-soil objects such as sticks, leaves, grass and stones also removed). US EPA 3550.	0.10 g/100g as rcvd	6-7, 9, 11-12, 14, 16-17
Benzo[a]pyrene Potency Equivalency Factor (PEF) NES*	BaP Potency Equivalence calculated from; Benzo(a)anthracene x 0.1 + Benzo(b)fluoranthene x 0.1 + Benzo(j)fluoranthene x 0.1 + Benzo(k)fluoranthene x 0.1 + Benzo(a)pyrene x 1.0 + Chrysene x 0.01 + Dibenzo(a,h)anthracene x 1.0 + Fluoranthene x 0.01 + Indeno(1,2,3-c,d)pyrene x 0.1. Ministry for the Environment. 2011. Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health. Wellington: Ministry for the Environment.	0.024 mg/kg dry wt	6-7, 9, 11-12, 14, 16-17
Benzo[a]pyrene Toxic Equivalence (TEF)*	Benzo[a]pyrene Toxic Equivalence (TEF) calculated from; Benzo[a]pyrene x 1.0 + Benzo(a)anthracene x 0.1 + Benzo(b)fluoranthene x 0.1 + Benzo(k)fluoranthene x 0.1 + Chrysene x 0.01 + Dibenzo(a,h)anthracene x 1.0 + Indeno(1,2,3-c,d)pyrene x 0.1. Guidelines for assessing and managing contaminated gasworks sites in New Zealand (GMG) (MfE, 1997).	0.024 mg/kg dry wt	6-7, 9, 11-12, 14, 16-17
Heavy Metals with Mercury, Screen Level	Dried sample, < 2mm fraction. Nitric/Hydrochloric acid digestion US EPA 200.2. Complies with NES Regulations. ICP-MS screen level, interference removal by Kinetic Energy Discrimination if required.	0.10 - 4 mg/kg dry wt	1-2, 4-7, 9-19
Polycyclic Aromatic Hydrocarbons Screening in Soil*	Sonication extraction, GC-MS/MS analysis. Tested on as received sample. In-house based on US EPA 8270.	0.010 - 0.05 mg/kg dry wt	6-7, 9, 11-12, 14, 16-17
Polychlorinated Biphenyls Screening in Soil*	Sonication extraction, GC-MS analysis. Tested on dried sample. In-house based on US EPA 8270.	0.00000020 - 0.35 mg/kg dry wt	16-17
TCLP Profile*	Extraction at 30 +/- 2 rpm for 18 +/- 2 hours, (Ratio 1g sample : 20g extraction fluid). US EPA 1311.	-	4
TCLP Profile			
TCLP Weight of Sample Taken	Gravimetric. US EPA 1311.	0.1 g	4
TCLP Initial Sample pH	pH meter. US EPA 1311.	0.1 pH Units	4
TCLP Acid Adjusted Sample pH	pH meter. US EPA 1311.	0.1 pH Units	4
TCLP Extractant Type*	US EPA 1311.	-	4
TCLP Extraction Fluid pH	pH meter. US EPA 1311.	0.1 pH Units	4
TCLP Post Extraction Sample pH	pH meter. US EPA 1311.	0.1 pH Units	4

Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Total Digestion of Extracted Samples*	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	20
Total Lead	Nitric acid digestion, ICP-MS, screen level. APHA 3125 B : Online Edition.	0.0021 g/m ³	20

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 29-May-2025 and 13-Jun-2025. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.



Kim Harrison MSc
Client Services Manager - Environmental

Certificate of Analysis

Page 1 of 3

Client:	SLR Consulting New Zealand Limited	Lab No:	3901993	A2Pv1
Contact:	Sarah Ensoll	Date Received:	28-May-2025	
	C/- SLR Consulting New Zealand Limited	Date Reported:	03-Jun-2025	
	PO Box 911310	Quote No:	97403	
	Victoria Street West	Order No:		
	Auckland 1142	Client Reference:	810.031579.00001	
		Add. Client Ref:	Sampled: 28/05/25	
		Submitted By:	Nikki White	

Sample Type: Soil

Sample Name:	SS01_0.0 28-May-2025	SS02_0.0 28-May-2025	SS03_0.0 28-May-2025	SS05_0.0 28-May-2025	SS06_0.0 28-May-2025
Lab Number:	3901993.1	3901993.4	3901993.6	3901993.9	3901993.11
Asbestos Presence / Absence	Asbestos NOT detected.	Asbestos NOT detected.	Asbestos NOT detected.	Asbestos NOT detected.	Asbestos NOT detected.
Description of Asbestos Form	-	-	-	-	-
Asbestos in ACM as % of Total Sample*	% w/w < 0.001	% w/w < 0.001	% w/w < 0.001	% w/w < 0.001	% w/w < 0.001
Combined Fibrous Asbestos + Asbestos Fines as % of Total Sample*	% w/w < 0.001	% w/w < 0.001	% w/w < 0.001	% w/w < 0.001	% w/w < 0.001
Asbestos as Fibrous Asbestos as % of Total Sample*	% w/w < 0.001	% w/w < 0.001	% w/w < 0.001	% w/w < 0.001	% w/w < 0.001
Asbestos as Asbestos Fines as % of Total Sample*	% w/w < 0.001	% w/w < 0.001	% w/w < 0.001	% w/w < 0.001	% w/w < 0.001
As Received Weight	g 625.5	g 610.2	g 532.0	g 1,141.3	g 1,129.8
Dry Weight	g 434.5	g 429.8	g 333.2	g 1,094.8	g 1,053.8
Moisture*	% 31	% 30	% 37	% 4	% 7
Sample Fraction >10mm*	g dry wt < 0.1	g dry wt 3.6	g dry wt 16.0	g dry wt 588.9	g dry wt 305.2
Sample Fraction <10mm to >2mm*	g dry wt 253.8	g dry wt 288.4	g dry wt 252.0	g dry wt 408.9	g dry wt 406.8
Sample Fraction <2mm*	g dry wt 180.9	g dry wt 137.7	g dry wt 65.1	g dry wt 96.0	g dry wt 339.8
<2mm Subsample Weight*	g dry wt 51.0	g dry wt 52.1	g dry wt 53.8	g dry wt 52.4	g dry wt 59.0
Weight of Asbestos in ACM (Non-Friable)	g dry wt < 0.00001	g dry wt < 0.00001	g dry wt < 0.00001	g dry wt < 0.00001	g dry wt < 0.00001
Weight of Asbestos as Fibrous Asbestos (Friable)*	g dry wt < 0.00001	g dry wt < 0.00001	g dry wt < 0.00001	g dry wt < 0.00001	g dry wt < 0.00001
Weight of Asbestos as Asbestos Fines (Friable)*	g dry wt < 0.00001	g dry wt < 0.00001	g dry wt < 0.00001	g dry wt < 0.00001	g dry wt < 0.00001

Sample Name:	SS07_0.0 28-May-2025	SS08_0.0 28-May-2025
Lab Number:	3901993.14	3901993.16
Asbestos Presence / Absence	Asbestos NOT detected.	Asbestos NOT detected.
Description of Asbestos Form	-	-
Asbestos in ACM as % of Total Sample*	% w/w < 0.001	% w/w < 0.001
Combined Fibrous Asbestos + Asbestos Fines as % of Total Sample*	% w/w < 0.001	% w/w < 0.001
Asbestos as Fibrous Asbestos as % of Total Sample*	% w/w < 0.001	% w/w < 0.001
Asbestos as Asbestos Fines as % of Total Sample*	% w/w < 0.001	% w/w < 0.001
As Received Weight	g 1,072.8	g 987.2
Dry Weight	g 1,026.4	g 947.3
Moisture*	% 4	% 4



This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised. The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Soil			
Sample Name:		SS07_0.0 28-May-2025	SS08_0.0 28-May-2025
Lab Number:		3901993.14	3901993.16
Sample Fraction >10mm*	g dry wt	558.0	232.0
Sample Fraction <10mm to >2mm*	g dry wt	386.5	544.2
Sample Fraction <2mm*	g dry wt	81.0	170.2
<2mm Subsample Weight*	g dry wt	56.0	53.5
Weight of Asbestos in ACM (Non-Friable)	g dry wt	< 0.00001	< 0.00001
Weight of Asbestos as Fibrous Asbestos (Friable)*	g dry wt	< 0.00001	< 0.00001
Weight of Asbestos as Asbestos Fines (Friable)*	g dry wt	< 0.00001	< 0.00001

Glossary of Terms

- Loose fibres (Minor) - One or two fibres/fibre bundles identified during analysis by stereo microscope/PLM.
 - Loose fibres (Major) - Three or more fibres/fibre bundles identified during analysis by stereo microscope/PLM.
 - ACM Debris (Minor) - One or two small (<2mm) pieces of material attached to fibres identified during analysis by stereo microscope/PLM.
 - ACM Debris (Major) - Large (>2mm) piece, or more than three small (<2mm) pieces of material attached to fibres identified during analysis by stereo microscope/PLM.
 - Unknown Mineral Fibres - Mineral fibres of unknown type detected by polarised light microscopy including dispersion staining. The fibres detected may or may not be asbestos fibres. To confirm the identities, another independent analytical technique may be required.
 - Trace - Trace levels of asbestos, as defined by AS4964-2004.
- For further details, please contact the Asbestos Team.

Please refer to the **BRANZ New Zealand Guidelines for Assessing and Managing Asbestos in Soil**.
<https://www.branz.co.nz/asbestos>

The following assumptions have been made:

1. Asbestos Fines in the <2mm fraction, after homogenisation, is evenly distributed throughout the fraction
2. The weight of asbestos in the sample is unaffected by the ashing process.

Results are representative of the sample provided to Hill Laboratories only.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
New Zealand Guidelines Semi Quantitative Asbestos in Soil			
As Received Weight	Measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland.	0.1 g	1, 4, 6, 9, 11, 14, 16
Dry Weight	Sample dried at 100 to 105°C, measurement on balance. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland.	0.1 g	1, 4, 6, 9, 11, 14, 16
Moisture*	Sample dried at 100 to 105°C. Calculation = (As received weight - Dry weight) / as received weight x 100.	1 %	1, 4, 6, 9, 11, 14, 16
Sample Fraction >10mm*	Sample dried at 100 to 105°C, 10mm sieve, measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland.	0.1 g dry wt	1, 4, 6, 9, 11, 14, 16
Sample Fraction <10mm to >2mm*	Sample dried at 100 to 105°C, 10mm and 2mm sieve, measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland.	0.1 g dry wt	1, 4, 6, 9, 11, 14, 16
Sample Fraction <2mm*	Sample dried at 100 to 105°C, 2mm sieve, measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland.	0.1 g dry wt	1, 4, 6, 9, 11, 14, 16
Asbestos Presence / Absence	Examination using Low Powered Stereomicroscopy followed by 'Polarised Light Microscopy' including 'Dispersion Staining Techniques'. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland. AS 4964 (2004) - Method for the Qualitative Identification of Asbestos in Bulk Samples.	0.01%	1, 4, 6, 9, 11, 14, 16
Description of Asbestos Form	Description of asbestos form and/or shape if present.	-	1, 4, 6, 9, 11, 14, 16
Weight of Asbestos in ACM (Non-Friable)	Measurement on analytical balance, from the >10mm Fraction. Weight of asbestos based on assessment of ACM form. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.00001 g dry wt	1, 4, 6, 9, 11, 14, 16

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
Asbestos in ACM as % of Total Sample*	Calculated from weight of asbestos in ACM and sample dry weight. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.001 % w/w	1, 4, 6, 9, 11, 14, 16
Weight of Asbestos as Fibrous Asbestos (Friable)*	Measurement on analytical balance, from the >10mm Fraction. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.00001 g dry wt	1, 4, 6, 9, 11, 14, 16
Asbestos as Fibrous Asbestos as % of Total Sample*	Calculated from weight of fibrous asbestos and sample dry weight. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.001 % w/w	1, 4, 6, 9, 11, 14, 16
Weight of Asbestos as Asbestos Fines (Friable)*	Measurement on analytical balance, from the <10mm Fractions. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.00001 g dry wt	1, 4, 6, 9, 11, 14, 16
Asbestos as Asbestos Fines as % of Total Sample*	Calculated from weight of asbestos fines and sample dry weight. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.001 % w/w	1, 4, 6, 9, 11, 14, 16
Combined Fibrous Asbestos + Asbestos Fines as % of Total Sample*	Calculated from weight of fibrous asbestos plus asbestos fines and sample dry weight. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.001 % w/w	1, 4, 6, 9, 11, 14, 16

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed on 03-Jun-2025. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.



Danielle Carter BSc, PGDipSci, MSc
Laboratory Technician - Asbestos



Appendix G Chain of Custody Documentation

Detailed Site Investigation

Bombay Substation

Transpower New Zealand Limited

SLR Project No.: 810.031579.00001

19 June 2025



Quote No

Primary Contact Sarah Enco 11

Submitted By Nikki White

Client Name CLR

Address

Postcode

Phone

Mobile

Email

Charge To SLR

Client Reference 810.0315 79.00001

Order No

Results To

Reports will be emailed to Primary Contact by default.
Additional Reports will be sent as specified below.☒ Email Primary Contact☐ Email Submitter☐ Email Client☐ Email Other☐ Other

ADDITIONAL INFORMATION

ANALYSIS REQUEST

R J Hill Laboratories Limited
Ground Floor, 28 Heather Street
Parnell
Auckland 1052, New Zealand

Job No: Date Recv: 28-May-25 15:22

390 1993

0508 HILL LAB (44 555 22)
+64 7 858 2000
mail@hill-labs.co.nz
www.hill-labs.co.nz

Received by: Meg Vallabh



3133019937

CHAIN OF CUSTODY RECORD

Sent to
Hill Laboratories

Date & Time: 28/05/25

Name: Nikki White

☒ Tick if you require COC
to be emailed back

Signature: [Signature]

Samples will be processed at a Hill Labs site
capability and capacity. Please inform the lab
retained and analysed at the site of receipt.Received at
Hill Laboratories

Date & Time:

Name:

Signature:

Temperature On Arrival
11.7 °CTemperature was measured on one of
more arbitrarily chosen samples in this
batch

Priority

☐ Low☒ Normal☐ High☐ Urgent (ASAP, extra charge applies, please contact lab first)

Requested Reporting Date:

Please ensure all asbestos samples are **individually
double bagged** upon submission to the laboratory.

No.	Sample Name	Sample Material	Sample Location	Sample Date	Tests Required (if not as per Quote)
1	SS01-0-0	SS01	-	28/5/25	Hold Cold
2	SS01-0-5				
3	SS01-0-10				
4	SS02-0-0				
5	SS02-0-5				
6	SS03-0-0				
7	SS03-0-5				
8	SS03-0-10				
9	SS05-0-0				
10	SS05-0-5				
11	SS06-0-0				
12	SS06-0-5				
13	SS06-0-10				

14	SS07-0-0	Soil	-	2815165	Mold	Wld
15	SS07-0-8					
16	SS08-0-0					
17	SS08-0-8					
18	SS08-1-0					
19	QA QC					

RE: Hill Labs Job Request Form and Summary Page for Job Number 3901993; Ref: 810.031579.00001

From Sarah Ensoll <sarah.ensoll@slrconsulting.com>
Date Thu 29/5/25 8:53 AM
To Kelly Smith <kelly.smith@hill-labs.co.nz>
Cc Olivia Mollentze <olivia.mollentze@slrconsulting.com>

📎 1 attachment (393 KB)
3901993 - COC+Summary.pdf;

Good morning 🌞

Can we please have the samples analysed for the following:

Sample Location	Depth (m bgl)	Analysis
SS01	0.0	HM, Asb SQ
	0.5	HM
	1.0	Hold cold
SS02	0.0	HM, Asb SQ
	0.5	HM
SS03	0.0	HM, Asb SQ, PAH
	0.5	HM, PAH
	1.0	Hold cold
SS05	0.0	HM, Asb SQ, PAH
	0.5	HM
SS06	0.0	HM, Asb SQ, PAH
	0.5	HM, PAH
	1.0	HM
SS07	0.0	HM, Asb SQ, PAH
	0.5	HM
SS08	0.0	HM, PCB, Asb SQ, PAH
	0.5	HM, PAH, PCB
	1.0	HM
QAQC		HM

HM = Heavy metals (inc. mercury)
PAH = Polycyclic Aromatic Hydrocarbons
Asb SQ = Asbestos (semi-quantitative)
PCB = Polychlorinated Biphenyls

Thanks so much,
Sarah

Sarah Ensoll

Senior Environmental Consultant - Environmental Services

📞 +64 9 303 0311
📞 +64 279 469 904
✉ sarah.ensoll@slrconsulting.com

Job Information Summary

Page 1 of 2

Client:	SLR Consulting New Zealand Limited	Lab No:	3901993
Contact:	Sarah Ensoll	Date Registered:	28-May-2025 4:11 pm
	C/- SLR Consulting New Zealand Limited	Priority:	High
	PO Box 911310	Quote No:	97403
	Victoria Street West	Order No:	
	Auckland 1142	Client Reference:	810.031579.00001
		Add. Client Ref:	Sampled 28/05/25
		Submitted By:	Nikki White
		Charge To:	SLR Consulting New Zealand Limited
		Target Date:	03-Jun-2025 4:30 pm

Samples

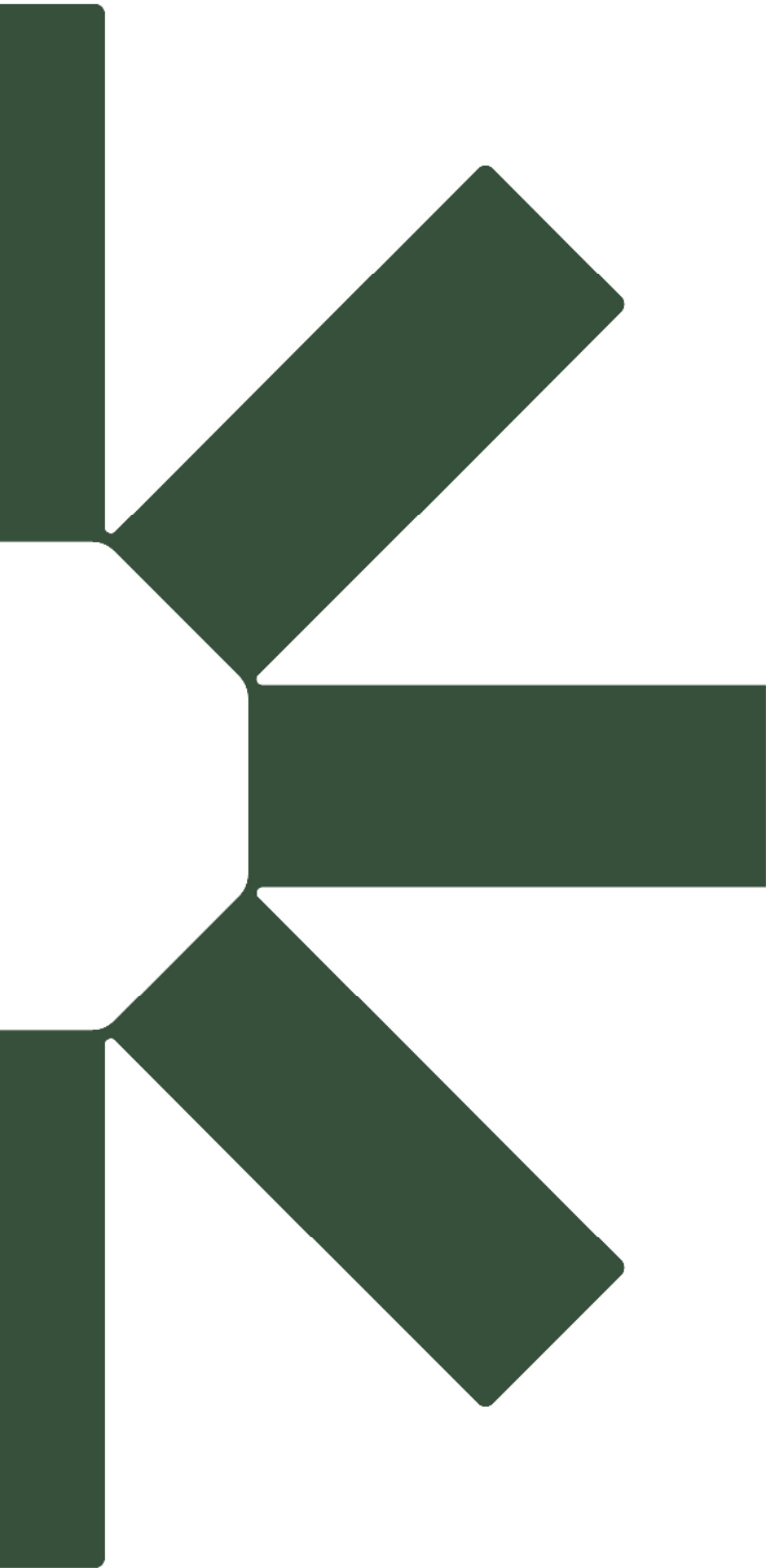
No	Sample Name	Sample Type	Containers	Tests Requested
1	SS01_0.0 28-May-2025	Soil	PSoil500Asb	New Zealand Guidelines Semi Quantitative Asbestos in Soil
2	SS01_0.5 28-May-2025	Soil	PSoil500Asb	Hold
3	SS01_1.0 28-May-2025	Soil	PSoil500Asb	Hold
4	SS02_0.0 28-May-2025	Soil	PSoil500Asb	New Zealand Guidelines Semi Quantitative Asbestos in Soil
5	SS02_0.5 28-May-2025	Soil	PSoil500Asb	Hold
6	SS03_0.0 28-May-2025	Soil	PSoil500Asb	New Zealand Guidelines Semi Quantitative Asbestos in Soil
7	SS03_0.5 28-May-2025	Soil	PSoil500Asb	Hold
8	SS03_1.0 28-May-2025	Soil	PSoil500Asb	Hold
9	SS05_0.0 28-May-2025	Soil	PSoil500Asb	New Zealand Guidelines Semi Quantitative Asbestos in Soil
10	SS05_0.5 28-May-2025	Soil	PSoil500Asb	Hold
11	SS06_0.0 28-May-2025	Soil	PSoil500Asb	New Zealand Guidelines Semi Quantitative Asbestos in Soil
12	SS06_0.5 28-May-2025	Soil	PSoil500Asb	Hold
13	SS06_1.0 28-May-2025	Soil	PSoil500Asb	Hold
14	SS07_0.0 28-May-2025	Soil	PSoil500Asb	New Zealand Guidelines Semi Quantitative Asbestos in Soil
15	SS07_0.5 28-May-2025	Soil	PSoil500Asb	Hold
16	SS08_0.0 28-May-2025	Soil	PSoil500Asb	New Zealand Guidelines Semi Quantitative Asbestos in Soil
17	SS08_0.5 28-May-2025	Soil	PSoil500Asb	Hold
18	SS08_1.0 28-May-2025	Soil	PSoil500Asb	Hold

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
New Zealand Guidelines Semi Quantitative Asbestos in Soil			
As Received Weight	Measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland.	0.1 g	1, 4, 6, 9, 11, 14, 16
Dry Weight	Sample dried at 100 to 105°C, measurement on balance. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland.	0.1 g	1, 4, 6, 9, 11, 14, 16
Moisture	Sample dried at 100 to 105°C. Calculation = (As received weight - Dry weight) / as received weight x 100.	1 %	1, 4, 6, 9, 11, 14, 16
Sample Fraction >10mm	Sample dried at 100 to 105°C, 10mm sieve, measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland.	0.1 g dry wt	1, 4, 6, 9, 11, 14, 16

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
Sample Fraction <10mm to >2mm	Sample dried at 100 to 105°C, 10mm and 2mm sieve, measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland.	0.1 g dry wt	1, 4, 6, 9, 11, 14, 16
Sample Fraction <2mm	Sample dried at 100 to 105°C, 2mm sieve, measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland.	0.1 g dry wt	1, 4, 6, 9, 11, 14, 16
Asbestos Presence / Absence	Examination using Low Powered Stereomicroscopy followed by 'Polarised Light Microscopy' including 'Dispersion Staining Techniques'. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland. AS 4964 (2004) - Method for the Qualitative Identification of Asbestos in Bulk Samples.	0.01%	1, 4, 6, 9, 11, 14, 16
Description of Asbestos Form	Description of asbestos form and/or shape if present.	-	1, 4, 6, 9, 11, 14, 16
Weight of Asbestos in ACM (Non-Friable)	Measurement on analytical balance, from the >10mm Fraction. Weight of asbestos based on assessment of ACM form. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.00001 g dry wt	1, 4, 6, 9, 11, 14, 16
Asbestos in ACM as % of Total Sample	Calculated from weight of asbestos in ACM and sample dry weight. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.001 % w/w	1, 4, 6, 9, 11, 14, 16
Weight of Asbestos as Fibrous Asbestos (Friable)	Measurement on analytical balance, from the >10mm Fraction. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.00001 g dry wt	1, 4, 6, 9, 11, 14, 16
Asbestos as Fibrous Asbestos as % of Total Sample	Calculated from weight of fibrous asbestos and sample dry weight. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.001 % w/w	1, 4, 6, 9, 11, 14, 16
Weight of Asbestos as Asbestos Fines (Friable)	Measurement on analytical balance, from the <10mm Fractions. Analysed at Hill Laboratories - Asbestos; 28 Heather Street, Auckland. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.00001 g dry wt	1, 4, 6, 9, 11, 14, 16
Asbestos as Asbestos Fines as % of Total Sample	Calculated from weight of asbestos fines and sample dry weight. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.001 % w/w	1, 4, 6, 9, 11, 14, 16
Combined Fibrous Asbestos + Asbestos Fines as % of Total Sample	Calculated from weight of fibrous asbestos plus asbestos fines and sample dry weight. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.001 % w/w	1, 4, 6, 9, 11, 14, 16



Making Sustainability Happen

Attachment B

Certificate of title (Appendix A1 and A2 of the AEE]

Attachment B is a copy of Appendix A1 and A2 from Attachment A:
Bombay Substation s181(3) Alteration AEE as lodged.

Attachment C

WSP Consultant Advice Note (Appendix C of the AEE)

Attachment C is a copy of Appendix C from Attachment A: Bombay Substation s181(3) Alteration AEE as lodged.

Attachment D

Plans of proposed Transpower works (Appendix D of the AEE)

Attachment D is a copy of Appendix D from Attachment A: Bombay Substation s181(3) Alteration AEE as lodged.

Attachment E

Detailed Site Investigation Report (Appendix E of the AEE)

Attachment E is a copy of Appendix E from Attachment A: Bombay Substation s181(3) Alteration AEE as lodged.

Attachment F

Agreed Condition Set

ATTACHMENT F AGREED ALTERATIONS

Changes to Conditions 1, 2, 4, 5, 6, 9, 10 and 14 are shown in ~~strike-out~~ and **bold underline** in the conditions below:

8511 Bombay Electricity Substation

Designation Number	8511
Requiring Authority	Transpower New Zealand Ltd
Location	153 Barber Road, Bombay
Rollover Designation	No
Legacy Reference	Designation 85, Auckland Council District Plan (Franklin Section) 2000
Lapse Date	Given effect to (i.e. no lapse date)

Purpose

Electricity transmission - Bombay electricity substation, line connections and associated infrastructure.

Conditions

- ~~1. The Bombay ICT Project shall be undertaken in general accordance with the plans and information submitted within the Assessment of Environmental Effects for the Notice of Requirement reference 'Bombay Substation alteration to designation - Notice of Requirement and AEE', dated 1 March 2021.~~

~~An Outline Plan for the Bombay ICT Project shall not be required and is waived, unless there are more than minor changes to the plans and information referenced above, in which case Transpower New Zealand Ltd (Transpower) shall clearly identify these changes and Auckland Council may then require an Outline Plan be submitted in accordance with Section 176A of the RMA.~~

1. **The New Feeder Project shall be undertaken in general accordance with the plans and information submitted within the 'Alteration of Bombay Electricity Substation Designation Conditions', dated 16 July 2025.**

An Outline Plan for the New Feeder Project shall not be required and is waived, unless there are more than minor changes to the plans and information referenced above, in which case the requiring authority shall clearly identify these changes and Auckland Council may then require an Outline Plan be submitted in accordance with Section 176A of the RMA.

- ~~2. Any new works other than the works provided for within the Bombay ICT Project in Condition 1 above shall be addressed through an Outline~~

~~Plan where required in accordance with Section 176A of the Resource Management Act 1991.~~

Cultural / Spiritual

- ~~3.~~ 2. If any urupā, traditional sites, taonga (significant artefacts), or kōiwi (human remains) are exposed during site works, then the following procedures shall apply:
- a. Works in the immediate vicinity of the site that has been exposed shall cease;
 - b. The site supervisor shall immediately secure the area in a way that ensures that any remains or artefacts are untouched;
 - c. The site supervisor shall notify representatives of relevant tāngata whenua, Heritage New Zealand – Pouhere Taonga, the Auckland Council and, in the case of human remains, the New Zealand Police; and
 - d. the notification in (c) above shall allow such persons being given a reasonable time to record and recover archaeological features discovered before work may recommence on the exposed site.

Construction and Maintenance Noise

- ~~4. All construction work shall be designed, managed and conducted to ensure that construction and maintenance noise from the site does not exceed the limits in NZS6803:1999 Acoustics—Construction Noise.~~
3. All the noise from any construction work activity must be measured, assessed, and managed in accordance with the requirements of NZS6803:1999 Acoustics—Construction Noise. Construction work is defined in New Zealand Standard NZS6803:1999 Acoustics – Construction noise.
- ~~5. Prior to any significant construction work taking place, including any associated significant earthworks, a noise management plan shall be prepared, with the assistance of a suitably qualified and experienced person, that sets out the management procedures in terms of section 8 and Annex E of NZS6803:1999 and the works shall be undertaken in accordance with that noise management plan.~~
4. A Construction Noise and Vibration Management Plan (CNVMP) must be submitted to Auckland Council for certification prior to commencement of any construction works that cannot comply with the guideline upper limits of New Zealand Standard NZS6803:1999 Acoustics—Construction Noise. The objective of the CNVMP is to identify and require the adoption of the best practicable option to minimise construction noise and vibration effects as far as practical.
- ~~6. The noise management plan required by the above condition 3 shall be submitted to Council's Consents Manager for approval, at least 20~~

~~working days prior to the works commencing. The Council's Consents Manager shall respond within 20 working days indicating whether approval is given or refused. Approval shall not be unreasonably withheld.~~

5. **The CNVMP required by condition 4 must be submitted to the Council's Consents Manager, for certification a minimum of twenty (20) working days prior to commencement of the works. Construction works must not commence until certification has been received in writing from the Council. Certification must not be unreasonably withheld.**

Vibration

7. 6. Vibration from all construction activities shall not exceed the limits of, and shall be measured and assessed in accordance with, German Standard DIN 4150-3 (1999- 02) Structural Vibration – Effects of Vibration on Structures.

Hazardous Substances

8. 7. Any new part of the facility containing oil shall be designed to comply with Transpower's Oil Spill Management Policy (TPG:GS.54.01).

Electric and Magnetic Fields (EMF)

9. ~~Any new equipment, including the Bombay ICT Project, shall be designed and operated to limit the electric and magnetic field exposures at or beyond the secure boundary of the substation site to the International Commission on Non-Ionising Radiation Protection, Guidelines for limiting exposure to time-varying electric and magnetic fields (1Hz – 100kHz), (Health Physics 99(6):818-836; 2010) (ICNIRP Guidelines). That is the public exposure reference levels of 5 kV/m for electric fields and 200 µT for magnetic flux density at one metre above ground level under maximum normal operating conditions (ie, when there are no faults in the transmission system).~~
10. ~~Within 3 months of completing the Bombay ICT Project, Transpower shall engage a suitably qualified and experienced person to confirm compliance with the ICNIRP guidelines as evidenced by actual measurements of electric and magnetic fields in relevant locations. The report shall be submitted to Auckland Council. In the event of any non-compliance, the report shall demonstrate how compliance can be achieved and the timeline for completion.~~

Radio Frequency Interference

11. 8. Any new works or equipment shall be designed to comply with NZS 6869:2004 Limits and Measurement Methods of Electromagnetic Noise from High-Voltage a.c. Power Systems, 0.15 to 1000 MHz.

Earth Potential Rise

12. 9. Any new substation earth grids shall be designed, built, and tested to

ensure electrical safety at or beyond the designation boundary in accordance with Transpower Standard TP.DS.52.01, Issue 3, May 2016.

Light Spill

- ~~43.~~ 10. Any new exterior lighting shall be designed to comply with:
- AS/NZS 1158.3.1:2020 Lighting for Roads and Public Spaces Part 3.1; and
 - Transpower's guidelines and information for switchyard and grounds lighting TP.DS 40.03 and
 - AS/NA 4282:2019, Control of Obtrusive Effects of Outdoor Lighting.

Operational Noise

- ~~14. A noise management plan shall be submitted for any new equipment (such as transformers, fans and circuit breakers) where the noise from such equipment is likely to generate adverse noise effects for any noise sensitive land uses located in the vicinity.~~

11. Cumulative noise from the substation (including but not limited to existing or new transformers, necessary fans and circuit breakers) must be designed and operated to ensure that the following noise limits are not exceeded.

Zone	Time	Noise Limit	Location
<u>Residential zoned sites</u>	<u>0700-2200 hours</u>	<u>55 dB L_{Aeq,15min}</u>	<u>At or within the boundary</u>
	<u>2200-0700 hours</u>	<u>45 dB L_{Aeq,15min}</u>	
<u>Rural Zoned Sites</u>	<u>0700-2200 hours</u>	<u>55 dB L_{Aeq,15min}</u>	<u>At or within the notional boundary</u>
	<u>2200-0700 hours</u>	<u>45 dB L_{Aeq,15min}</u>	

Noise must be measured in accordance with New Zealand Standard NZS 6801:2008 Acoustics – Measurement of Environmental Sound and assessed in accordance with NZS 6802:2008 Acoustics – Environmental Noise apart from the application of an adjustment for noise containing special audible characteristics which must not be applied to noise at the 63 Hz and 125Hz centre frequency octave bands.

Landscaping and visual amenity

- ~~45.~~ **12.** The requiring authority shall ensure that a planted landscaping strip with a minimum width of 10m is established and maintained along the eastern and southern boundaries, and part of the northern and western boundaries, of Lot 1 DP 162890 in accordance with Figure 6 – Mitigation Principles prepared by Isthmus, June 2021.
- ~~46.~~ **13.** The landscaping shall be implemented as soon as practicable in the planting season following inclusion of the designation in the Auckland Unitary Plan.

- ~~17.~~ **14.** *The landscaping shall be maintained regularly and kept in a tidy condition, including replacement if any planting dies or becomes over mature. The replacement of any vegetation shall be no later than the next planting season (i.e. April to September) following discovery of the need for replacement.*
- ~~18.~~ **15.** *Any landscaping required by Condition ~~15~~ **12** above may be trimmed or removed where:*
- a. It is necessary in order to remove or reduce any risk to the maintenance or operational integrity of the substations; or*
 - b. Future development of National Grid facilities on the site necessitates the removal of any landscaping.*
- ~~19.~~ **16.** *If development of National Grid facilities on the site necessitates the removal of any landscaping (such as for new line connections), the Outline Plan submitted for these works shall address how the adverse visual effects of any landscaping removal will be avoided, remedied or mitigated.*
- ~~20.~~ **17.** *A 15 m wide height restriction zone shall be maintained along the eastern and southern boundaries, and part of the northern and western boundaries, of Lot 1 DP 162890 in accordance with Figure 6 – Mitigation Principles prepared by Isthmus, June 2021. The height restriction zone extends 15 m into the site from the edge of the planted landscaping strip as shown on shown on Figure 6.*
- ~~21.~~ **18.** *Within the height restriction zone, a height limit of 15 m applies to any new substation structures and buildings in accordance with this designation (i.e. any new substation structures and buildings that were not existing as at 31 May 2021). For the avoidance of doubt, this height limit does not apply to transmission lines and transmission line support structures.*

Construction Traffic Management Plan

- ~~22.~~ **19.** *At least 20 working days prior to the commencement of any significant construction activities on the site, Transpower shall submit a Construction Traffic Management Plan (CTMP) to the Council for certification. The CTMP shall detail traffic management and mitigation measures for delivery of substation equipment and materials and general construction activities including, but not limited to, restricting over dimension loads and otherwise limiting heavy vehicle movements wherever practicable to outside of Bombay School peak drop off and pick up times (being 8:15 to 9 am and 2:30 to 3:15 pm Monday to Friday, excluding school and public holidays).*

In relation to the delivery of over dimension loads including transformers, the CTMP shall detail traffic management and mitigation measures within the vicinity of the Bombay Substation (i.e. Barber and Paparata Roads).

Advice Note

1. *Any new works or equipment means those works which were not existing prior to the notification of the Auckland Unitary Plan.*
2. *The requiring authority will obtain an over dimension/ overweight load permit as required from Waka Kotahi NZ Transport Authority with input from Auckland Transport.*
3. *Should any proposed earthworks result in the identification of any previously unknown sensitive materials (i.e. archaeological sites), the requirements of E11.6.1 Land disturbance – Regional Accidental Discovery Rule (as at 14 May 2021 or any subsequent update to this rule) of the Auckland Unitary Plan (Operative in part) shall be complied with.*
4. **Should any proposed earthworks not comply with the permitted activity condition under Regulation 8 (3) of the National Environmental Standard for Assessing Contaminants in Soil to Protect Human Health [NESC] a Contaminated Site Management Plan shall be submitted to the council for review and certification.**

Conditions

Schedule of Legal Descriptions

Parcel ID	
Lot 3 DP 439460	
Lot DP 162890	

Landscape strip and height restriction area map



Figure 6 - Mitigation Principles

Scale 1:2000 @ A3
Drawing No. 01/18
Produced by Isthmus Group Ltd.
Base map Source: Auckland Council GIS (Openmap)

LEGEND:

-  Proposed native low growing species & shrubs up to 2m in height
-  Proposed native tree planting
-  Existing Contours (10m)

 Countryside Power Site (Designation 2010)

 10m height restriction zone



Isthmus.

Working Information: Transforming Transpower New Zealand Ltd | June 2020

Attachment G Clean Set of Conditions

ATTACHMENT G CLEAN CONDITIONS

8511 Bombay Electricity Substation

<i>Designation Number</i>	8511
<i>Requiring Authority</i>	Transpower New Zealand Ltd
<i>Location</i>	153 Barber Road, Bombay
<i>Rollover Designation</i>	No
<i>Legacy Reference</i>	Designation 85, Auckland Council District Plan (Franklin Section) 2000
<i>Lapse Date</i>	Given effect to (i.e. no lapse date)

Purpose

Electricity transmission - Bombay electricity substation, line connections and associated infrastructure.

Conditions

- 1. The New Feeder Project shall be undertaken in general accordance with the plans and information submitted within the 'Alteration of Bombay Electricity Substation Designation Conditions', dated 16 July 2025.*

An Outline Plan for the New Feeder Project shall not be required and is waived, unless there are more than minor changes to the plans and information referenced above, in which case the requiring authority shall clearly identify these changes and Auckland Council may then require an Outline Plan be submitted in accordance with Section 176A of the RMA.

Cultural / Spiritual

- 2. If any urupā, traditional sites, taonga (significant artefacts), or kōiwi (human remains) are exposed during site works, then the following procedures shall apply:*
 - a. Works in the immediate vicinity of the site that has been exposed shall cease;*
 - b. The site supervisor shall immediately secure the area in a way that ensures that any remains or artefacts are untouched;*
 - c. The site supervisor shall notify representatives of relevant tāngata whenua, Heritage New Zealand – Pouhere Taonga, the Auckland Council and, in the case of human remains, the New Zealand Police; and*
 - d. the notification in (c) above shall allow such persons being given a reasonable time to record and recover archaeological features*

discovered before work may recommence on the exposed site.

Construction and Maintenance Noise

- 3. All the noise from any construction work activity must be measured, assessed, and managed in accordance with the requirements of NZS6803:1999 Acoustics–Construction Noise. Construction work is defined in New Zealand Standard NZS6803:1999 Acoustics – Construction noise.*
- 4. A Construction Noise and Vibration Management Plan (CNVMP) must be submitted to Auckland Council for certification prior to commencement of any construction works that cannot comply with the guideline upper limits of New Zealand Standard NZS6803:1999 Acoustics–Construction Noise. The objective of the CNVMP is to identify and require the adoption of the best practicable option to minimise construction noise and vibration effects as far as practical.*
- 5. The CNVMP required by condition 4 must be submitted to the Council's Consents Manager, for certification a minimum of twenty (20) working days prior to commencement of the works. Construction works must not commence until certification has been received in writing from the Council. Certification must not be unreasonably withheld.*

Vibration

- 6. Vibration from all construction activities shall not exceed the limits of, and shall be measured and assessed in accordance with, German Standard DIN 4150-3 (1999- 02) Structural Vibration – Effects of Vibration on Structures.*

Hazardous Substances

- 7. Any new part of the facility containing oil shall be designed to comply with Transpower's Oil Spill Management Policy (TPG:GS.54.01).*

Radio Frequency Interference

- 8. Any new works or equipment shall be designed to comply with NZS 6869:2004 Limits and Measurement Methods of Electromagnetic Noise from High-Voltage a.c. Power Systems, 0.15 to 1000 MHz.*

Earth Potential Rise

- 9. Any new substation earth grids shall be designed, built, and tested to ensure electrical safety at or beyond the designation boundary in accordance with Transpower Standard TP.DS.52.01, Issue 3, May 2016.*

Light Spill

10. Any new exterior lighting shall be designed to comply with:
 - a. AS/NZS 1158.3.1:2020 Lighting for Roads and Public Spaces Part 3.1; and
 - b. Transpower's guidelines and information for switchyard and grounds lighting TP.DS 40.03 and
 - c. AS/NA 4282:2019, Control of Obtrusive Effects of Outdoor Lighting.

Operational Noise

11. Cumulative noise from the substation (including but not limited to existing or new transformers, necessary fans and circuit breakers) must be designed and operated to ensure that the following noise limits are not exceeded.

Zone	Time	Noise Limit	Location
Residential zoned sites	0700-2200 hours	55 dB $L_{Aeq,15min}$	At or within the boundary
	2200-0700 hours	45 dB $L_{Aeq,15min}$	
Rural Zoned Sites	0700-2200 hours	55 dB $L_{Aeq,15min}$	At or within the notional boundary
	2200-0700 hours	45 dB $L_{Aeq,15min}$	

Noise must be measured in accordance with New Zealand Standard NZS 6801:2008 Acoustics – Measurement of Environmental Sound and assessed in accordance with NZS 6802:2008 Acoustics – Environmental Noise apart from the application of an adjustment for noise containing special audible characteristics which must not be applied to noise at the 63 Hz and 125Hz centre frequency octave bands.

Landscaping and visual amenity

12. The requiring authority shall ensure that a planted landscaping strip with a minimum width of 10m is established and maintained along the eastern and southern boundaries, and part of the northern and western boundaries, of Lot 1 DP 162890 in accordance with Figure 6 – Mitigation Principles prepared by Isthmus, June 2021.
13. The landscaping shall be implemented as soon as practicable in the planting season following inclusion of the designation in the Auckland Unitary Plan.
14. The landscaping shall be maintained regularly and kept in a tidy condition, including replacement if any planting dies or becomes over mature. The replacement of any vegetation shall be no later than the next planting season (i.e. April to September) following discovery of the need for replacement.
15. Any landscaping required by Condition 12 above may be trimmed or removed where:
 - a. It is necessary in order to remove or reduce any risk to the

maintenance or operational integrity of the substations; or

- b. Future development of National Grid facilities on the site necessitates the removal of any landscaping.*

- 16. If development of National Grid facilities on the site necessitates the removal of any landscaping (such as for new line connections), the Outline Plan submitted for these works shall address how the adverse visual effects of any landscaping removal will be avoided, remedied or mitigated.*
- 17. A 15 m wide height restriction zone shall be maintained along the eastern and southern boundaries, and part of the northern and western boundaries, of Lot 1 DP 162890 in accordance with Figure 6 – Mitigation Principles prepared by Isthmus, June 2021. The height restriction zone extends 15 m into the site from the edge of the planted landscaping strip as shown on shown on Figure 6.*
- 18. Within the height restriction zone, a height limit of 15 m applies to any new substation structures and buildings in accordance with this designation (i.e. any new substation structures and buildings that were not existing as at 31 May 2021). For the avoidance of doubt, this height limit does not apply to transmission lines and transmission line support structures.*

Construction Traffic Management Plan

- 19. At least 20 working days prior to the commencement of any significant construction activities on the site, Transpower shall submit a Construction Traffic Management Plan (CTMP) to the Council for certification. The CTMP shall detail traffic.*

management and mitigation measures for delivery of substation equipment and materials and general construction activities including, but not limited to, restricting over dimension loads and otherwise limiting heavy vehicle movements wherever practicable to outside of Bombay School peak drop off and pick up times (being 8:15 to 9 am and 2:30 to 3:15 pm Monday to Friday, excluding school and public holidays).

In relation to the delivery of over dimension loads including transformers, the CTMP shall detail traffic management and mitigation measures within the vicinity of the Bombay Substation (i.e. Barber and Paparata Roads).

Advice Note

- 1. Any new works or equipment means those works which were not existing prior to the notification of the Auckland Unitary Plan.*
- 2. The requiring authority will obtain an over dimension/ overweight load permit as required from Waka Kotahi NZ Transport Authority with input*

from Auckland Transport.

3. Should any proposed earthworks result in the identification of any previously unknown sensitive materials (i.e. archaeological sites), the requirements of E11.6.1 Land disturbance – Regional Accidental Discovery Rule (as at 14 May 2021 or any subsequent update to this rule) of the Auckland Unitary Plan (Operative in part) shall be complied with.
4. Should any proposed earthworks not comply with the permitted activity condition under Regulation 8 (3) of the National Environmental Standard for Assessing Contaminants in Soil to Protect Human Health [NESCS] a Contaminated Site Management Plan shall be submitted to the council for review and certification.

Conditions

Schedule of Legal Descriptions

Parcel ID	
Lot 3 DP 439460 Lot DP 162890	

Landscape strip and height restriction area map



Attachment B

Transpower New Zealand Limited

Designation 8511 Bombay Electricity Substation

(Strikethrough/underscore)

8511 Bombay Electricity Substation

Designation Number	8511
Requiring Authority	Transpower New Zealand Ltd
Location	153 Barber Road, Bombay
Rollover Designation	Yes
Legacy Reference	Designation 85, Auckland Council District Plan (Franklin Section) 2000
Lapse Date	Given effect to (i.e. no lapse date)

Purpose

Electricity transmission - Bombay electricity substation, line connections and associated infrastructure.

Conditions

~~1. The Bombay ICT Project shall be undertaken in general accordance with the plans and information submitted within the Assessment of Environmental Effects for the Notice of Requirement reference 'Bombay Substation alteration to designation – Notice of Requirement and AEE', dated 1 March 2021.~~

~~An Outline Plan for the Bombay ICT Project shall not be required and is waived, unless there are more than minor changes to the plans and information referenced above, in which case Transpower New Zealand Ltd (Transpower) shall clearly identify these changes and Auckland Council may then require an Outline Plan be submitted in accordance with Section 176A of the RMA.~~

1. The New Feeder Project shall be undertaken in general accordance with the plans and information submitted within the 'Alteration of Bombay Electricity Substation Designation Conditions', dated 16 July 2025.

An Outline Plan for the New Feeder Project shall not be required and is waived, unless there are more than minor changes to the plans and information referenced above, in which case the requiring authority shall clearly identify these changes and Auckland Council may then require an Outline Plan be submitted in accordance with Section 176A of the RMA.

~~2. Any new works other than the works provided for within the Bombay ICT Project in Condition 1 above shall be addressed through an Outline Plan where required in accordance with Section 176A of the Resource Management Act 1991.~~

Cultural / Spiritual

- ~~3.~~ 2. If any urupā, traditional sites, taonga (significant artefacts), or kōiwi (human remains) are exposed during site works, then the following procedures shall apply:
 - a. Works in the immediate vicinity of the site that has been exposed shall cease;

- b. The site supervisor shall immediately secure the area in a way that ensures that any remains or artefacts are untouched;
- c. The site supervisor shall notify representatives of relevant tāngata whenua, Heritage New Zealand – Pouhere Taonga, the Auckland Council and, in the case of human remains, the New Zealand Police; and
- d. the notification in (c) above shall allow such persons being given a reasonable time to record and recover archaeological features discovered before work may recommence on the exposed site.

Construction and Maintenance Noise

~~4. All construction work shall be designed, managed and conducted to ensure that construction and maintenance noise from the site does not exceed the limits in NZS6803:1999 Acoustics–Construction Noise.~~

3. All the noise from any construction work activity must be measured, assessed, and managed in accordance with the requirements of NZS6803:1999 Acoustics–Construction Noise. Construction work is defined in New Zealand Standard NZS6803:1999 Acoustics – Construction noise.

~~5. Prior to any significant construction work taking place, including any associated significant earthworks, a noise management plan shall be prepared, with the assistance of a suitably qualified and experienced person, that sets out the management procedures in terms of section 8 and Annex E of NZS6803:1999 and the works shall be undertaken in accordance with that noise management plan.~~

4. A Construction Noise and Vibration Management Plan (CNVMP) must be submitted to Auckland Council for certification prior to commencement of any construction works that cannot comply with the guideline upper limits of New Zealand Standard NZS6803:1999 Acoustics–Construction Noise. The objective of the CNVMP is to identify and require the adoption of the best practicable option to minimise construction noise and vibration effects as far as practical.

~~6. The noise management plan required by the above condition 3 shall be submitted to Council's Consents Manager for approval, at least 20 working days prior to the works commencing. The Council's Consents Manager shall respond within 20 working days indicating whether approval is given or refused. Approval shall not be unreasonably withheld.~~

5. The CNVMP required by condition 4 must be submitted to the Council's Consents Manager, for certification a minimum of twenty (20) working days prior to commencement of the works. Construction works must not commence until certification has been received in writing from the Council. Certification must not be unreasonably withheld.

Vibration

7.6. Vibration from all construction activities shall not exceed the limits of, and shall be measured and assessed in accordance with, German Standard DIN 4150-3 (1999-02) Structural Vibration – Effects of Vibration on Structures.

Hazardous Substances

~~8.7~~ Any new part of the facility containing oil shall be designed to comply with Transpower's Oil Spill Management Policy (TPG:GS.54.01).

Electric and Magnetic Fields (EMF)

~~9. Any new equipment, including the Bombay ICT Project, shall be designed and operated to limit the electric and magnetic field exposures at or beyond the secure boundary of the substation site to the International Commission on Non-Ionising Radiation Protection, Guidelines for limiting exposure to time-varying electric and magnetic fields (1Hz—100kHz), (Health Physics 99(6):818–836; 2010) (ICNIRP Guidelines). That is the public exposure reference levels of 5 kV/m for electric fields and 200 µT for magnetic flux density at one metre above ground level under maximum normal operating conditions (ie, when there are no faults in the transmission system).~~

~~10. Within 3 months of completing the Bombay ICT Project, Transpower shall engage a suitably qualified and experienced person to confirm compliance with the ICNIRP guidelines as evidenced by actual measurements of electric and magnetic fields in relevant locations. The report shall be submitted to Auckland Council. In the event of any non-compliance, the report shall demonstrate how compliance can be achieved and the timeline for completion.~~

Radio Frequency Interference

~~11.8.~~ Any new works or equipment shall be designed to comply with NZS 6869:2004 Limits and Measurement Methods of Electromagnetic Noise from High-Voltage a.c. Power Systems, 0.15 to 1000 MHz.

Earth Potential Rise

~~12.9.~~ Any new substation earth grids shall be designed, built, and tested to ensure electrical safety at or beyond the designation boundary in accordance with Transpower Standard TP.DS.52.01, Issue 3, May 2016.

Light Spill

- ~~13.10.~~ Any new exterior lighting shall be designed to comply with:
- a. AS/NZS 1158.3.1:2020 Lighting for Roads and Public Spaces Part 3.1; and
 - b. Transpower's guidelines and information for switchyard and grounds lighting TP.DS 40.03 and
 - c. AS/NA 4282:2019, Control of Obtrusive Effects of Outdoor Lighting.

Operational Noise

~~14. A noise management plan shall be submitted for any new equipment (such as transformers, fans and circuit breakers) where the noise from such equipment is likely to generate adverse noise effects for any noise sensitive land uses located in the vicinity.~~

11. Cumulative noise from the substation (including but not limited to existing or new transformers, necessary fans and circuit breakers) must be designed and operated to ensure that the following noise limits are not exceeded.

Zone	Time	Noise Limit	Location
<u>Residential zoned sites</u>	0700-2200 hours	55 dB L _{Aeq,15min}	<u>At or within the boundary</u>
	2200-0700 hours	45 dB L _{Aeq,15min}	
<u>Rural Zoned Sites</u>	0700-2200 hours	55 dB L _{Aeq,15min}	<u>At or within the notional boundary</u>
	2200-0700 hours	45 dB L _{Aeq,15min}	

Noise must be measured in accordance with New Zealand Standard NZS 6801:2008 Acoustics – Measurement of Environmental Sound and assessed in accordance with NZS 6802:2008 Acoustics – Environmental Noise apart from the application of an adjustment for noise containing special audible characteristics which must not be applied to noise at the 63 Hz and 125Hz centre frequency octave bands.

Landscaping and visual amenity

~~45.12.~~ The requiring authority shall ensure that a planted landscaping strip with a minimum width of 10m is established and maintained along the eastern and southern boundaries, and part of the northern and western boundaries, of Lot 1 DP 162890 in accordance with Figure 6 – Mitigation Principles prepared by Isthmus, June 2021.

~~46.13.~~ The landscaping shall be implemented as soon as practicable in the planting season following inclusion of the designation in the Auckland Unitary Plan.

~~47.14.~~ The landscaping shall be maintained regularly and kept in a tidy condition, including replacement if any planting dies or becomes over mature. The replacement of any vegetation shall be no later than the next planting season (i.e. April to September) following discovery of the need for replacement.

~~48.15.~~ Any landscaping required by Condition ~~45.12~~ above may be trimmed or removed where:

- a) It is necessary in order to remove or reduce any risk to the maintenance or operational integrity of the substations; or
- b) Future development of National Grid facilities on the site necessitates the removal of any landscaping.

~~49.16.~~ If development of National Grid facilities on the site necessitates the removal of any landscaping (such as for new line connections), the Outline Plan submitted for these works shall address how the adverse visual effects of any landscaping removal will be avoided, remedied or mitigated.

~~20.17.~~ A 15 m wide height restriction zone shall be maintained along the eastern and southern boundaries, and part of the northern and western boundaries, of Lot 1 DP 162890 in accordance with Figure 6 – Mitigation Principles prepared by Isthmus, June 2021. The height restriction zone extends 15 m into the site from the edge of the planted landscaping strip as shown on shown on Figure 6.

~~24.18.~~ Within the height restriction zone, a height limit of 15 m applies to any new substation structures and buildings in accordance with this designation (i.e. any new substation structures and buildings that were not existing as at 31 May 2021). For the avoidance of

doubt, this height limit does not apply to transmission lines and transmission line support structures.

Construction Traffic Management Plan

22.19. At least 20 working days prior to the commencement of any significant construction activities on the site, Transpower shall submit a Construction Traffic Management Plan (CTMP) to the Council for certification. The CTMP shall detail traffic management and mitigation measures for delivery of substation equipment and materials and general construction activities including, but not limited to, restricting over dimension loads and otherwise limiting heavy vehicle movements wherever practicable to outside of Bombay School peak drop off and pick up times (being 8:15 to 9 am and 2:30 to 3:15 pm Monday to Friday, excluding school and public holidays).

In relation to the delivery of over dimension loads including transformers, the CTMP shall detail traffic management and mitigation measures within the vicinity of the Bombay Substation (i.e. Barber and Paparata Roads).

Advice Note

1. Any new works or equipment means those works which were not existing prior to the notification of the Auckland Unitary Plan.
2. The requiring authority will obtain an over dimension/ overweight load permit as required from Waka Kotahi NZ Transport Authority with input from Auckland Transport.
3. Should any proposed earthworks result in the identification of any previously unknown sensitive materials (i.e. archaeological sites), the requirements of E11.6.1 Land disturbance – Regional Accidental Discovery Rule (as at 14 May 2021 or any subsequent update to this rule) of the Auckland Unitary Plan (Operative in part) shall be complied with.
4. Should any proposed earthworks not comply with the permitted activity condition under Regulation 8 (3) of the National Environmental Standard for Assessing Contaminants in Soil to Protect Human Health [NESC] a Contaminated Site Management Plan shall be submitted to the council for review and certification.

Attachments

Schedule of Legal Descriptions

Parcel ID	
Lot 3 DP 439460 Lot DP 162890	

Landscape strip and height restriction area map



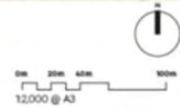
Figure 6 - Mitigation Principles

Scale 1:12,000 @ A3
Drawing no. 50106
Produced by Isthmus Group Ltd
Base map source: Auckland Council GIS (Openmap)

LEGEND:

	Proposed native low growing species & shrubs up to 2m in height		Courtney Power Site (Designation 3010)
	Proposed native tree planting		10m height restriction zone
	Existing Contours (10m)		

Isthmus.
Building Interconnecting Transformer | Transpower New Zealand Ltd | June 2025



Attachment C
Transpower New Zealand Limited
Designation 8511 Bombay Electricity Substation
(Clean)

8511 Bombay Electricity Substation

Designation Number	8511
Requiring Authority	Transpower New Zealand Ltd
Location	153 Barber Road, Bombay
Rollover Designation	Yes
Legacy Reference	Designation 85, Auckland Council District Plan (Franklin Section) 2000
Lapse Date	Given effect to (i.e. no lapse date)

Purpose

Electricity transmission - Bombay electricity substation, line connections and associated infrastructure.

Conditions

1. The New Feeder Project shall be undertaken in general accordance with the plans and information submitted within the 'Alteration of Bombay Electricity Substation Designation Conditions', dated 16 July 2025.

An Outline Plan for the New Feeder Project shall not be required and is waived, unless there are more than minor changes to the plans and information referenced above, in which case the requiring authority shall clearly identify these changes and Auckland Council may then require an Outline Plan be submitted in accordance with Section 176A of the RMA.

Cultural / Spiritual

2. If any urupā, traditional sites, taonga (significant artefacts), or kōiwi (human remains) are exposed during site works, then the following procedures shall apply:
 - a. Works in the immediate vicinity of the site that has been exposed shall cease;
 - b. The site supervisor shall immediately secure the area in a way that ensures that any remains or artefacts are untouched;
 - c. The site supervisor shall notify representatives of relevant tāngata whenua, Heritage New Zealand – Pouhere Taonga, the Auckland Council and, in the case of human remains, the New Zealand Police; and
 - d. the notification in (c) above shall allow such persons being given a reasonable time to record and recover archaeological features discovered before work may recommence on the exposed site.

Construction and Maintenance Noise

3. All the noise from any construction work activity must be measured, assessed, and managed in accordance with the requirements of NZS6803:1999 Acoustics–Construction Noise. Construction work is defined in New Zealand Standard NZS6803:1999 Acoustics – Construction noise.

4. A Construction Noise and Vibration Management Plan (CNVMP) must be submitted to Auckland Council for certification prior to commencement of any construction works that cannot comply with the guideline upper limits of New Zealand Standard NZS6803:1999 Acoustics–Construction Noise. The objective of the CNVMP is to identify and require the adoption of the best practicable option to minimise construction noise and vibration effects as far as practical.
5. The CNVMP required by condition 4 must be submitted to the Council's Consents Manager, for certification a minimum of twenty (20) working days prior to commencement of the works. Construction works must not commence until certification has been received in writing from the Council. Certification must not be unreasonably withheld.

Vibration

6. Vibration from all construction activities shall not exceed the limits of, and shall be measured and assessed in accordance with, German Standard DIN 4150-3 (1999-02) Structural Vibration – Effects of Vibration on Structures.

Hazardous Substances

7. Any new part of the facility containing oil shall be designed to comply with Transpower's Oil Spill Management Policy (TPG:GS.54.01).

Radio Frequency Interference

8. Any new works or equipment shall be designed to comply with NZS 6869:2004 Limits and Measurement Methods of Electromagnetic Noise from High-Voltage a.c. Power Systems, 0.15 to 1000 MHz.

Earth Potential Rise

9. Any new substation earth grids shall be designed, built, and tested to ensure electrical safety at or beyond the designation boundary in accordance with Transpower Standard TP.DS.52.01, Issue 3, May 2016.

Light Spill

10. Any new exterior lighting shall be designed to comply with:
 - a. AS/NZS 1158.3.1:2020 Lighting for Roads and Public Spaces Part 3.1; and
 - b. Transpower's guidelines and information for switchyard and grounds lighting TP.DS 40.03 and
 - c. AS/NA 4282:2019, Control of Obtrusive Effects of Outdoor Lighting.

Operational Noise

11. Cumulative noise from the substation (including but not limited to existing or new transformers, necessary fans and circuit breakers) must be designed and operated to ensure that the following noise limits are not exceeded.

Zone	Time	Noise Limit	Location
Residential zoned sites	0700-2200 hours	55 dB L _{Aeq,15min}	At or within the boundary
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Noise must be measured in accordance with New Zealand Standard NZS 6801:2008 Acoustics – Measurement of Environmental Sound and assessed in accordance with NZS 6802:2008 Acoustics – Environmental Noise apart from the application of an adjustment for noise containing special audible characteristics which must not be applied to noise at the 63 Hz and 125Hz centre frequency octave bands.

Landscaping and visual amenity

12. The requiring authority shall ensure that a planted landscaping strip with a minimum width of 10m is established and maintained along the eastern and southern boundaries, and part of the northern and western boundaries, of Lot 1 DP 162890 in accordance with Figure 6 – Mitigation Principles prepared by Isthmus, June 2021.
13. The landscaping shall be implemented as soon as practicable in the planting season following inclusion of the designation in the Auckland Unitary Plan.
14. The landscaping shall be maintained regularly and kept in a tidy condition, including replacement if any planting dies or becomes over mature. The replacement of any vegetation shall be no later than the next planting season (i.e. April to September) following discovery of the need for replacement.
15. Any landscaping required by Condition 12 above may be trimmed or removed where:
 - a) It is necessary in order to remove or reduce any risk to the maintenance or operational integrity of the substations; or
 - b) Future development of National Grid facilities on the site necessitates the removal of any landscaping.
16. If development of National Grid facilities on the site necessitates the removal of any landscaping (such as for new line connections), the Outline Plan submitted for these works shall address how the adverse visual effects of any landscaping removal will be avoided, remedied or mitigated.
17. A 15 m wide height restriction zone shall be maintained along the eastern and southern boundaries, and part of the northern and western boundaries, of Lot 1 DP 162890 in accordance with Figure 6 – Mitigation Principles prepared by Isthmus, June 2021. The height restriction zone extends 15 m into the site from the edge of the planted landscaping strip as shown on shown on Figure 6.
18. Within the height restriction zone, a height limit of 15 m applies to any new substation structures and buildings in accordance with this designation (i.e. any new substation structures and buildings that were not existing as at 31 May 2021). For the avoidance of

doubt, this height limit does not apply to transmission lines and transmission line support structures.

Construction Traffic Management Plan

19. At least 20 working days prior to the commencement of any significant construction activities on the site, Transpower shall submit a Construction Traffic Management Plan (CTMP) to the Council for certification. The CTMP shall detail traffic management and mitigation measures for delivery of substation equipment and materials and general construction activities including, but not limited to, restricting over dimension loads and otherwise limiting heavy vehicle movements wherever practicable to outside of Bombay School peak drop off and pick up times (being 8:15 to 9 am and 2:30 to 3:15 pm Monday to Friday, excluding school and public holidays).

In relation to the delivery of over dimension loads including transformers, the CTMP shall detail traffic management and mitigation measures within the vicinity of the Bombay Substation (i.e. Barber and Paparata Roads).

Advice Note

1. Any new works or equipment means those works which were not existing prior to the notification of the Auckland Unitary Plan.
2. The requiring authority will obtain an over dimension/ overweight load permit as required from Waka Kotahi NZ Transport Authority with input from Auckland Transport.
3. Should any proposed earthworks result in the identification of any previously unknown sensitive materials (i.e. archaeological sites), the requirements of E11.6.1 Land disturbance – Regional Accidental Discovery Rule (as at 14 May 2021 or any subsequent update to this rule) of the Auckland Unitary Plan (Operative in part) shall be complied with.
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Attachments

Schedule of Legal Descriptions

Parcel ID	
Lot 3 DP 439460	
Lot DP 162890	

Landscape strip and height restriction area map

