SYDNEY METRO - WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

Site Audit Report and Site Audit Statement – Bringelly Service Facility

Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works

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1	20/12/24	Ramboll	Ramboll	Ramboll
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Signature				

Details of Revision Amendments

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The Project Director is responsible for ensuring that this plan is reviewed and approved. The Project SMWSA CPBG Director is responsible for updating this plan to reflect changes to construction, legal and other requirements, as required.

Amendments

Any revisions or amendments must be approved by the Project Director and/or client before being distributed/implemented.

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CPB Contractors Pty Ltd and Ghella Pty Ltd
Prepared by
Ramboll Australia Pty Ltd
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TO-095-A4

SITE AUDIT REPORT
BRINGELLY SERVICES FACILITY SBT WORKS, SYDNEY METRO WESTERN SYDNEY AIRPORT

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20 December 2024

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SITE AUDIT REPORT - BRINGELLY SERVICES FACILITY SBT WORKS, SYDNEY METRO WESTERN SYDNEY AIRPORT

I have pleasure in submitting the Site Audit Report for the subject site. The Site Audit Statement, produced in accordance with the NSW *Contaminated Land Management Act 1997*, is included as Appendix B of the Site Audit Report. The Audit was commissioned by CPB Contractors Pty Ltd and Ghella Pty Ltd (CPBG) to assess the suitability of the site for its intended commercial/industrial land use (operation of a Sydney Metro services facility).

The Audit was initiated to comply with requirements of Critical State Significant Infrastructure (CSSI) approval 10051, issued on 23 July 2021 by the Minister for Planning and Public Spaces, and is therefore a statutory audit.

Thank you for giving me the opportunity to conduct this Audit. Please call me on 9954 8100 if you have any questions.

Yours faithfully,
Ramboll Australia Pty Ltd

[redacted]
EPA Accredited Site Auditor 1505

cc: NSW EPA – Statement only
Liverpool City Council

Ramboll Australia Pty Ltd.
ACN 095 437 442
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Measures

%	per cent
µg/L	Micrograms per Litre
ha	Hectare
km	Kilometres
L	Litre
m	Metre
m^2	Square Metre
m^3	Cubic Metre
mAHD	Metres Australian Height Datum
mbgl	Metres below ground level
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Litre
mm	Millimetre
ppm	Parts Per Million
t	Tonne

General

ABC	Added Background Concentration
ACL	Added Contaminant Limits
ACM	Asbestos Containing Material
ADE	ADE Consulting Group
ADWG	Australian Drinking Water Guidelines
AEC	Areas of Environmental Concern
AF	Asbestos Fines
ANZG	Australian & New Zealand Guidelines
ASS	Acid Sulphate Soil
ANZECC	Australian and New Zealand Environment and Conservation Council
BSF	Bringelly Services Facility
BTEX	Benzene, Toluene, Ethylbenzene & Xylenes
CCME	Canadian Council of Ministers of the Environment
CLM Act	NSW Contaminated Land Management Act 1997
COC	Chain of Custody
Council	Liverpool City Council
CPBG	CPB Contractors Pty Ltd and Ghella Pty Ltd
CSM	Conceptual Site Model
CSSI	Critical State Significant Infrastructure
CT	Certificate of Title
DGB	Densely Graded Base
DO	Dissolved Oxygen
DQI	Data Quality Indicator
DQO	Data Quality Objective
DSI	Detailed Site Investigation
EC	Electrical Conductivity
EI Australia	Environmental Investigations Australia Pty Ltd
EIL	Ecological Investigation Levels
ENM	Excavated Natural Material
EPA	Environment Protection Authority (NSW)
EPL	Environment Protection Licence
ESL	Ecological Screening Levels
FA	Fibrous Asbestos
GMRRW	Guidelines for Managing Risks in Recreational Water
GSW	General Solid Waste
HBM	Hazardous Building Material
HEPA	Heads of EPAs Australia and New Zealand
HIL	Health Investigation Level
HSL	Health Screening Level
IAA	Interim Audit Advice

JBS&G	JBS&G Australia Pty Ltd
LCS	Laboratory Control Sample
LEP	Local Environment Plan
Metals	As: Arsenic, Cd: Cadmium, Cr: Chromium, Cu: Copper, Ni: Nickel, Pb: Lead, Zn: Zinc, Hg: Mercury
ML	Management Limits
MS	Matrix Spike
NATA	National Association of Testing Authorities
NC	Not Calculated
ND	Not Detected
NEPC	National Environmental Protection Council
NEPM	National Environment Protection Measure
NL	Non-Limiting
n	Number of Samples
OCPs	Organochlorine Pesticides
OPPs	Organophosphorus Pesticides
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PFAS	Per- and Poly-fluoroalkyl substances
PFHxS	Perfluorohexane Sulfonate
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonate
pH	A measure of acidity, hydrogen ion activity
PID	Photoionisation Detector
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
Ramboll	Ramboll Australia Pty Ltd
RAP	Remediation Action Plan
RPD	Relative Percent Difference
RRE	Resource Recovery Exemption
RRO	Resource Recovery Order
RSL	Regional Screening Level
SAQP	Sampling Analysis Quality Plan
SAR	Site Audit Report
SAS	Site Audit Statement
SBT	Station Boxes and Tunnelling
SMWSA	Sydney Metro – Western Sydney Airport
SWL	Standing Water Level
UFP	Unexpected Finds Protocol
VOCs	Semi Volatile Organic Compounds
TEQ	Toxic Equivalence Quotient
TfNSW	Transport for New South Wales
TRHs	Total Recoverable Hydrocarbons
TTMP	Tetra Tech Major Projects Pty Ltd
VENM	Virgin Excavated Natural Material
VOCs	Volatile Organic Compounds
VR	Validation Report
WH&S	Workplace Health & Safety
-	On tables is "not calculated", "no criteria" or "not applicable"

1. INTRODUCTION

1.1. Audit Details

A site contamination audit has been conducted in relation to the Bringelly Services Facility (the site), which forms part of the Sydney Metro – Western Sydney Airport (SMWSA) rail project. The site is located at 40 Derwent Road, Bradfield NSW. The Audit boundary is illustrated by the red outline in **Attachment 1, Appendix A**.

The Audit was conducted to provide an independent review by an EPA Accredited Auditor of whether the land is suitable for any specified use or range of uses, i.e. a "Site Audit" as defined in Part 1 Clause 4 (1) (definition of a 'site audit' (b) (iii)) of the NSW *Contaminated Land Management Act 1997* (the CLM Act).

The Audit was initiated to comply with requirements of Critical State Significant Infrastructure (CSSI) approval 10051 issued on 23 July 2021 by the Minister for Planning and Public Spaces for construction of new stations, tunnels, bridges, viaducts, and rail and associated ancillary infrastructure along the SMWSA rail alignment from the existing Sydney Trains suburban T1 Western Line (at St Marys) in the north and the Aerotropolis (at Bringelly) in the south. Condition E96 of the CSSI requires a site audit as follows:

> *"A Section A1 or Section A2 Site Audit Statement (accompanied by an Environmental Management Plan) and its accompanying Site Audit Report, which state that the contaminated land disturbed by the work has been made suitable for the intended land use, must be submitted to the Planning Secretary and the Relevant Council(s) after remediation and before the commencement of operation of the CSSI."*

The Audit was initiated to comply with condition E96 of the CSSI approval and is therefore a statutory audit.

This site audit report (SAR) and accompanying site audit statement (SAS, provided in **Appendix B**) have been prepared to comply with this condition. Station Boxes and Tunnelling (SBT) Works have been completed, including preparation of the site for use as a services facility to support construction activities for the underground tunnel portions of the SMWSA and included a shaft, as well as temporary construction facilities, a water treatment plant and amenities. Evaluation of the CSSI conditions of consent is summarised in **Section 13.3**.

Details of the Audit are:

Requested by:	[redacted] on behalf of CPB Contractors Pty Ltd and Ghella Pty Ltd (CPBG)
Request/Commencement Date:	9 May 2022
Auditor:	[redacted]
Accreditation No.:	1505
Audit No.:	TO-095-A4

1.2. Project Background

The SMWSA rail project includes the construction of new stations, a train stabling and maintenance facility, rail infrastructure facilities, tunnels, bridges, viaducts and associated ancillary infrastructure. Sydney Metro engaged the joint venture of CPBG for the design and construction of the SBT Works. A follow-on contractor has been engaged to complete rail infrastructure.

Construction activities at the site, also known as preparatory construction activities, included establishment of temporary facilities such as offices, amenities, car parking and a water treatment plant, and piling and shaft excavation to approximately 30 metres below ground level (mbgl) or 42.5 m Australian Height Datum (AHD). The shaft will be tanked upon completion.

A detailed site investigation (DSI) was completed prior to the commencement of preparatory construction activities. It focused on the assessment of soil and groundwater conditions in the eastern portion of the site where construction activities would occur. While the DSI did not identify a requirement for remediation, a remediation action plan (RAP) was prepared to document procedures for managing potential asbestos impacted materials, and controls for management of surplus spoil and material importation. The ultimate objective of the RAP was to retain the suitability of the site, from a contamination perspective, throughout the preparatory construction works. Preparation of the DSI and the RAP was required under a Deed (*Sydney Metro (2022) Sydney Metro - Western Sydney Airport, Station Boxes and Tunnelling Works Design and Construction*) between Transport for New South Wales (TfNSW) and CPBG.

1.3. Interim Audit Advice

The Auditor previously reviewed the DSI and the RAP and documented the review outcomes in interim audit advice (IAA) letters. IAAs have been prepared for other sites within the SMWSA alignment, hence IAA numbers are not sequential. The following IAAs relate to the site:

- 'Interim Audit Advice Letter No.4 – Review of Detailed Site Investigation, Proposed Sydney Metro Western Sydney Airport Bringelly Services Facility, Bringelly NSW', 15 September 2022, Ramboll Australia Pty Ltd (Ramboll) (*IAA#4*).
- 'Interim Audit Advice Letter No.5 – Proposed Preparatory Works, Proposed Sydney Metro Western Sydney Airport, Bringelly Services Facility, Bringelly NSW', 23 September 2022, Ramboll (*IAA#5*).
- 'Interim Audit Advice Letter No.12 – Review of Remediation Action Plan, Sydney Metro Western Sydney Airport Bringelly Services Facility, Bringelly NSW', 27 October 2022, Ramboll (*IAA#12*).

The IAAs and reports reviewed therein are referenced in this Site Audit Report (SAR) where appropriate. The IAAs are attached as **Appendix C** to this SAR.

1.4. Scope of the Audit

The scope of work undertaken for the IAAs included:

- Review of the following reports:
  - 'Bringelly Sampling Analysis Quality Plan, Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works', 25 July 2022 (and an earlier version dated 1 April 2022), Tetra Tech Major Projects Pty Ltd (TTMP) (*the SAQP*).
  - 'Technical Memorandum: Preliminary Soil Bringelly', 2 August 2022 (and an earlier version dated 21 July 2022), TTMP (*the Memo*).
  - 'Bringelly Services Facility Detailed Site Investigation', 7 September 2022 (and earlier versions dated 2 August 2022 and 26 August 2022), TTMP (*the DSI*).
  - 'Material Classification Assessment: Bringelly Services Facility Shaft', 7 October 2022, TTMP (*the Shaft Waste Classification*).
  - 'Bringelly Services Facility Remedial Action Plan, Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works' (Rev A04), 21 October 2022 (and earlier versions dated 13 September 2022 and 14 October 2022), TTMP (*the RAP*).
- Review of management plans prepared by CPBG for the SMWSA rail project, including:
  - 'Asbestos Management Plan, Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Work' Revision A, 2 February 2022, CPBG (*the Rev A AMP*).
  - 'NSW (Off-Airport) Soil and Water Management Sub-Plan, Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works' (Revision A), 19 May 2022, CPBG (*the Rev A Sub-Plan*).

- Site visits by the Auditor on 11 October 2022 and 11 December 2023.
- Discussions with CPBG, and with TTMP who undertook investigations and prepared the RAP.

The scope of work undertaken in completing the current audit included:

- Review of the following reports:
  - 'Sydney Metro – Western Sydney Airport Technical Paper 8 Contamination', dated October 2020, M2A (*the Technical Paper*).
  - 'Bringelly Validation Report', 2 December 2024 (and an earlier version dated 23 September 2024), JBS&G Australia Pty Ltd (JBS&G) (*the VR*).
- Review of the updated management plans prepared by CPBG, including:
  - 'Asbestos Management Plan, Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Work' Revision C, 22 February 2024, CPBG (*the Rev C AMP*).
  - 'NSW (Off-Airport) Soil and Water Management Sub-Plan, Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works' (Revision 2), 15 August 2024, CPBG (*the Rev 2 Sub-Plan).*
- A site visit by the Auditor on 22 October 2024.
- Discussions with CPBG, and with JBS&G who undertook the validation works.

The Auditor has reviewed the key documents against the guidelines made or approved under Section 105 of the CLM Act and other relevant documents, including:

- NHMRC and Natural Resource Management Ministerial Council of Australia and New Zealand (2011) *'Australian Drinking Water Guidelines'* (ADWG).
- National Environment Protection Council (NEPC) *'National Environment Protection (Assessment of Site Contamination) Measure 1999'*, as Amended 2013 (NEPM).
- NSW EPA (2014) *'Waste Classification Guidelines, Part 1: Classifying waste'*.
- NSW EPA (2015) *'Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997'*.
- NSW EPA (2017) *'Guidelines for the NSW Site Auditor Scheme (3rd Edition)'*.
- Australian and New Zealand Guidelines (ANZG) (2018) *'Guidelines for Fresh and Marine Water Quality'*.
- Australia and New Zealand Heads of EPAs (HEPA 2020) *'PFAS National Environmental Management Plan, Version 2.0'*.
- NSW EPA (2020) *'Contaminated Land Guidelines, Consultants Reporting on Contaminated Land'*.
- Chapter 4 Remediation of Land in the Resilience and Hazards State Environment Planning Policy (SEPP) (2021) (SEPP R&H, formerly known as SEPP 55) and NSW Department of Urban Affairs and Planning and NSW EPA (1998) *'Managing Land Contamination, Planning Guidelines SEPP 55 – Remediation of Land'*.
- NSW EPA (2022) *'Contaminated Land Guidelines, Sampling design part 1 – application'* and *'Contaminated Land Guidelines, Sampling design part 2 – interpretation'.*

The Auditor notes that the DSI referenced preliminary intrusive investigations conducted by others circa 2021. As the full investigation reports were not sighted, the findings of these preliminary investigations (which were consistent with the results of the DSI) have been excluded from the current audit.

2. SITE DETAILS

2.1. Location

The site details are as follows:

Street address:	40 Derwent Road, Bradfield
Identifier:	Part Lot 2502 in Deposited Plan (DP) 1282956
Local Government:	Liverpool City Council (Council)
Zoning:	ENT: Enterprise[1]
Owner:	TfNSW
Site Area:	Approximately 3.3 hectares (ha)

The site locality and surveyed site boundaries are shown on **Attachment 1** and **Attachment 2**, **Appendix A**, respectively.

The boundaries of the site are well defined by adjoining properties to the north, south and west and by Derwent Road to the east. A fence defines the internal boundary around the existing dam, excluding this area from the site.

2.2. Adjacent Uses

The site is located within an area of predominantly residential and agricultural land uses. The surrounding land uses include:

North: Landscape supply business (Go Gro Organics). Further north are rural residential and some small-scale agricultural land uses.

East: Derwent Road, beyond which are rural residential and agricultural land uses.

South: Rural residential and agricultural land uses.

West: Commercial premises (e.g., Porter Hire Bringelly and JD Concrete), followed by rural residential and agricultural land uses.

A dam is located in the central portion of Lot 2502 and is not part of the site. It separates the eastern and western parts of the site and is considered the nearest surface water receptor.

Several dams are also present in the surrounding area. These dams, and Badgerys Creek, including its tributaries located to the north (approximately 50 m), west (approximately 80 m) and east (approximately 350 m), are also potential environmental receptors.

2.3. Site Condition – Before Construction

TTMP inspected the site on 22 March 2022 when preparing the SAQP. The inspection was limited to areas without dense grass cover. Observations from the inspection included:

- The topography of the site sloped gently down to the north.
- Former site structures, including a residential house and sheds, had been removed. The footprints of the former structures and surrounding areas were characterised by bare soil.
- Fibre cement debris, suspected of containing asbestos, was observed in multiple locations within and around the footprints of the former site structures.
- The dam, which is part of Lot 2502, was situated within a fenced off area.
- General refuse such as cardboard and scrap wood was observed, however, there were no visual and olfactory indicators of contamination.

[1] Based on State Environmental Planning Policy (Precincts-Western Parkland City) 2021

The indicative locations of the former residential house and sheds in the eastern portion of the site are shown on **Attachment 3**, **Appendix A**.

2.4. Current Site Condition – After Preparatory Construction and Validation

JBS&G and the Auditor completed a site inspection on 22 October 2024.

The following observations were reported by JBS&G in the VR:

- Access to the site is via a driveway from Derwent Road on the eastern boundary of site.
- The site is split into two areas (east and west) with an access road along the southern boundary of site connecting the two areas.
- The eastern portion of the site consisted of a site shed, car park, shaft excavation, workshops, storage areas, stockpile areas, a sediment pond and a water treatment plant.
- The western portion of site consisted of a storage/laydown area and a large stockpile covered in geofabric.

In addition to these observations, the Auditor notes the following:

- Several stockpiles, including crushed concrete, were present on the eastern portion of the site. These stockpiled materials were being handled by CPBG at the time of the inspection.
- Overgrown grass was present along the western boundary of the site.

2.5. Proposed Development

The services facility has been developed by CPBG to support construction activities for the underground tunnel portions of the SMWSA and included a shaft, as well as temporary construction facilities, a water treatment plant and amenities. It is understood that CPBG will hand over the site to another entity for ongoing construction activities for the underground tunnel portion of the SMWSA.

According to the DSI and SMWSA rail project webpage, the site will not be publicly accessible and will provide fresh air ventilation for the tunnel section between Western Sydney International Airport to Bringelly, and emergency exits.

For the purposes of this Audit, the 'commercial/ industrial' land use scenario has been assumed.

3. SITE HISTORY

The site history was assessed in the Technical Paper based on available historical aerial images and review of NSW EPA records.

The Auditor has summarised information relating to the site history as follows:

- The site was privately owned dating back to at least 1955.
- There were no historical business directory records for the site.
- The site structures (sheds and residential dwelling) were constructed progressively between 1970 and 1994. The site layout remained largely unchanged since 1994.
- There were no NSW EPA regulated sites or notified sites within 1 kilometre (km) of the site.
- 320-400 Badgerys Creek Road located approximately 600 m northeast of the site, was operated under an environment protection licence (EPL) 20498. Scheduled activities under the EPL included waste storage, recovery of general waste and extractive activities.
- A clean up notice (1529870) was issued by the NSW EPA on 5 June 2015 for land at 145 Mersey Road, located directly southwest of the site, for unlawful processing and storage of waste on the premise. An internet search by the Auditor notes that 145 Mersey Rd is now operated by Porter Hire Bringelly, which sells and rents heavy equipment.
- There were no NSW EPA per- and polyfluoroalkyl substances (PFAS) investigation sites within 2 kms of the site.

3.1. Auditor's Opinion

In the Auditor's opinion, the site history is broadly understood and adequate for identification of contaminants of concern (**Section 4**). The Auditor considers that the site has been predominantly used for rural residential purposes, potentially including small scale agricultural activities. The Auditor is satisfied that there is no evidence of past uses that have significant potential to contaminate the site.

Previous land uses with the highest potential to cause contamination include hazardous building materials (HBM) associated with the former site buildings/structures, use and onsite stockpiling of fill soils with unknown origins, and use/storage of chemicals (anticipated in small volumes if any) such as pesticides and herbicides.

4. CONTAMINANTS OF CONCERN

The Technical Paper provided a list of areas of environmental concern (AECs) and associated contaminants of concern on various project sites along the proposed the SMWSA rail alignment. The AEC identified on the site is summarised in **Table 4.1**.

Table 4.1: AEC and Associated Contaminants of Concern

AEC Identification	Activity	Potential Contaminants
45	Areas of dumped wastes and potential HBM.	Heavy metals, total recoverable hydrocarbons (TRH), polycyclic aromatic hydrocarbons (PAHs) and asbestos.

The location of the identified AEC45 is shown on **Attachment 4**, **Appendix A**.

4.1. Auditor's Opinion

The Auditor considers that the analyte list identified in the Technical Paper adequately reflects the site's history and condition.

In addition to the potential contaminants identified, the site soil and groundwater samples from the DSI were analysed for PFAS, and nutrients (including ammonia and nitrate) were analysed in groundwater samples.

5. STRATIGRAPHY AND HYDROGEOLOGY

5.1. Stratigraphy

TTMP reviewed geological maps and reported that the site is underlain by Bringelly Shale of Wianamatta Group, which is described as shale, carbonaceous claystone, laminite, lithic sandstone, with rare coal.

TTMP advanced 6 x 2 m deep test pits, 27 x 1 m deep shallow test pits and 8 boreholes (to depths of between 14 and 50 m). Among the 41 intrusive investigation locations completed, 36 were within the construction footprint (the 2 ha area comprising the eastern part of the site) and five were outside of the construction footprint. The intrusive locations are shown on **Attachment 5**, **Appendix A**.

A review of available borehole logs indicated that the subsurface profile in these locations generally comprised limited fill (clay, gravelly clay and sandy clay topsoil/fill to up to 0.4 mbgl), underlain by natural soils (clay to depths of between 2.2 mbgl and 3.8 mbgl) and bedrock (predominantly siltstone with some sandstone).

TTMP reviewed the Atlas of Australian Acid Sulfate Soil (ASS) compiled by CSIRO in the DSI. The review indicates that the site is located in an area with Extremely Low Probability of Occurrence of ASS.

5.2. Hydrogeology

The VR reported that the nearest registered groundwater bore is located approximately 1 km to the northeast of the site and was installed at approximately 3 mbgl for groundwater monitoring purposes.

In the DSI, 5 groundwater monitoring wells (SBT-GW-4002, SBT-GW-4003, SBT-GW-4005, SBT-GW-4020 and SBT-GW-4022) were installed to depths of between 13 mbgl and 20 mbgl. The well locations are shown on **Attachment 5**, **Appendix A.**

The measured depth to groundwater varied from 3.2 m below top of casing (mbTOC) at SBT-GW-4020 to 6.6 mbTOC at SBT-GW-4022, indicating a slight southerly groundwater gradient. However, the DSI noted that these groundwater monitoring wells were installed across different formations and at slightly different screen intervals, which may have influenced the interpretation of the groundwater flow direction. TTMP considered the north-northwesterly groundwater flow direction presented in the Hydrogeological Interpretative Report (TTMP, 2022[2]) to be more representative, as it was based on a broader network of groundwater monitoring wells positioned within and around the site regionally.

The DSI included field records of groundwater parameters collected during groundwater sampling. The parameters indicated that the groundwater beneath the site could be described as fresh to brackish with near-neutral pH values and low to moderate levels of dissolved oxygen (DO) and redox values.

5.3. Auditor's Opinion

The Auditor considers that the site stratigraphy and hydrogeology are sufficiently well known for the purpose of the current audit.

The shallow formation underlying the site is of low permeability and therefore the potential for significant groundwater contamination or migration of contamination is low. This is supported by the groundwater sampling results (**Section 9**).

[2] The report was not sighted or reviewed by the Auditor.

6. EVALUATION OF QUALITY ASSURANCE AND QUALITY CONTROL

The Auditor has assessed the overall quality of the data by review of the information presented in the referenced reports, supplemented by field observations. The data sources are summarised in **Table 6.1**.

Table 6.1: Summary of Investigations

Stage of Works	Field Data	Analytical Data
DSI (TTMP, 2022) *Fieldwork date: April 2022 to July 2022.*	2 surficial soil samples. 33 test pits. 8 boreholes, 5 were converted into groundwater monitoring wells.	Soil: Metals, TRH/BTEX, PAHs, phenols, organochlorine pesticides (OCPs), organophosphorus pesticides (OPPs), polychlorinated biphenyls (PCBs), VOCs, SVOCs, PFAS, asbestos (presence/absence) and asbestos (% w/w ACM >7 mm and asbestos fines/fibrous asbestos (AF/FA)). Groundwater: TRH, BTEX, metals, PAHs, phenols, OCPs, OPPs, VOC, SVOCs, PFAS, PCBs, major ions and nutrients.

The Auditor's assessment of data quality follows in **Table 6.2** and **Table 6.3**.

Table 6.2: QA/QC – Sampling and Analysis Methodology Assessment

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
Data Quality Objectives (DQO) The DSI defined specific DQOs in accordance with the seven-step process outlined in Schedule B2 of NEPM (2013). The following decisions were identified in the DQOs: • Is soil and groundwater contamination present at the site in consideration of the data gaps/uncertainties identified? • Is groundwater contamination present in the vicinity of the site which may be drawn into the excavation during construction? • If contamination is present, how likely is it to be disturbed during construction works? • Are potential sources of contamination identified likely to represent a constraint to the project with respect to construction and spoil management in relation to contamination? • Are remediation actions or management measures required to manage risks to human health and the environment related to contamination? • Is asbestos present which requires management during construction? And if asbestos is present, what is the condition of the material (i.e., bonded and/or friable)? If asbestos in soils is identified, is additional investigation required to assess potential risks to human health during construction, or can risks be controlled through implementation of an asbestos management plan and procedures outlined in SafeWork NSW codes of practice for asbestos related works?	The identified DQOs are considered appropriate for the investigation conducted.
Sampling pattern, locations and density *Soil:* The investigation included both grid-based sampling for site coverage, and targeted sampling which focused on the identified AEC and footprints of the former residential dwelling and sheds. Fill soils, as well as the underlying natural soils and bedrock, were sampled. A total of 36 investigation locations were completed within the eastern portion of the site (~2 ha), where preparatory construction activities were planned. An additional five locations were	In the Auditor's opinion, soil sample locations were positioned to provide systematic coverage with a skew to target areas with a higher likelihood of impact, which is considered to be appropriate. The overall soil sampling density meets the minimum number of samples for systematic sampling recommended in the EPA (2022) *Sampling design part 1 – application* (40

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
completed across the remainder of the site (~1.3 ha), resulting in an overall sampling density of 41 locations over approximately 3.3 ha. *Groundwater:* Three groundwater monitoring wells (SBT-GW-4002, SBT-GW-4003 and SBT-4020) were installed along the northern site boundary, and two additional wells (SBT-GW-4005 and SBT-GW-4022) positioned on the southern site boundary. These wells were also located near the proposed tunnel alignment.	sample locations for a site with a size of 3 ha). Based on the inferred groundwater flow direction (north/northwesterly, **Section 5.2**), the placement and density of onsite wells are considered adequate to assess groundwater conditions both migrating onto and off the site and evaluate the potential risks to on and offsite receptors. The wells are also located near the proposed tunnel alignment, allowing groundwater monitoring data to inform the quality of the groundwater that may be extracted during the planned shaft excavation. Overall, the sampling pattern, locations and density completed are considered to be adequate.
Soil Sample depths Soil samples were collected and analysed from a range of depths, with the primary sampling interval being from surface to up to 1 mbgl. The maximum depth of investigation was 50 mbgl and the maximum depth of sampling was approximately 34 mbgl.	In the Auditor's opinion, the soil sampling depths are appropriate based on the expected top-down contamination mechanism and are adequate to characterise the fill and natural soils on the site. The maximum sampling depth (34 mbgl) is consistent with the depth of the planned shaft excavation (30 mbgl).
Groundwater monitoring well construction The groundwater monitoring wells were installed at depths of between 13 and 20 mbgl and fitted with 9 to 12 m long well screens. The wells were constructed of 50 mm uPVC. The screened sections were placed in gravel. The remaining well annulus was backfilled with bentonite followed by cement grout or bore cuttings to the ground surface.	In the Auditor's opinion the well construction is acceptable. The well installation depths are shallower than the planned shaft excavation (30 mbgl). This is considered to be acceptable, as groundwater is less likely to be impacted at depths and the data from the existing monitoring network is expected to capture the worst-case scenario, allowing for the development of adequate management measures for the dewatering works during the planned shaft excavation.
Sample collection method *Soil*: Intrusive borehole locations were sampled directly from the augers. Test pit samples were collected by hand directly from the excavator bucket. Asbestos samples (sample weight varied between 56 and 411 grams (g)) were collected for analysis for asbestos identification and/or AF/FA. *Groundwater*: The groundwater monitoring wells were developed with a bailer/pump and were sampled using dedicated high-density polyethylene (HDPE) Hydrosleeves approximately one week after their deployment.	The majority of the investigation locations were undertaken by test pits, which allows for a better visual assessment of the soil profile for asbestos which was the primary contaminant of concern. Sample collection from the auger flights and test pits can result in loss of volatiles. Given volatile organics are unlikely to be the key contaminants at the site, this deficiency is not considered to be of great significance. Overall, the sample collection method was found to be acceptable.
Decontamination procedures The excavator and drill rigs were inspected to confirm that they were clean prior to the commencement of drilling. A rinsate sample was collected from the drilling equipment (e.g., auger head) immediately prior to the commencement of drilling. Reusable sampling equipment was decontaminated prior to the first use each day, and between each sampling location. Decontamination procedures included: • For equipment used in soil sampling, adhered materials (such as soil, vegetation) were removed by gloved hand, paper towel or scrubbing brush. • Equipment was washed in a bucket of potable water with Liquinox detergent.	Acceptable.

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
• The equipment was rinsed thoroughly in a second bucket containing deionised water. • The equipment was spray rinsed with potable water. Cleaned equipment and samples were handled with clean disposable nitrile gloves. Equipment was stored after decontamination and prior to use in clean polypropylene bags to ensure the cleaned equipment did not come into contact with anything that may introduce contamination to the equipment.	
Sample handling and containers Samples were placed into appropriate sampling containers provided by the laboratory and chilled during storage and subsequent transport to the laboratories. Samples for PFAS analysis were placed in PFAS specific sample containers provided by the laboratory. Groundwater samples for dissolved metals analysis were filtered in the field using 0.45 micron (µm) disposable filters.	Acceptable.
Chain of Custody (COC) Completed COC forms were provided in the report.	Acceptable.
Detailed description of field screening protocols *Soil:* Field screening for volatiles was undertaken using a pre-calibrated photoionisation detector (PID). *Groundwater:* Field parameters were measured during well sampling.	Acceptable.
Calibration of field equipment Calibration certificates from the equipment supplier were provided.	Acceptable.
Sampling logs Soil logs are provided indicating sample depth, PID readings and lithology. Groundwater field sampling records were provided and/or tabulated in the investigation reports, indicating standing water level (SWL), field parameters, methodology and observations.	Acceptable.

Table 6.3: QA/QC – Field and Lab Quality Assurance and Quality Control

Field and Lab QA/QC	Auditor's Opinion
Field quality control samples Field quality control samples including trip blanks, trip spikes, rinsate blanks, field blanks, intra-laboratory and inter-laboratory duplicates were undertaken.	Acceptable.
Field quality control results The results of field quality control samples were generally within appropriate limits except for some RPD outliers between the primary and the corresponding intra and/or inter-laboratory duplicate. These RPD outliers were likely due to the heterogeneity of the soil matrix.	Acceptable.
NATA registered laboratory and NATA endorsed methods Laboratories used included: ALS and Eurofins. Laboratory certificates were NATA stamped.	Acceptable.
Analytical methods Analytical methods were included in the laboratory test certificates. Both ALS and Eurofins provided brief method summaries of in-house NATA accredited methods used based on USEPA and/or APHA methods (excluding asbestos) for extraction and analysis in accordance with the NEPM (2013). Asbestos identification was conducted using polarised light microscopy with dispersion staining by method AS4964-2004	Acceptable.

Field and Lab QA/QC	Auditor's Opinion
Method for the Qualitative Identification of Asbestos Bulk Samples.	
Holding times TTMP reported some analysis was conducted outside the recommended holding times. TTMP further noted that these holding time breaches were unlikely to have significantly impacted the overall integrity of the analytical results, particularly given the samples were in chilled storage within the laboratory.	Overall, in the context of the dataset reported and the inferred site history, the identified holding time outliers are not significant, and the data set are of adequate quality for the purpose of the current audit.
Practical Quantitation Limits (PQLs) *Soil:* PQLs (except asbestos) were lower than the threshold criteria for the contaminants of concern. *Asbestos:* The NATA approved limit of detection for asbestos in soil was 0.01% w/w although NEPM (2013) analysis were reported to 0.001% w/w for AF/FA. *Groundwater:* Trigger values for some OCP/OPP were less than the PQLs. Trigger value for PFOS (HEPA (2020) criterion for 99% freshwater species protection) was lower than the corresponding PQL.	*Soil (except asbestos):* Overall the soil PQLs are acceptable. *Asbestos:* In the absence of any other validated analytical method, the detection limit for asbestos is considered acceptable. *Groundwater*: OCPs and OPPs were reported at concentrations below the PQLs. In the context of the results reported and the inferred site history, these discrepancies do not materially affect the outcome of the Audit. PFAS were detected in site groundwater. Implications on the adopted PFOS PQL is evaluated by the Auditor in **Section 9**.
Laboratory quality control samples Laboratory quality control samples including laboratory control samples, matrix spikes, surrogate spikes, blanks and duplicates were undertaken by the laboratory.	Acceptable.
Laboratory quality control results The results of laboratory quality control samples were within appropriate limits, except for some recovery outliers in matrix spikes/surrogate spikes/laboratory control samples (primarily due to matrix interferences) and RPD outliers in laboratory duplicates (most likely due to the heterogenous nature of soil samples).	In the context of the dataset reported, the non-conformances in laboratory quality control results are not considered significant and the laboratory quality control results are acceptable.
Data Quality Indicators (DQI) and Data Evaluation (completeness, comparability, representativeness, precision, accuracy) Predetermined data quality indicators (DQIs) were set in the DSI for laboratory analyses including blanks, replicates, duplicates, laboratory control samples, matrix spikes and surrogate spikes. These were discussed with regards to the five category areas. The DSI concluded that *"…the field and laboratory data collected from this investigation is of suitable quality to assess potential contamination risks from this site."*.	An assessment of the data quality with respect to the five category areas has been undertaken by the Auditor and is summarised below.

6.1. Auditor's Opinion

The investigations were undertaken in general accordance with the SAQP reviewed by the Auditor and included appropriate QA/QC programs. Based on review of the above items and in consideration of the inferred site history, the Auditor is satisfied that the data is of suitable quality for the purpose of this audit.

In considering the data as a whole and the site history, the Auditor concludes that:

- The data is largely complete.
- The data is likely to be adequately representative of the overall conditions. The Auditor notes that the findings from the DSI indicated that the site had limited fill and as such, the overall risk associated with asbestos in fill soils is low.
- There is a degree of confidence that data is comparable for each sampling and analytical event.

- The laboratories provided sufficient information to conclude that data is of sufficient precision.
- The data is likely to be accurate.

An evaluation of the data obtained during validation is presented in **Section 11.5**.

7. ENVIRONMENTAL QUALITY CRITERIA

The Auditor has assessed the results against Tier 1 criteria from NEPM (2013). Other guidance has been adopted where NEPM (2013) is not applicable, or criteria are not provided. As discussed in **Section 2.5**, the human health and ecological criteria for 'commercial/industrial' land use exposure scenario were adopted.

7.1. Soil Assessment Criteria

7.1.1. Human Health Assessment Criteria

The Auditor has adopted human health assessment criteria from the following sources:

- NEPM (2013) Health Investigation Levels (HILs) for 'Commercial/Industrial' (HIL D) land use.
- NEPM (2013) Health Screening Levels (HSLs) for 'Commercial/Industrial' (HSL D) land use. The HSLs assumed a clay soil type. Depth to source adopted was <1 m as an initial screen.
- NEPM (2013) Management Limits (MLs) for petroleum hydrocarbons for 'Commercial/Industrial' land use and assuming fine soil texture.
- NEPM (2013) HSLs for Asbestos Contamination in Soil for 'Commercial/Industrial' (HSL D) land use.
- Friebel & Nadebaum (2011) HSLs for direct contact for 'Commercial/Industrial' (HSL D) land use.
- HEPA (2020) perfluorooctane sulfonate (PFOS)/perfluorohexane sulfonate (PFHxS) and perfluorooctanoic acid (PFOA) '*human health investigation levels for soil*' for 'Commercial/Industrial' land use.

7.1.2. Ecological Assessment Criteria

The Auditor has adopted ecological soil assessment criteria from the following sources:

- NEPM (2013) Ecological Screening Levels (ESLs) for 'Commercial/Industrial' land use, assuming fine soil.
- NEPM (2013) Ecological Investigation Levels (EILs) for 'Commercial/Industrial' land use. In the absence of site-specific soil data on pH, clay content, cation exchange capacity and background concentrations in fill, the EILs were calculated using the most conservative soil-specific added contaminant limits (ACL) for aged contaminants and added background concentration (ABC) referenced from Olszowy et al (1995) (background concentration for high traffic, old suburbs in NSW).
- Canadian Council of Ministers of the Environment (CCME) (2010) *Canadian soil quality guidelines: carcinogenic and other polycyclic aromatic hydrocarbons (PAHs)* soil quality guideline (SQG) for benzo(a)pyrene for 'Commercial/Industrial' land use. The SQG has been adopted in place of the NEPM (2013) ESL as it is based on a larger and more up-to-date toxicity database than the low reliability NEPM (2013) ESL.
- HEPA (2020) PFOS and PFOA 'interim soil ecological direct exposure' and 'interim soil ecological indirect exposure' criteria for all land uses.

7.1.3. Soil Aesthetic Considerations

The Auditor has considered the need for soil remediation based on 'aesthetic' contamination as outlined in *Section 3.6 Aesthetic Considerations* of NEPM (2013) Schedule B1, which acknowledges that there are no chemical-specific numerical aesthetic guidelines. Instead, site assessment requires a balanced consideration of the quantity, type and distribution of foreign material or odours in relation to the specific land use and its sensitivity.

7.1.4. Imported Fill

Imported fill has been assessed in relation to attributes expected of virgin excavated natural material (VENM). The EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste* defines VENM as "*…natural material (such as clay, gravel, sand, soil or rock fines):*

- *'that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities*
- *'that does not contain sulphidic ores or soils, or any other waste, and includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved from time to time by a notice in the NSW Government Gazette."*

On this basis, the Auditor considers that for soil to be classified as VENM, the following criteria generally apply:

- Organic compounds (including petroleum hydrocarbons, PAHs, OCPs, PCBs and phenols) should be less than the PQLs.
- Inorganic compounds should be consistent with background concentrations.
- The material should not contain or comprise actual or potential acid sulphate soil.

Imported material, such as excavated natural material (ENM) or construction materials, was assessed against the requirements of the applicable resource recovery order (RRO) and resource recovery exemption (RRE) issued by the EPA under clause 93 of the *Protection of the Environment Operations (Waste) Regulation 2014 (the POEO Regulation)*.

7.2. Groundwater Assessment Criteria

7.2.1. Human Health Assessment Criteria

The Auditor has adopted human health assessment criteria from the following sources:

- NEPM (2013) HSLs for 'Commercial/Industrial' (HSL D) land use. The HSLs assumed a clay soil type and a depth to groundwater of 2 to <4 m.
- NHMRC (2011) *National Water Quality Management Strategy, Australian Drinking-Water Guidelines* (ADWG), Version 3.5 Updated August 2018 for potable use and where HSLs are not applicable. The ADWG are also appropriate for assessing risks from groundwater to human health at the site due to the potential for direct contact.
- NHMRC (2008) *Guidelines for Managing Risks in Recreational Water* (GMRRW). The GMRRW indicates that a qualitative assessment of recreational use can be undertaken using 10 times the concentrations of chemicals stipulated in the ADWG. This is based on an assumed contribution for swimming equivalent to 10% of drinking water consumption. This adjustment only accounts for a reduced intake of groundwater, and therefore can only be applied to criteria derived based on health considerations and cannot be applied to criteria derived for aesthetic reasons (e.g. copper). The adjustment should also not be applied to volatile compounds (e.g. benzene) where inhalation is the primary pathway of concern. Where a 'health-based' and an 'aesthetic-based' criteria is provided, the 'health-based' criteria was adopted.
- HEPA (2020) drinking water and recreational water quality criteria values for PFOS/PFHxS and PFOA.

7.2.2. Ecological Assessment Criteria

The Auditor has adopted ecological groundwater assessment criteria from the following sources:

- ANZG (2018) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. Australian and New Zealand Governments and Australian state and territory governments,

Canberra ACT, Australia (www.waterquality.gov.au/anz-guidelines). Criteria for freshwater and 95% level of species protection were adopted.

- HEPA (2020) ecological water quality criteria values for PFOS and PFOA. Criteria for freshwater and 99% level of species protection were adopted.

7.3. Auditor's Opinion

The environmental quality criteria referenced by the Auditor are consistent with those adopted in the DSI and VR, with the exception of the following:

- The DSI and VR considered relevant NEPM (2013) criteria applicable to sandy and coarse soil types.
- The DSI did not consider NHMRC (2008) GMRRW when screening the available groundwater monitoring data.
- The DSI referenced ANZECC/ARMCANZ (2000) guideline values for physical and chemical stressors when assessing the available groundwater monitoring data.
- The VR did not consider NEPM (2013) MLs and Friebel & Nadebaum (2011) HSLs.

Given the results obtained, the Auditor considers that these discrepancies do not affect the overall conclusions reached by TTMP/JBS&G and the Auditor.

8. EVALUATION OF SOIL RESULTS – THE DSI

8.1. Field Results

Field screening of soil samples was completed in the DSI, and the available PID results (< 20 parts per million (ppm)) indicated an absence of VOC contamination.

Visual and olfactory signs of suspected contamination were not observed, except for the single fragment of potential asbestos containing material (ACM) noted at HA-01 near a former shed on the south-eastern portion of the site (**Attachment 5**, **Appendix A**).

8.2. Analytical Results

The soil samples from the DSI were analysed for a variety of contaminants. The results have been assessed against the environmental quality criteria and are summarised in **Table 8.1**. The soil sampling locations are shown as **Attachment 5**, **Appendix A**.

Table 8.1: Evaluation of Soil Analytical Results – Summary Table (Fill/Topsoil)

Analyte	n	Detections	Maximum (mg/kg)	n > Human Health Screening Criteria	n > Terrestrial Ecological Screening Criteria
AF/FA (500 mL samples)	10	0	<PQL	0 above HSL 0.001% w/w	-
Asbestos in soil	17	0	<PQL	0 above 0.1 g/kg	-
Asbestos in material	1	1	-	-	-
Benzene	50	0	<PQL	0 above HSL D 0-1 m, clay 3 mg/kg	0 above ESL (commercial/industrial) (fine) 95 mg/kg
Toluene	50	1	1	0 above HSL D 0-1 m, clay NL	0 above ESL (commercial/industrial) (fine) 135 mg/kg
Ethylbenzene	50	0	<PQL	0 above HSL D 0-1 m, clay NL	0 above ESL (commercial/industrial) (fine) 185 mg/kg
Total Xylenes	50	6	3.6	0 above HSL D 0-1 m, clay NL	0 above ESL (commercial/industrial) (fine) 95 mg/kg
F1 (TRH C_6–C_{10} minus BTEX)	50	6	37	0 above HSL D 0-1 m, clay 310 mg/kg	0 above ESL (commercial/industrial) 215 mg/kg
F2 (TRH >C_{10}–C_{16} minus naphthalene)	50	<PQL	0	0 above HSL D 0-1 m, clay NL	-
TRH C_6–C_{10}	50	6	38	0 above ML (commercial/industrial) 800 mg/kg	-
TRH >C_{10}–C_{16}	50	0	<PQL	0 above ML (commercial/industrial) 1000 mg/kg	0 above ESL (commercial/industrial) 170 mg/kg
TRH >C_{16}-C_{34}	50	2	170	0 above ML (commercial/industrial) 5000 mg/kg	0 above ESL (commercial/industrial) 2500 mg/kg
TRH >C_{34}-C_{40}	50	0	<PQL	0 above ML (commercial/industrial) 10,000 mg/kg	0 above ESL (commercial/industrial) 6600 mg/kg
Naphthalene	50	0	<PQL	0 above HSL D 0-1 m, clay NL	0 above EIL (commercial/industrial) 370 mg/kg

Analyte	n	Detections	Maximum (mg/kg)	n > Human Health Screening Criteria	n > Terrestrial Ecological Screening Criteria
Benzo(a)pyrene	22	0	<PQL	-	0 above CCME SQG (commercial/industrial) 72 mg/kg
Benzo(a)pyrene TEQ	22	0	<PQL	0 above HIL D 40 mg/kg	-
Total PAHs	22	6	1.6	0 above HIL D 4000 mg/kg	-
Total Phenols	22	0	<PQL	0 above HIL D 240,000 mg/kg	-
Arsenic	87	69	36	0 above HIL D 3000 mg/kg	0 above EIL (commercial/industrial) of 160 mg/kg
Cadmium	87	2	1	0 above HIL D 900 mg/kg	-
Chromium	87	87	40	0 above HIL D 3600 mg/kg	0 above most conservative ACL (commercial/industrial) 310 mg/kg
Copper	87	87	**88**	0 above HIL D 240,000 mg/kg	**1 above most conservative ACL (commercial/industrial) 85 mg/kg**
Lead	87	87	130	0 above HIL D 1500 mg/kg	0 above generic ACL (commercial/industrial) 1800 mg/kg
Mercury	87	1	0.2	0 above HIL D 730 mg/kg	-
Nickel	87	80	30	0 above HIL D 6000 mg/kg	0 above most conservative ACL (commercial/industrial) 55 mg/kg
Zinc	87	87	**240**	0 above HIL D 400,000 mg/kg	**6 above most conservative ACL (commercial/industrial) 110 mg/kg**
OCP - Eldrin	34	0	<PQL	0 above HIL D 100 mg/kg	-
OCP - Heptachlor	34	0	<PQL	0 above HIL D 50 mg/kg	-
OCP – Sum DDT, DDP and DDD	34	0	<PQL	0 above HIL D 3600 mg/kg	0 above EIL 640 mg/kg
OPP	43	0	<PQL	0 above HIL D	-
VOCs	5	0	<PQL	-	-
Sum (PFHHxS and PFOS)	66	24	0.0045	0 above HLD D 20 mg/kg	0 above ecological direct exposure 1 mg/kg 0 above ecological indirect exposure 0.01 mg/kg
PFOA	66	5	0.0003	0 above HLD D 50 mg/kg	0 above ecological direct exposure 10 mg/kg

mg/kg milligram per kilogram
n number of samples
- No criteria available/used
NL Non-limiting
TEQ Toxic Equivalence Quotient

In reviewing the analytical results, the Auditor notes the following:

- PFAS were generally present in the sampled fill/topsoils and the PFAS detections were less frequent in the underlying natural soils/bedrock. The reported PFAS concentrations were

below the adopted assessment criteria and could be representative of ambient concentrations in the local area.

- Concentrations of other contaminants of concern were below the laboratory PQLs or below the adopted human-health based assessment criteria.
- Copper and zinc concentrations exceeding the adopted ecological based assessment criteria were detected in a low number of samples. As the adopted criteria were the most conservative ACL and the exceedances were in isolated locations, the overall risk associated with these metals is low and acceptable.
- Further laboratory testing confirmed the sampled potential ACM fragment (HA-01) contained chrysotile and amosite asbestos.

8.3. Auditor's Opinion

The soil analytical results obtained during the DSI are consistent with the site history and field observations.

The observation of the single ACM fragment near a former shed indicates the potential for additional undetected ACM fragments in the fill within the footprints of other former aboveground structures. To mitigate the potential risk associated with asbestos, the DSI conservatively delineated a large area as 'Asbestos Source Zone' (purple hatched area on **Attachment 5**, **Appendix A**) and required removal of the fill soils within this zone.

The Auditor considers that the soils within the site do not present a risk to human health or the environment and remediation is not warranted. The Auditor recommended in IAA#4 (**Appendix C**) that controls should be in place to ensure asbestos or other unforeseen contamination identified during the bulk earthworks is dealt with appropriately to minimise risks to human health and the environment.

9. EVALUATION OF GROUNDWATER RESULTS – THE DSI

The groundwater analytical results were presented in the DSI. The DSI and the Auditor's observations in assessing the DSI (IAA#4) noted the following:

- No visual or olfactory signs of contamination was observed. No detections of light non-aqueous phase liquid (LNAPL) were identified.
- The reported contaminant concentrations were below the laboratory's detection limits and/or the adopted criteria, with the following exceptions:
  - SBT-BH-4002: PFOS concentration of 0.0006 micrograms per litre (µg/L) exceeded the HEPA (2020) criterion for 99% freshwater species protection - high conservation value systems (0.00023 µg/L).
  - SBT-BH-4003: Copper (2 µg/L), nickel (20 µg/L), zinc (13 µg/L) and ammonia (940 µg/L) concentrations exceeded the respective ANZG (2018) guideline levels for 95% freshwater species protection – slightly to moderately disturbed systems (1.4 µg/L for copper, 11 µg/L for nickel, 8 µg/L for zinc and 900 µg/L for ammonia).
  - SBT-BH-4005: Copper (6 µg/L) and PFOS (0.0058 µg/L) concentrations exceeded the corresponding ANZG (2018) guideline level for 95% freshwater species protection and the HEPA (2020) criterion for 99% freshwater species protection, respectively.
  - SBT-BH-4020: Nickel (18 µg/L) and zinc (17 µg/L) concentrations exceeded the corresponding ANZG (2018) guideline levels for 95% freshwater species protection.
  - SBT-BH-4022: Copper concentration of 1.4 µg/L exceeded the corresponding ANZG (2018) guideline level for 95% freshwater species protection.

On review of available dataset, TTMP reported that:

- There was no consistent trend showing that the metal concentrations increase along the inferred groundwater flow direction. This suggested that the identified metal impacts were derived from diffuse sources within the surrounding environment.
- Ammonia and PFOS concentrations appeared to be attenuating along the inferred groundwater flow direction, indicating these compounds were unlikely to pose unacceptable risks to aquatic receptors in Badgerys Creek.

9.1. Auditor's Opinion

It is the opinion of the Auditor that the reported concentrations of the metals, PFAS and nutrients are representative of background conditions and are unlikely to pose unacceptable risk to the environment. The Auditor also notes that Badgerys Creek is not of high ecological conservation value and adopting the HEPA (2020) criterion for 99% freshwater species protection to assess the PFAS concentrations in groundwater is likely to be conservative and the overall risk associated with PFAS in groundwater is expected to be low.

Dewatering of the tunnel shaft excavation will temporarily alter the groundwater gradient, drawing in groundwater into the excavation. The contaminant concentrations reported in groundwater are not expected to pose a potential risk to human health during the planned shaft excavation. Implementation of standard work health and safety procedures during construction will further minimise potential risks associated with groundwater.

Overall, the Auditor is satisfied that further investigation or remediation of groundwater is not required.

10. EVALUATION OF CONCEPTUAL SITE MODEL

A conceptual site model (CSM) is a representation of the source, pathway and receptor (SPR) linkages at a site. TTMP developed a preliminary CSM in the SAQP when scoping the DSI, which was revised in the DSI in consideration of the findings from the investigation. **Table 10.1** provides the Auditors review of these CSMs.

Table 10.1: Review of the CSM

Element of CSM	Consultant	Auditor Opinion
Contaminant source	Demolition materials from former structures, fill soils, historical agriculture land use and commercial landscaping business located on the adjacent property north of the site.	Appropriate.
Affected media	Soil and groundwater.	Appropriate.
Receptor identification	Identified receptors included: • Construction workers. • General public including persons who could be subject to contaminated media generated during redevelopment/ maintenance. • Persons involved with future maintenance of the rail infrastructure. • Surface water in the offsite dams. • Aquatic receptors in Badgerys Creek	Appropriate.
Exposure pathways	*Human health receptors*: Inhalation of dust / airborne fibres. *Ecological receptors*: Erosion and surface water flow, and lateral groundwater migration.	Appropriate. Low contaminant concentrations have been identified in site soils and groundwater, which are not considered to present a potential risk to human health or the environment.
Presence of preferential pathways for contaminant movement	Not discussed.	Preferential pathways for groundwater may be present, however, are not considered relevant as contamination presenting a potential risk to human health or the environment has not been identified.
Potentially complete source-pathway-receptor (SPR) linkages requiring remediation or management	The CSM did not clearly specify potentially complete SPR linkages. However, the DSI noted that "*it is assessed that sediment-laden runoff has the potential to result in impacts to the water quality of dams within/surrounding the site or neighbouring land. This potential pollutant linkage could be effectively mitigated through effective site set up and sediment/erosion controls to prevent sediment-laden runoff entering these dams or neighbouring land*".	Inhalation of dust (including asbestos fibres) is a potentially complete SPR linkage during construction, which can be efficiently managed via implementation of standard health and safety control measures. The Auditor also concurs with TTMP's comments relating to sediment-laden runoff.
Evaluation of data gaps	Not specified	As noted in **Section 8.3**, controls were to be in place to ensure asbestos or other unforeseen contamination identified during the bulk earthworks is dealt with appropriately to minimise risks to human health and the environment.

10.1. Auditor's Opinion

The Auditor is of the opinion that the CSM is a reasonable representation of the contamination at the site.

11. EVALUATION OF SOIL MANAGEMENT AND VALIDATION

11.1. Review of Soil Management Measures Recommended in the DSI

TTMP concluded in the DSI that "*the soil within the site poses a low risk of contamination to the project given that no gross contamination was identified within the site*" and that "*the site is considered suitable for the proposed development (shaft and maintenance facility / industrial land use) based on the following:*

- *Soil materials from the asbestos source zone will be excavated and removed to facilitate construction of the BSF* [Bringelly Services Facility] *site;*
- *The BSF site will be covered in hard landscaping with minimal soft landscaping, and the site not accessible to general public; and*
- *The shaft and tunnel are undrained (tanked) structures."*

TTMP further recommended the following in the DSI:

- *"CPG engage a competent person during disturbance of topsoil/fill materials (observed to a depth of approximately 0.2 m) to visually monitor for signs of potential contamination and potential ACM. If evidence of potential ACM or other indications of potential contamination are noted (e.g., stained or odorous soils, buried wastes, etc) work should cease pending further investigation of this material by TTMP. The competent person must be experienced in the undertaking excavation/remediation works and have the necessary experience to identify soil materials containing ACM and unforeseen contamination.*
- *Topsoil (fill) materials (observed to a depth of approximately 0.2 m) are stockpiled separately to natural soils, and stockpiles are managed in accordance with the requirements of the CEMP.*
- *No soil materials shall be removed from the site without a Waste Classification Report and / or a Material Classification Report.*
- *A surface water and sediment sample be collected from the dam to provide baseline conditions prior to the commencement of construction.*
- *Six-monthly construction groundwater monitoring be carried out to detect any changes in groundwater quality. This monitoring would also confirm the inferred groundwater flow direction.*
- *Adequate documentation is required to be collected to confirm the chemical suitability of imported materials (if any). The documentation will need to be included in a validation report demonstrating the suitability of the site post-construction (along with other data generated).*

Auditor's Opinion:

The Auditor reviewed these recommendations in IAA#4 (**Appendix C**). The Auditor noted in IAA#4 that the assessment of asbestos in the DSI was not undertaken in accordance with the SAQP and there was a potential for asbestos to be encountered during the construction phase. Monitoring of works for potential ACM by a competent person and segregation of fill as recommended in the DSI were considered appropriate to manage this uncertainty. In the event unexpected finds of asbestos were identified during the construction phase, the procedures within the Rev A AMP were to be followed. The Auditor further noted in IAA#4 that the AMP was not appropriate for widespread asbestos impact (i.e., not unexpected), nor ensuring the site was ultimately suitable for site use under the CLM Act.

According to the VR, the recommendation for six-monthly construction groundwater monitoring was implemented by CPBG, and JBS&G was provided with the monitoring data from December 2023 to June 2024, which indicated that no groundwater quality triggers were exceeded during the monitoring period.

It is noted that the groundwater monitoring data was not provided to the Auditor for review. This is not considered a significant data gap for the current audit given that significant groundwater contamination has not been identified and exposure to site groundwater is unlikely to be a complete pathway in the context of the intended land use.

11.2. Review of the RAP

To satisfy the requirements of the Deed, TTMP prepared the RAP to outline the requirements for spoil management including management of soils to be removed from the 'Asbestos Source Zone', management of unexpected finds of contamination and assessment of imported materials during preparatory construction works. The RAP also presented a validation strategy relating to the elements listed in **Table 11.1** and required preparation of a Validation Report to document site suitability following construction works.

Table 11.1: Validation Strategy Proposed in the RAP

Item	Element	Key Management/Validation Strategy
1	*Spoil Management, Asbestos Source Zone*	• Excavator shall work in a systematic manner to remove fill from the Asbestos Source Zone and store temporarily within the designated stockpiling area for assessment. CPBG shall engage a person competent in the identification of ACM to inspect the gradual removal of fill materials from the Asbestos Source Zone, monitor for signs of potential contamination or potential ACM, and guide the segregation of fill as required. • Excavation shall progress vertically until natural soils are encountered, as indicated by the Competent Person. TTMP recommend that CPBG record the lateral and vertical extent of the excavation completed within the Asbestos Source Zone on a survey and record the fate of spoil removed from this area of the site. • Fill material from the Asbestos Source Zone must not be mixed with natural soil. The excavation of natural soil from the Asbestos Source Zone shall not commence until fill material has been removed from the Asbestos Source Zone. • If evidence of other indications of potential contamination are noted during the excavation of fill from the Asbestos Source Zone (e.g., stained or odorous soils, buried wastes, etc) work should cease pending further investigation of this material by Competent Person. Unexpected finds of contamination shall be managed in accordance with the procedure outlined within Section 7.9 of the Rev A Sub-Plan.
2	*Spoil Management*	• Surplus spoil generated from development within the site shall be assessed to determine its suitability for beneficial reuse. • Where spoil is deemed surplus and cannot be beneficially reused, such spoil shall be classified in accordance with the procedures set out within the Waste Classification Guidelines (NSW EPA, 2014). Where sampling is required to confirm the waste classification of surplus soil, this shall be undertaken in accordance with the guideline provided in ASC NEPM (NEPC, 2013) and the Sampling Design Part 1 – Application (NSW EPA, 2022). • Material classification assessments prepared in accordance with the above guidance shall be documented in a formal report and cross-referenced in a material tracking register to record the fate of spoil removed from the site generated from the development. • The source location, volume, classification and destination of waste material removed from site will be tracked by the Contractor. The Contractor will ensure that a is [*sic*] maintained along with consignment dockets confirming receipt of the material at the disposal facility.
3	*Imported Materials*	• Prior to importing material to site, the Environmental Consultant will review documentation (e.g., VENM certificates and ENM classification reports) provided by material supplier, to confirm suitability prior to importing the material to site. • Where the documentation provided is not adequate to confirm the material is suitable for use, the Environmental Consultant will undertake:

Item	Element	Key Management/Validation Strategy
		– Detailed inspection of material at the receiving site by appropriately qualified Environmental Consultant confirming consistency of the material from the source site (source must be exposed); – Collection and laboratory analysis of samples in accordance with relevant NSW EPA guidelines and/or RRO/RRE requirements. The scope of laboratory analysis shall be determined by the Environmental Consultant undertaking the assessment, based on the characteristics of the material and current/historic use of the source site.
Validation Criteria		• NEPM (2013) health-based and ecological based investigation/screening levels for 'commercial/industrial' land use exposure scenario.

Auditor's Opinion

The Auditor's review of the RAP is documented in IAA#12 (**Appendix C**).

The Auditor concluded in IAA#12 that "*Overall, in the Auditor's opinion, investigation of the site has not identified the need for significant remediation of soil or groundwater, however, management actions are required to ensure any contamination identified during the preparatory construction works is dealt with appropriately to minimise risks to human health and the environment. The management approach recommended in the RAP is considered adequate. If adequately implemented, the RAP should render the site suitable for generic commercial/industrial land use, however, successful validation of preparatory construction works will be required to confirm this*".

11.3. Overview of Validation Works Undertaken

A review of the VR indicated the key project team comprised:

- Principal – CPBG.
- Asbestos removalists - Mann Group, Class A Asbestos Removal Licence (Safework NSW Licence No AD210134).
- Asbestos removalists - Auswide Operations Pty Ltd (Auswide Operations), Class A Asbestos Removal Licence (Safework NSW Licence No AD212715).
- Occupational Hygienist - Airsafe Laboratory Pty Ltd (Airsafe, SafeWork NSW Licence No LAA 002048).
- Validation Environmental Consultant – JBS&G.

Validation works undertaken as reported in the VR, are summarised in **Table 11.2**.

Table 11.2: Summary of Validation Works

Validation Element	Validation Activities by CPBG and Outcomes	Validation Activities by JBS&G and Outcomes	Auditor Opinion
Asbestos Source Zone	Excavation was completed by CPBG. The lateral extent of excavation was consistent with that identified in the RAP (**Attachment 3**, **Appendix A**), with the vertical extent of removal ranging from 0.3 to 0.5 mbgl. Visual inspections were conducted by CPBG as materials were progressively removed and stockpiled. No visual signs of contamination or ACM were observed by CPBG. Materials excavated from this area were stockpiled and assessed by JBS&G for suitability for onsite reuse (refer **Section 11.4.3**).	JBS&G completed an additional validation inspection on 13 September 2023. Observation of the footprint of the former residential house within the Asbestos Source Zone was obstructed due to the presence of a soil (ENM) stockpile (sourced from the shaft construction) and compacted hardstand. The former shed footprint comprised a concrete slab with a recently built shed occupying the footprint area. No remaining fill, ACM or signs of contamination were observed.	JBS&G concluded that based on stockpile assessment (**Section 11.4.3**) in combination with CPBG observations at the time of removal and inspections completed by JBS&G, there is sufficient information with regards to the validation of the Asbestos Source Zone such that the risk of potential contamination in this area is considered to be low. Based on the findings from the DSI, and validation activities completed by CPBG and JBS&G, including the photographic records collected during CPBG's soil removal works, the Auditor agrees that the risk of potential contamination in the Asbestos Source Zone is low.
Validation of soil exposed beneath the former single shed on the northern portion	CPBG excavated the soils to a nominal depth of 0.3 m or to natural soils (whichever was shallower). CPBG subsequently inspected the resulting surface to confirm that the fill/topsoil had been removed to the depth of natural soils. No visual signs of contamination were observed by CPBG. The location of the former shed on the northern portion of the site is shown on **Attachment 3**, **Appendix A**.	JBS&G inspected the former shed footprint on 13 September 2023. At the time of their inspection, the footprint of the former shed comprised compacted hardstand, forming part of a haul road. No remaining fill, ACM or signs of contamination were observed. JBS&G concluded in the VR that "*Based on CPBG observations at the time of removal (no visual observations of contamination or ACM), in combination with the inspection completed by JBS&G, there is considered to be sufficient information with regards to the clearance of building footprints such that the risk of potential contamination in the building footprints is considered to be low*".	Based on the findings from the DSI and validation activities completed by CPBG and JBS&G, the Auditor agrees that the risk of potential contamination in the building footprint is low.

As shown on **Attachment 6**, **Appendix A**, JBS&G visual inspection on 13 September 2023 covered the entire construction footprint, including the two areas mentioned in **Table 11.2**.

Auditor's Opinion

In the Auditor's opinion, the management of the soil excavation within the 'Asbestos Source Zone', including the former shed on the northern site boundary, is generally consistent with the validation strategy outlined in the RAP (**Table 11.1**) and is deemed appropriate.

11.4. Additional Validation Activities

11.4.1. Unexpected Finds

Two unexpected asbestos finds were reported by CPBG during construction works. The management of these finds is summarised as follows:

- **26 August 2022**: A redundant asbestos pipe was observed to have been mixed with spoil. Airsafe sampled the soil and the asbestos pipe for waste classification. The waste was subsequently removed by Mann Group from the site under an asbestos removal control plan prepared by Airsafe between 26 September 2022 and 29 September 2022. In accordance with Safework NSW Code of Practice 2022 *How to safely remove asbestos*, Auswide Operations notified SafeWork NSW of the asbestos removal works on 5 September 2022. Visual asbestos clearance inspections were subsequently completed by Airsafe on 29 September 2022 and again on 20 October 2022. As part of the clearance inspection on 29 September 2022, three soil samples were collected by Airsafe from the area where spoil was excavated and were tested for asbestos. No asbestos was detected in the sampled soils.
- **12 October 2022**: Three fragments of suspected ACM were detected on the ground surface at the haul road near the southern site boundary. As the fragments were less than 10 m^2 in size, they were removed on 12 October 2022 in accordance with a hazardous material removal control plan prepared by Mann Group as well as Safework NSW Code of Practice 2022 *How to safely remove asbestos*. The removed asbestos was disposed of offsite with the materials from the unexpected find on 26 August 2022.

The locations of these unexpected asbestos finds are shown on **Attachment 7**, **Appendix A**.

Auditor's Opinion

In the Auditor's opinion, management of the unexpected finds was generally consistent with the RAP strategy (**Table 11.1**) and is considered to be appropriate.

11.4.2. Imported Materials

The VR indicated that approximately 2662 tonnes of recovered aggregates (dense graded base (DGB) 20) were imported to the site between April 2024 and July 2024. Validation of the imported materials is summarised in **Table 11.3**.

Table 11.3: Imported Fill

Source	Material Type	Supporting Documentation
Ace Demolition and Excavation Pty Ltd, 29 Carter Street, Lidcombe NSW	Recovered aggregates	Material Importation Checklist completed by CPBG dated 27 March 2024, certifying the materials satisfied the project requirements. The recovered aggregate 2024 testing reports prepared by Environmental Investigations Australia Pty Ltd (EI Australia) were dated 11 December 2023 and 13 February 2024. The testing report dated 11 December 2023 included collection of 10 samples over a stockpile estimated to contain approximately 4000 tonnes of crushed concrete. The samples were analysed for metals, asbestos (presence/absence), electrical conductivities (EC) and foreign materials. The concentrations were below the requirements in *The recovered aggregate order 2014.* The testing report dated 13 February 2024 included collection of 10 samples over a stockpile estimated to contain approximately 600 tonnes of crushed concrete. The

Source	Material Type	Supporting Documentation
		samples were analysed for metals, asbestos (presence/absence), EC and foreign materials. Due to the EC values exceeded the corresponding criterion of *The recovered aggregate order 2014*, an additional 10 samples were collected and further tested for EC. The reported EC values were below the requirement of *The recovered aggregate order 2014* No asbestos was detected in the samples analysed.

JBS&G noted the following in the VR:

- The importation of material was managed through CPBG's internal *Material Reuse and Importation Procedure*.
- Although the importation requirements detailed in the RAP were not strictly followed, the implemented procedure was considered appropriate for determining the suitability of the materials brought to site. Management of material importation as per the CPBG procedures included:
  - Confirmation the material was supplied in accordance with an EPA RRO/RRE.
  - Review of supplier documentation by CPBG Environmental Coordinator.
  - CPBG visually inspected the material during importation and placement to confirm that the material was commensurate with that described in the supplier documentation.
- JBS&G concluded in the VR that "*based on the information and data collected, all materials imported to Bringelly to date are deemed suitable for the intended land use*".

Auditor's Opinion

The Auditor considers that the imported materials have been adequately classified in accordance with *The recovered aggregate order 2014/The recovered aggregate exemption 2014,* and are suitable for reuse on the site.

The Auditor also notes the reported metal concentrations are below the soil assessment criteria adopted by the Auditor (**Section 7.1**).

11.4.3. Material Onsite Reuse

The VR noted that the fill and topsoils removed from the Asbestos Source Zone were stockpiled and subsequently sampled by JBS&G for onsite reuse purposes.

Based on the estimated stockpile volume (2000 m^3) and the NSW EPA 2022 *Sampling design part 1 – application*, JBS&G sampled the stockpiled soils for asbestos from 40 test pit locations on 10 September 2024 and 11 September 2024. The test pits were distributed evenly across the top of the stockpile to the total depth of the stockpile (1.5 m below the top of the stockpile). The test pit locations are shown on **Attachment 8**, **Appendix A**.

At each test pit, sampling was performed at two targeted depth intervals: the first metre and the remaining half-metre depth (1–1.5 m). At each depth interval, one 10 L bulk sample and one 500 mL asbestos sample were collected. The overall sampling frequency was equivalent to one per 25 m^3.

The findings from the asbestos sampling included:

- No ACM was observed on the stockpile surface.
- One fragment of ACM (> 7 mm) was identified in test pit location B-TP24_1-1.5, with a calculated concentration of 0.005% w/w, which is below validation criterion of 0.05% w/w.

- One fragment of ACM (>7 mm) was identified in test pit location B-TP26_1-1.5 with a calculated concentration of 0.006% w/w, which is below the validation criterion of 0.05% w/w.
- The 500 mL asbestos samples reported detections of AF in B_TP05_1-1.5 at 0.000017% w/w, which is below the validation criterion of 0.001% w/w.
- An ACM fragment was observed at B-TP23 in material excavated from the test pit, but asbestos was not detected in either the 10 L bulk or 500 mL samples from this location.

Between 30 October 2024 and 8 November 2024, Auswide Operations spread the stockpiled soils across the western portion of the site (as shown on **Attachment 9**, **Appendix A**) at an approximate thickness of 0.25 m.

Following the spreading of the stockpiled soil, Airsafe completed a visual asbestos clearance inspection and confirmed that the area was free from visible asbestos. The area inspected by Airsafe is shown on **Attachment 9**, **Appendix A**.

Auditor's Opinion

The stockpiled materials were only analysed for asbestos. This is, however, considered appropriated based on the results from the DSI.

In the Auditor's opinion, the reuse of the stockpiled materials as general fill on the site is acceptable and is not expected to pose a human health risk, considering the intended future land use (commercial and industrial, with no public access). Due to the site being a workplace (services facility) under the *Workplace Health and Safety Act 2011* (WH&S Act) and the potential for isolated, undetected fragments of ACM to be present within the stockpiled soils that have been spread over the western portion of the site, the Rev C AMP for the SMWSA SBT works is to be implemented during the future construction of the site.

The Rev C AMP has the following requirements, which will allow ongoing mitigation of potential occupational health and safety risk associated with asbestos:

- Preparation of an asbestos register by a competent person where ACM is identified.
- A copy of the asbestos register must be readily accessible to a worker or organisation who has carried out or intends to carry out work with ACM.
- A copy of the asbestos register is to be given to Sydney Metro at the conclusion of the project.

11.4.4. Material Disposed Offsite

Waste materials were sampled and classified in accordance with the EPA (2014) *Waste Classification Guidelines*. Sampling from stockpiles of excavated soils and in situ material was undertaken to characterise and classify the materials prior to offsite disposal.

JBS&G reported in the VR that:

- Approximately 536 tonnes of waste material were disposed offsite as General Solid Waste (non-putrescible) (GSW) with asbestos.
- Approximately 15.72 tonnes of waste material were disposed offsite as GSW.
- Approximately 7991.8 tonnes of material were removed from the site and reused offsite as ENM.
- Approximately 38,055 tonnes of natural material were reused offsite as VENM.
- Approximately 685.65 tonnes of natural material were reused as ENM at the Airport Terminal site (FS01) located 560 Badgerys Creek Road, Badgerys Creek.
- Approximately 1004.2 tonnes of concrete waste was disposed offsite.

The VR included supporting waste disposal documentation, including waste disposal dockets and material tracking register and EPA WasteLocate consignment dockets.

Auditor's Opinion

The Auditor reviewed the documentation provided and is of the opinion that it is generally consistent with the works described. Further assessment of the waste classifications and disposal quantities is discussed in **Section 13.5**.

11.5. Validation QA/QC

Only limited stockpile characterisation sampling was completed by JBS&G during the remediation works.

The Auditor has assessed the overall quality of the dataset by review of the information presented in the referenced reports. The following key observations were made with respect to the adequacy of the validation data to support site suitability:

- The adopted decision statements for the validation were identified in the DQOs including *"Is the site suitable for the proposed use"*. The adopted decision statements were appropriate for the validation conducted.
- The stockpile was sourced from the Asbestos Source Zone. The associated characterisation sampling was undertaken using visual observations, collection of 500 mL soil samples for laboratory analysis and field screening of 10 L bulk samples following the methodology outlined in NEPM 2013.
- Laboratory analysis performed was NATA accredited (excluding asbestos analysis reported to NEPM (2013) detection limits) and completed COC documentation was provided in the reports.
- Adequate field and laboratory quality control sampling was undertaken.

JBS&G concluded in the VR that "*The results of the field and laboratory QA/QC assessment program indicates the data obtained from this validation assessment generally met the predetermined DQIs or, where the DQIs were exceeded, did not indicate systematic sampling and/or analytical errors. Overall, the results are considered to have achieved the 95% compliance rate and as such, the data is considered to be of adequate quality to be relied upon for the purposes of assessing the environmental condition at the site*.".

Auditor's Opinion

Overall, the dataset is considered to be of adequate completeness, comparability, representativeness, precision and accuracy for the purposes of assessing the suitability of the site.

11.6. Auditor's Overall Opinion

Validation was achieved by visual inspection of the footprints following removal of former structures, visual inspection of the exposed surface post topsoil/fill soil removal and some sampling for validation of unexpected finds as described in **Section 11.4.1**. The validation works were generally undertaken in accordance with the RAP.

Reuse of the stockpiled materials as general fill on the site is not expected to pose a human health risk. There is a potential for isolated, undetected fragments of ACM on the western portion of the site and across the broader site. The Rev C AMP for the SMWSA SBT works is to be implemented where asbestos is present or deemed likely to be present.

The Auditor notes that Conditions E98 and E99 of the development consent require the preparation and implementation of an Unexpected Contaminated Land and Asbestos Finds Procedure prior to and during construction. This will mitigate the potential risk associated with unexpected contamination during future construction works on the site.

12. CONTAMINATION MIGRATION POTENTIAL AND ASSESSMENT OF RISK

12.1. Auditor's Opinion

Fill material spread in the western portion of the site contained asbestos concentrations less than the human health criteria, and a visual clearance of the spread material did not identify ACM. The material is therefore not considered to pose a risk to human health under the proposed commercial/industrial land use. There is a potential for isolated ACM fragments to remain and disturbance of these areas has the potential to pose a WH&S risk during future bulk earthworks and therefore should be undertaken in accordance with the Rev C AMP (or any subsequent revisions).

Any future unexpected finds should be managed under the Unexpected Contaminated Land and Asbestos Finds Procedure required under Conditions E98 and E99 of the development consent.

Chemical contamination was not identified in soil and groundwater, therefore, there is no potential for migration of chemical contamination from the site or vertically to groundwater.

There is a potential risk of contamination from materials imported to the site during ongoing use as an intermediate facility. The suitability of any materials imported during future development or construction works should be verified in accordance with relevant guidelines, regulations, and the intended land use exposure scenario.

Beneficial re-use of groundwater is not proposed at the site, therefore, the risks to human health are low (i.e. no direct contact with seepage and no groundwater abstraction). Any future use of groundwater would require appropriate groundwater assessment and regulatory approvals from the NSW Office of Water.

13. COMPLIANCE WITH REGULATORY GUIDELINES AND DIRECTIONS

13.1. General

The Auditor has used guidelines currently made and approved by the EPA under section 105 of the NSW CLM Act.

The reporting was generally in accordance with the EPA (2020) *Consultants Reporting on Contaminated Land*.

13.2. Resilience and Hazards State Environment Planning Policy (SEPP) (2021)

The investigation was generally conducted in accordance with Chapter 4 Remediation of Land in the Resilience and Hazards State Environment Planning Policy (SEPP) (2021) (SEPP R&H, formerly known as SEPP 55) and NSW Department of Urban Affairs and Planning and NSW EPA (1998) *'Managing Land Contamination, Planning Guidelines SEPP 55 – Remediation of Land'*. Documents that may be required by SEPP R&H and the status of these are summarised in **Table 13.1**.

Table 13.1: Reports Anticipated by SEPP R&H

Item	Auditor's Opinion
Preliminary Site Investigation	Addressed by the Technical Paper, SAQP and DSI which identified past or present potentially contaminating activities and provided a preliminary assessment of the extent and nature of site contamination and included a detailed appraisal of the site history.
Detailed Site Investigation	Addressed by the DSI report undertaken to define the nature, extent and degree of contamination; assess the potential risk posed by contaminants to human health and the environment by considering the likelihood of exposure to contaminants of concern and the potential effect of such exposure; and obtain sufficient information for the development of a remediation plan (if necessary).
Remediation Action Plan	Addressed by the RAP
Validation Report	Addressed by the VR
Environmental Management Plan	Not required

13.3. Development Approvals

A CSSI approval 10051 was issued on 23 July 2021 by the Minister for Planning and Public Spaces for construction of new stations, tunnels, bridges, viaducts, and rail and associated ancillary infrastructure along the SMWSA rail alignment from the existing Sydney Trains suburban T1 Western Line (at St Marys) in the north and the Aerotropolis (at Bringelly) in the south. Condition E96 of the CSSI requires a site audit as follows:

> *"A Section A1 or Section A2 Site Audit Statement (accompanied by an Environmental Management Plan) and its accompanying Site Audit Report, which state that the contaminated land disturbed by the work has been made suitable for the intended land use, must be submitted to the Planning Secretary and the Relevant Council(s) after remediation and before the commencement of operation of the CSSI."*

This SAR and accompanying SAS are prepared to comply with this condition.

13.4. Duty to Report

Consideration has been given to the requirements of the EPA (2015) *Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997*. Based on the findings of this SAR, the Auditor considers that the site is not required to be notified under the Duty to Report requirements.

13.5. Waste Management

In accordance with Section 4.3.7 of the EPA (2017) *Guidelines for the NSW Site Auditor Scheme (3rd Edition),* the Auditor has checked the following aspects relating to waste disposal.

13.5.1. Waste Classification

Waste classification letters were prepared by ADE Consulting Group (ADE), JBS&G and TTMP, and included in the VR. It was reported that wastes were classified in accordance with the EPA (2014) *Waste Classification Guidelines*. The adopted waste classification strategy included sampling from stockpiles of excavated soils and in-situ material.

The waste classification letters included in the VR and reviewed by the Auditor are as follows:

- 'Material Classification Assessment, Bringelly Services Facility Shaft, 21 October 2022, TTMP; 'Material Classification Assessment: Bringelly Services Facility Shaft: Addendum 01: Confirmatory Sampling Between 12 to 13 m below ground surface', 24 March 2023, TTMP; 'Material Classification Assessment: Bringelly Services Facility Shaft: Addendum 02: Confirmatory Sampling Between 14 to 18 m below ground surface', 6 April 2023, TTMP; and 'Material Classification Assessment: Bringelly Services Facility Shaft 19 to 20 m bgs', 28 June 2023, TTMP. In-situ classification of natural soil/bedrock deeper than 0.3 mbgl to be excavated during the shaft construction in accordance with the EPA (2014) *Waste Classification Guidelines* and definition of VENM.
- 'Materials Analysis & Classification Report, 40 Derwent Road, Bringelly, NSW, 2556', 24 April 2023, ADE. Sampling of one stockpile (estimated volume of 2640 m^3), which consisted of predominantly natural clay materials from excavations and stripping from around the site during the initial setup phase. Materials met the definition of ENM under the NSW EPA 2014 ENM Order.
- 'Materials Analysis & Classification Report, 40 Derwent Road, Bringelly, NSW, 2556', 24 April 2023, ADE. Sampling of one stockpile (estimated volume of 35 m^3), which consisted of predominantly natural clay materials from excavations and stripping from around the site during the initial setup phase. GSW (non - putrescible).
- 'Waste Classification, 40 Derwent Road, Bringelly', 11 September 2022, Airsafe. Sampling of one stockpile (estimated volume of 75 m^3) associated with the unexpected finds dated 26 August 2022 (**Section 11.4.1**). GSW (non - putrescible) and Special waste (Asbestos).
- 'Southern Tunnelling Works Application to Import Cross Passage Material to FS01, Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works', 8 September 2023, CPBG. Material classification assessment of Bringelly Shale between the proposed Airport Business Park and Aerotropolis, including the site. Suitable for reuse at the proposed Western Sydney Airport.

13.5.2. Waste Volumes, Disposal Receipts and Disposal Facilities

The VR included a waste tracking register (prepared by CPBG) and associated waste disposal records. The Auditor reviewed a selection of the documents including the EPLs of the waste disposal facilities to confirm compliance.

Table 13.2 summarises the information for soil disposed offsite. A total of 48,289 tonnes of waste was removed and disposed of offsite.

Table 13.2: Summary of Waste Disposal

Waste Classification	Tonnage (t)	Disposal Facility	EPL No.
GSW (non-putrescible) and Special waste (Asbestos)	536	Bingo Eastern Creek Recycling Ecology Park, Kangaroo Avenue, Eastern Creek.	13426

Waste Classification	Tonnage (t)	Disposal Facility	EPL No.
GSW (non-putrescible)	15.72	Aussie Skips Recycling Pty Ltd, 13 Bellfrog Street, Greenacre.	21389
ENM	7239	14-98 Old Castlereagh Road, Penrith.	Not applicable
	752	Aerotropolis, the SMWSA rail project alignment.	21672
	685.65	560 Badgerys Creek Road, Badgerys Creek.	Not applicable
VENM	5390.2	14-98 Old Castlereagh Road, Penrith.	Not applicable
	10236.8	769 Manre Road, Kemps Creek.	Not applicable
	4718	M12 Motorway West, 1793 Elizabeth Drive, Badgerys Creek.	21595
	17710	M12 Motorway Central, Elizabeth Drive, Penrith.	Not applicable
Demolition waste	1004.2	ECORR Resource Recovery, 155 Newton Road Weatherill Park NSW	10699
		Boral Recycling, 38 Widermere Road, Wetherill Park.	11815
		Brandown Recycling Yard, Elizabeth Drive Cecil Park.	12618

The Auditor notes the following:

- Approximately 75 m^3 of soil was classified by Airsafe as GSW (non-putrescible) and Special waste (asbestos), while the disposal records indicated approximately 536 tonnes of GSW (non-putrescible) and Special waste (Asbestos) (or 357 m^3 assuming a bulk density of 1.5 tonne/m^3) were disposed offsite. The VR noted that "*additional material was identified from this impact and disposed under the same waste classification*".
- A portion of the ENM classified by ADE was reported to have been reused onsite for hardstand, haul roads and laydown areas. This is considered to be acceptable by the Auditor based on the reported analytical results.

13.5.3. Auditor's Opinion

The Auditor considers that the waste management undertaken was generally consistent with the works described in the VR and generally complied with the EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste*.

Records for offsite disposal for some materials were not sighted. The omission, however, will not materially affect the outcome of the Audit as the materials were removed from the site.

13.6. VENM and Other Imported Materials

Based on the information in **Section 11.4.2**, the Auditor is of the opinion that the materials imported to the site are suitable for onsite use (from a contamination perspective) and generally have been imported in accordance with relevant legislation.

13.7. Licenses

Removal of asbestos impacted was conducted by Mann Group and Auswide Operations. Both companies hold valid Class A Asbestos Removal Licence.

An occupational hygienist from Airsafe (SafeWork NSW Licence No. LAA 002048) inspected the western portion of the site after the placement of soils removed from the Asbestos Source Zone in this area.

13.8. Asbestos Register and Asbestos Management Plan

As noted in **Section 1.4** and **Section 11.4.3** CPBG have prepared an AMP for the SMWSA SBT works which has been reviewed by the Auditor. The AMP and associated Asbestos Register will be provided to Sydney Metro at the conclusion of the project. They will document areas where asbestos remains at concentrations below the human health criteria and the management procedures to be implemented.

13.9. Conflict of Interest

The Auditor has considered the potential for a conflict of interest in accordance with the requirements of section 3.2.3 of the EPA (2017) *Guidelines for the NSW Site Auditor Scheme*.

The Auditor considers that there are no conflicts of interest, given that:

1. The Auditor is not related to a person by whom any part of the land is owned or occupied.
2. The Auditor does not have a pecuniary interest in any part of the land or any activity carried out on any part of the land.
3. The Auditor has not reviewed any aspect of work carried out by, or a report written by, the site auditor or a person to whom the site auditor is related.

14. CONCLUSIONS AND RECOMMENDATIONS

Based on the results documented in the VR, JBS&G concluded that "*Notwithstanding minor data gaps due to inaccessible localised areas of building footprints, there is considered to be sufficient information to conclude there is a low potential for risk to site users from contamination. The site is considered suitable for the intended commercial / industrial land use.*"

Based on the information presented in the VR and observations made on site, and following the Decision-making process for assessing urban redevelopment sites in NSW EPA (2017) *Guidelines for the NSW Site Auditor Scheme (3rd Edition)*, the Auditor concludes that the site is suitable for operation of a services facility to support construction activities for the underground tunnel portions of the SMWSA.

In accordance with Conditions E98 and E99 of the development consent, an Unexpected Contaminated Land and Asbestos Finds Procedure should be prepared and implemented during future construction of the site.

Fill containing asbestos at concentrations below the human health criteria is likely to remain in the west of the site and is to be managed in accordance with the Rev C AMP.

The suitability of any materials imported during future development or construction works should be verified in accordance with relevant guidelines, regulations, and the intended land use exposure scenario.

Groundwater has not been assessed for any beneficial re-use. Any future use of groundwater would require appropriate assessment and regulatory approvals from the NSW Office of Water.

15. OTHER RELEVANT INFORMATION

This Audit was conducted on the behalf of CPBG for the purpose of assessing whether the land is suitable for the proposed operation of a services facility to support construction activities for the underground tunnel portions of the SMWSA, i.e. a "Site Audit" as defined in Part 1 Clause 4 (1) (definition of a 'site audit' (b)(iii)) of the CLM Act.

This summary report may not be suitable for other uses. TTMP and JBS&G included limitations in their reports. The Audit must also be subject to those limitations. The Auditor has prepared this document in good faith, but is unable to provide certification outside of areas over which the Auditor had some control or is reasonably able to check.

The Auditor has relied on the documents referenced in **Section 1** of the Site Audit Report in preparing the Auditor's opinion. If the Auditor is unable to rely on any of those documents, the conclusions of the audit could change.

It is not possible in a Site Audit Report to present all data which could be of interest to all readers of this report. Readers are referred to the referenced reports for further data. Users of this document should satisfy themselves concerning its application to, and where necessary seek expert advice in respect to, their situation.

Appendix A
Attachments

Attachment 1: Site Locality
Attachment 2: Site Survey
Attachment 3: Locations of Former Site Features
Attachment 4: AEC Identified
Attachment 5: DSI Investigation Locations
Attachment 6: Footprint of JBS&G's Visual Inspection, September 2023
Attachment 7: Locations of Unexpected Finds
Attachment 8: Test Pit Sampling Locations, Asbestos Source Zone Stockpile
Attachment 9: Material Placement Area, Asbestos Source Zone Stockpile

Attachment 1: Site Locality

Legend
Approximate Site Boundary

JBS&G

Job No: 63723

Client: CPB Contracting

Version: R10 Rev A | Date 2/12/2024

Drawn By: IA | Checked By: EH

Scale 1:12,000

0 110 220
metres

Coord. Sys. GDA 1994 MGA Zone 56

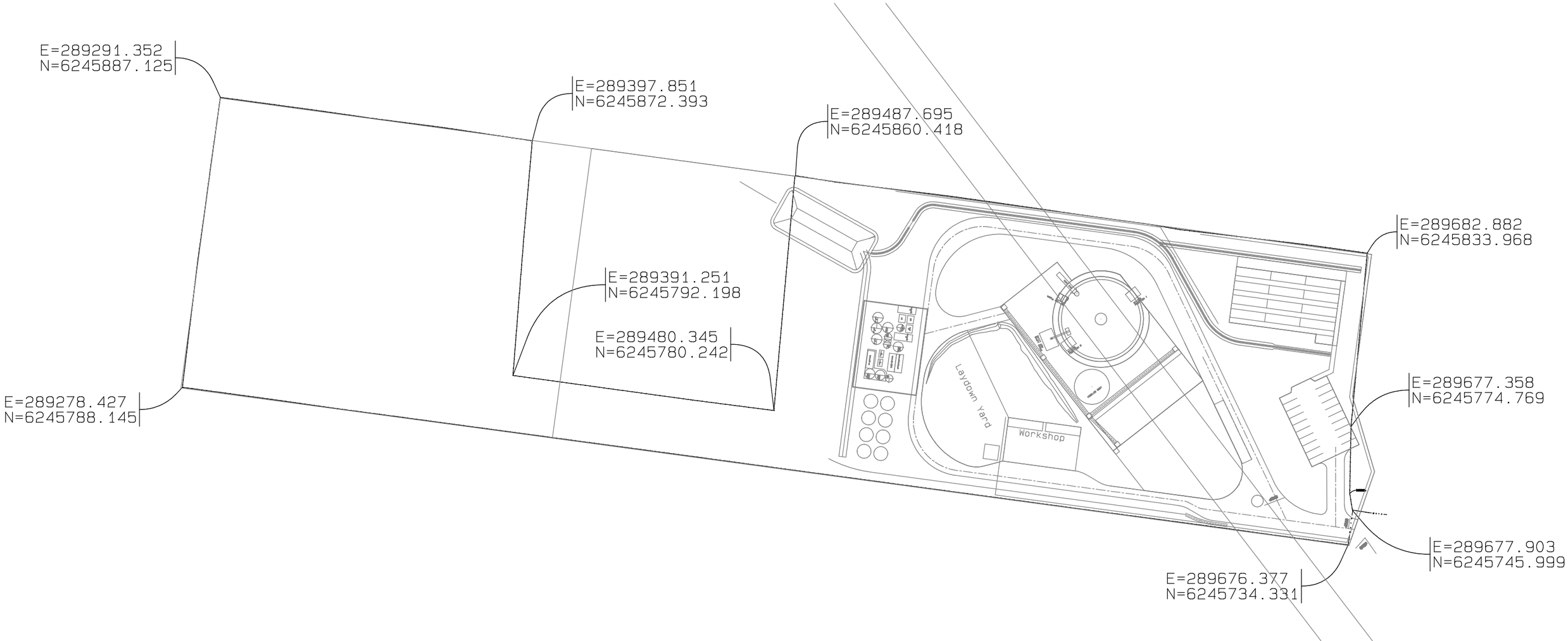
40 Derwent Road
Bringelly, NSW

SITE LOCATION

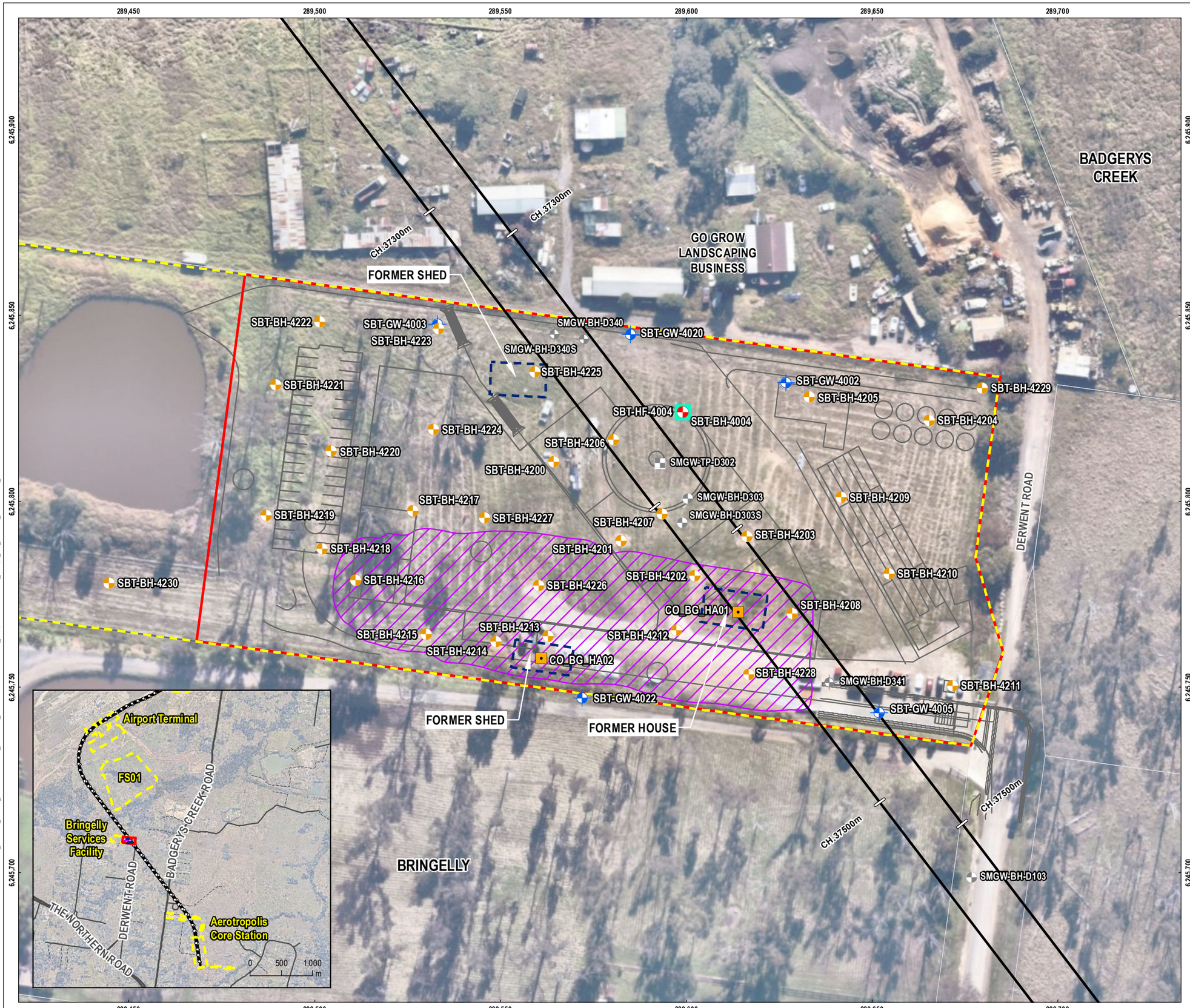
FIGURE 1

File Name: 63723_WSA_OrchardHill_R10_RevA
Reference: www.nearmap.com.au (Capture Date 2024/07/11)

Attachment 2: Site Survey



Attachment 3: Locations of Former Site Features



CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Additional Contaminated Land Location
- Borehole
- Hand Sample

Additional Geotechnical/Hydrogeological Location
- Borehole
- Monitoring Well
- Hydrofracture In-situ Stress Test

Existing Investigation Location
- Borehole
- Groundwater Borehole
- Test Pit
- Tunnel Alignment
- Tunnel Alignment - Chainage
- Bringelly Services Facility Site Layout
- ACM Fragments
- Former Structure
- Cadastral Boundary
- BSF Site Boundary
- Construction Footprint

SOURCE
Contaminated land locations, additional investigations, site boundary, construction footprint boundary, former structures, and ACM fragments from Tetra Tech Coffey.
Existing investigations and alignment supplied by CPBG.
Cadastre from DFSI.
Aerial imagery from Nearmap (capture date 15-06-2022).

N

0 20 40 m

SCALE **1:1,000**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

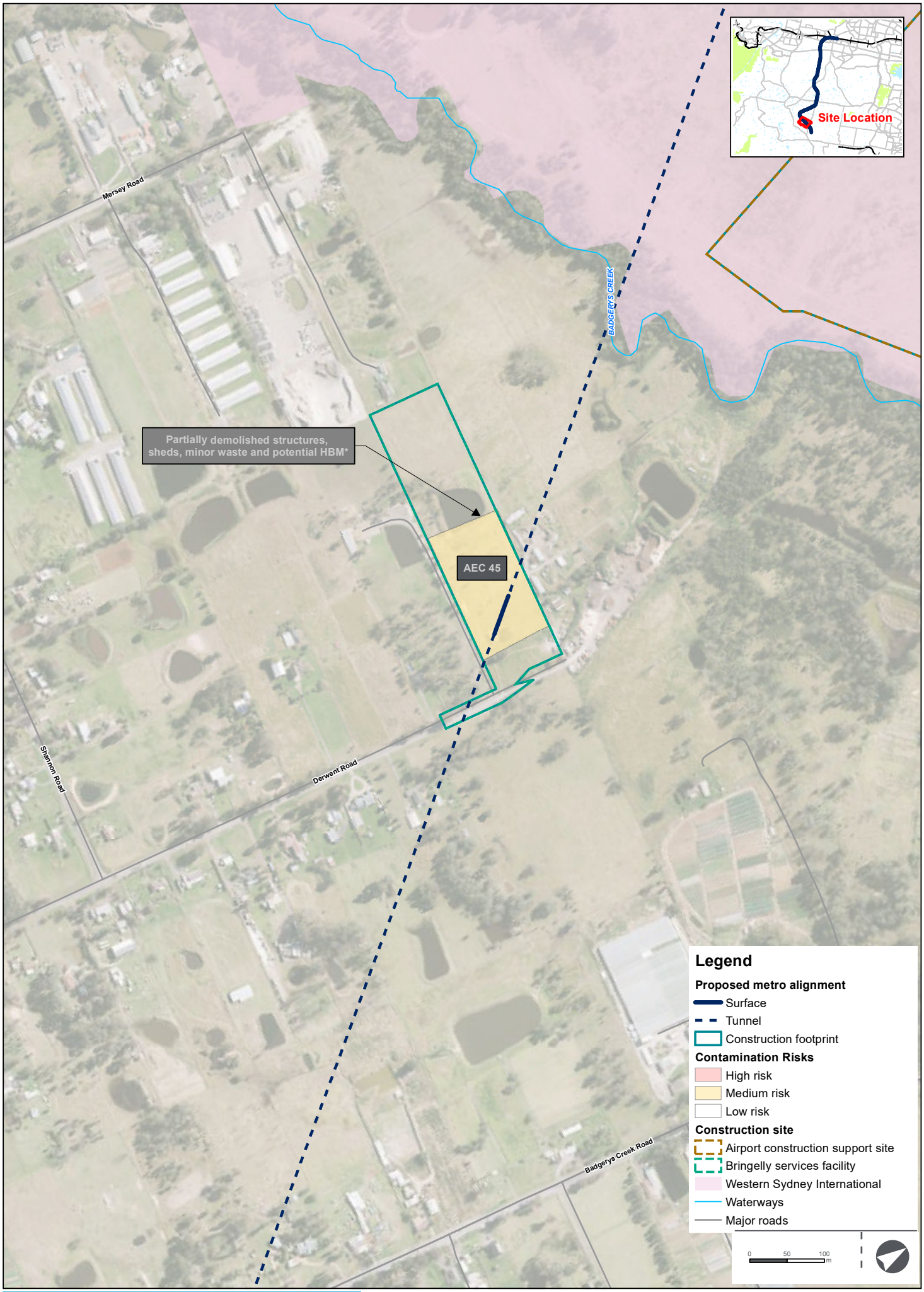
FIGURE 1

Bringelly Services Facility - Investigations within Construction Boundary

TETRA TECH COFFEY

DATE: **29.07.22** PROJECT: **754-SYDGE292575** FILE: **292575_SAQP_BS_F001_GIS**

Attachment 4: AEC Identified



Australian Government | NSW Government | sydney METRO

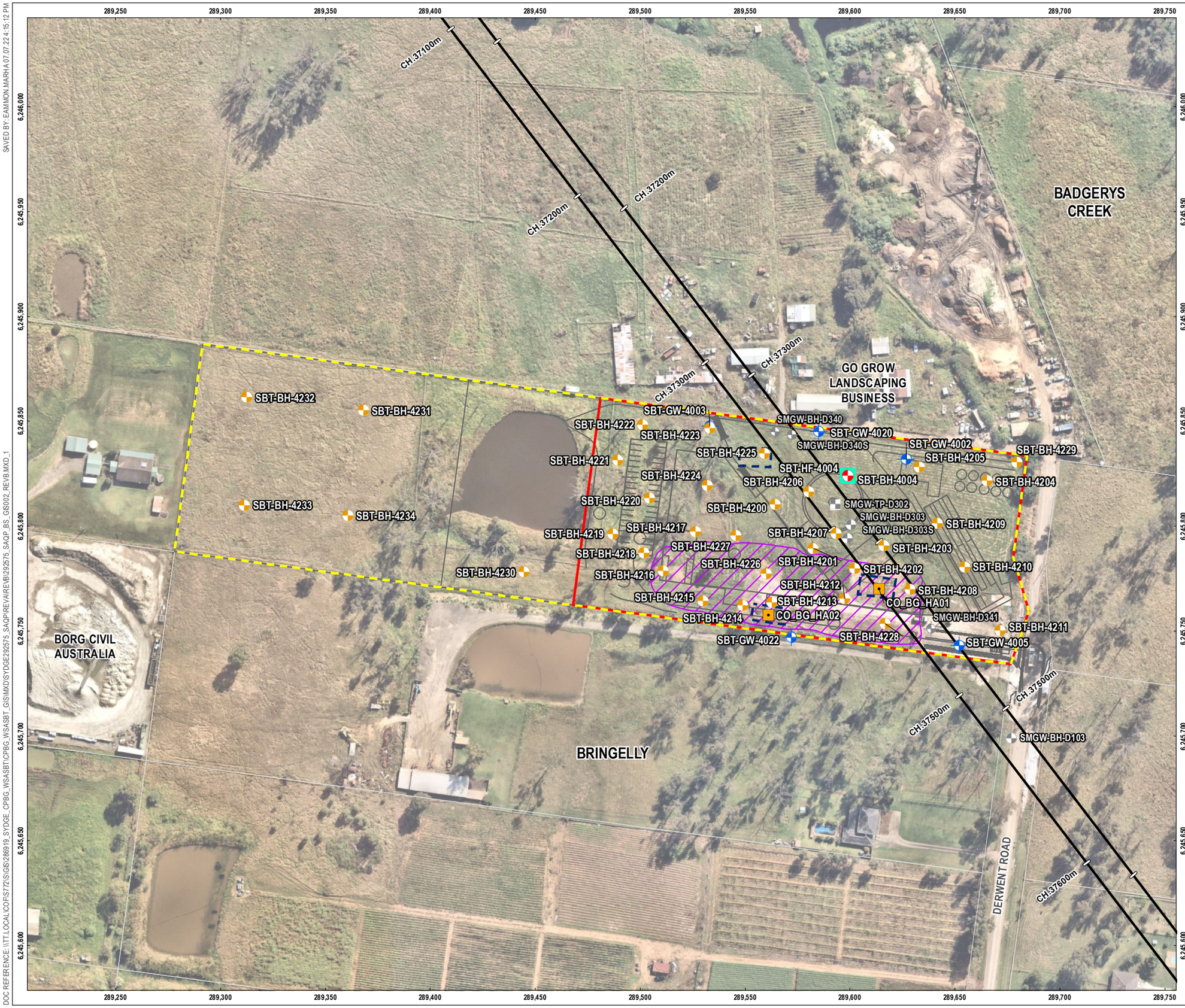
Sydney Metro – Western Sydney Airport

Bringelly services facility and off-airport alignment contamination sources and risk ranking

*HBM - Potential hazardous building materials
Indicative only, subject to design development

Figure A14

Attachment 5: DSI Investigation Locations



LEGEND

Additional Contaminated Land Location
- Borehole
- Hand Sample

Additional Geotechnical/Hydrogeological Location
- Borehole
- Monitoring Well
- Hydrofracture In-situ Stress Test

Existing Investigation Location
- Borehole
- Groundwater Borehole
- Test Pit
- Tunnel Alignment - Chainage
- Tunnel Alignment
- Bringelly Services Facility Site Layout
- ACM Fragments
- Former Structure
- Cadastral Boundary
- BSF Site Boundary
- Construction Footprint

SOURCE
Contaminated land locations, additional investigations, site boundary, construction footprint boundary, former structures, and ACM fragments from Tetra Tech Coffey.
Existing investigations and alignment supplied by CPBG.
Cadastre from DFSI.
Aerial imagery from Nearmap (capture date 18-02-2022).

N

0 25 50 m

SCALE **1:1,750**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 2

Bringelly Services Facility - Investigations within Site Boundary

TETRA TECH COFFEY

DATE: **07.07.22** PROJECT: **754-SYDGE292575** FILE: **292575_SAQP_BS_F002_GIS**

SAVED BY: EAMMON.MARHA 07.07.22 4:15:12 PM
DOC REFERENCE: \\TT.LOCAL\CO\RS\72\SIG\286919_SYDGE_CPBG_WSASBT\CPBG_WSASBT\GIS\MXD\SYDGE292575_SAQP\REVAIR\EVB\292575_SAQP_BS_GIS002_REVB.MXD_1

Attachment 6: Footprint of JBS&G's Visual Inspection, September 2023

Legend

- Approximate Site Boundary
- Construction Footprint
- NSW Cadastre
- Asbestos Source Zone (RAP, TTMP 2022b)
- JBS&G Visual Inspection Area - 13 September 2023

JBS&G

Job No: 63723

Client: CPB Contracting

Version: R10 Rev A	Date 2/12/2024
Drawn By: IA	Checked By: EH

Scale 1:2,000

0 10 20

metres

Coord. Sys. GDA 1994 MGA Zone 56

40 Derwent Road
Bringelly, NSW

ASBESTOS SOURCE ZONE

FIGURE 4

File Name: 63723_WSA_OrchardHill_R10_RevA
Reference: www.nearmap.com.au (Capture Date 2024/07/11)

Attachment 7: Locations of Unexpected Finds

Legend

- Approximate Site Boundary
- Construction Footprint
- NSW Cadastre
- Asbestos in Soil - Unexpected Finds
- Suspected Asbestos Fragments Unexpected Find

JBS&G

Job No: 63723

Client: CPB Contracting

Version: R10 Rev A	Date 2/12/2024
Drawn By: IA	Checked By: EH

Scale 1:2,000

0 10 20

metres

Coord. Sys. GDA 1994 MGA Zone 56

40 Derwent Road
Bringelly, NSW

UNEXPECTED FINDS LOCATIONS

FIGURE 8

File Name: 63723_WSA_OrchardHill_R10_RevA
Reference: www.nearmap.com.au (Capture Date 2024/07/11)

Attachment 8: Test Pit Sampling Locations, Asbestos Source Zone Stockpile

Legend

- Approximate Site Boundary
- Stockpile
- Current Sample Locations

JBS&G

Job No: 63723	
Client: CPB Contracting	
Version: R10 Rev A	Date 23/09/2024
Drawn By: IA	Checked By: EH
Scale 1:460	

0 4.5 9

metres

Coord. Sys. GDA 1994 MGA Zone 56

40 Derwent Road
Bringelly, NSW

ASBESTOS SOURCE ZONE STOCKPILE SAMPLE LOCATIONS

FIGURE 5

File Name: 63723_WSA_OrchardHill_R10_RevA
Reference: www.nearmap.com.au (Capture Date 2024/07/11)

Attachment 9: Material Placement Area, Asbestos Source Zone Stockpile

Legend
- Approximate Site Boundary
- Construction Footprint
- NSW Cadastre

Site Features
- Asbestos Source Zone Material Placement (Airsafe, 2024)
- Asbestos Source Zone Clearance (Airsafe, 2024)

Base Features
- Hydro Line
- Road Labels

JBS&G

Job No: 63723

Client: CPB Contracting

Version: R10 Rev A	Date 2/12/2024
Drawn By: IA	Checked By: EH

Scale 1:2,000

0 10 20
metres

Coord. Sys. GDA 1994 MGA Zone 56

40 Derwent Road
Bringelly, NSW

ASBESTOS SOURCE ZONE MATERIAL PLACEMENT (AIRSAFE, 2024)

FIGURE 6

File Name: 63723_WSA_OrchardHill_R10_RevA
Reference: www.nearmap.com.au (Capture Date 2024/07/11)

Appendix B
Site Audit Statement

NSW Site Auditor Scheme

Site Audit Statement

A site audit statement summarises the findings of a site audit. For full details of the site auditor's findings, evaluations and conclusions, refer to the associated site audit report.

This form was approved under the *Contaminated Land Management Act 1997* on 12 October 2017.

For information about completing this form, go to Part IV.

Part I: Site audit identification

Site audit statement no. TO-095-A4

This site audit is a:

☒ statutory audit

☐ non-statutory audit

within the meaning of the *Contaminated Land Management Act 1997*.

Site auditor details

(As accredited under the *Contaminated Land Management Act 1997*)

Name: [redacted]

Company: Ramboll Australia Pty Ltd

Address: Level 3, 100 Pacific Highway, North Sydney

Postcode: 2060

Phone: [redacted]

Email: [redacted]

Site details

Address: Bringelly Services Facility (Sydney Metro Western Sydney Airport), 40 Derwent Road, Bradfield, NSW

Postcode: 2556

Property description

(Attach a separate list if several properties are included in the site audit.)

Part Lot 2502 Deposited Plan (DP) 1282956 (See survey and boundary co-ordinates at the end of Part I)

Local government area: Liverpool City Council

Area of site (include units, e.g. hectares): 3.3 hectares

Current zoning: ENT: Enterprise under the State Environmental Planning Policy (Precincts-Western Parkland City) 2021

Regulation and notification

To the best of my knowledge:

☐ **the site is** the subject of a declaration, order, agreement, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985,* as follows: (provide the no. if applicable)

- ☐ Declaration no.
- ☐ Order no.
- ☐ Proposal no.
- ☐ Notice no.

☒ **the site is not** the subject of a declaration, order, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985*.

To the best of my knowledge:

☐ the site **has** been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997*

☒ the site **has not** been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997*.

Site audit commissioned by

Name: [redacted]

Company: CPB Contractors Pty Limited and Ghella Pty Ltd (CPBG) Joint Venture

Address: Level 2, 177 Pacific Highway, North Sydney

Postcode: 2060

Phone: [redacted]

Email: [redacted]

Contact details for contact person (if different from above)

Name: [redacted]

Phone [redacted]

Email: [redacted]

Nature of statutory requirements (not applicable for non-statutory audits)

☐ Requirements under the *Contaminated Land Management Act* 1997 (e.g. management order; please specify, including date of issue)

☐ Requirements imposed by an environmental planning instrument (please specify, including date of issue)

☒ Development consent requirements under the *Environmental Planning and Assessment Act 1979* (please specify consent authority and date of issue)

Critical State Significant Infrastructure approval 10051, issued 23 July 2021 by the Minister for Planning and Public Spaces

☐ Requirements under other legislation (please specify, including date of issue)

Purpose of site audit

☒ **A1** To determine land use suitability

Intended uses of the land: Ongoing services facility to support construction activities for the underground tunnel portions of the Sydney Metro Western Sydney Airport project

OR

☐ **A2** To determine land use suitability subject to compliance with either an active or passive environmental management plan

Intended uses of the land:

OR

(Tick all that apply)

☐ **B1** To determine the nature and extent of contamination

☐ **B2** To determine the appropriateness of:

- ☐ an investigation plan
- ☐ a remediation plan
- ☐ a management plan

☐ **B3** To determine the appropriateness of a **site testing plan** to determine if groundwater is safe and suitable for its intended use as required by the *Temporary Water Restrictions Order for the Botany Sands Groundwater Resource 2017*

☐ **B4** To determine the compliance with an approved:

- ☐ **voluntary management proposal** or
- ☐ **management order** under the *Contaminated Land Management Act 1997*

☐ **B5** To determine if the land can be made suitable for a particular use (or uses) if the site is remediated or managed in accordance with a specified plan.

Intended uses of the land:

Information sources for site audit

Consultancies which conducted the site investigations and/or remediation:

CPB Contractors Pty Limited and Ghella Pty Ltd (CPBG)

Tetra Tech Major Projects Pty Ltd (TTMP)

JBS&G Australia Pty Ltd (JBS&G)

Titles of reports reviewed:

‘Sydney Metro – Western Sydney Airport Technical Paper 8 Contamination’, October 2020, M2A

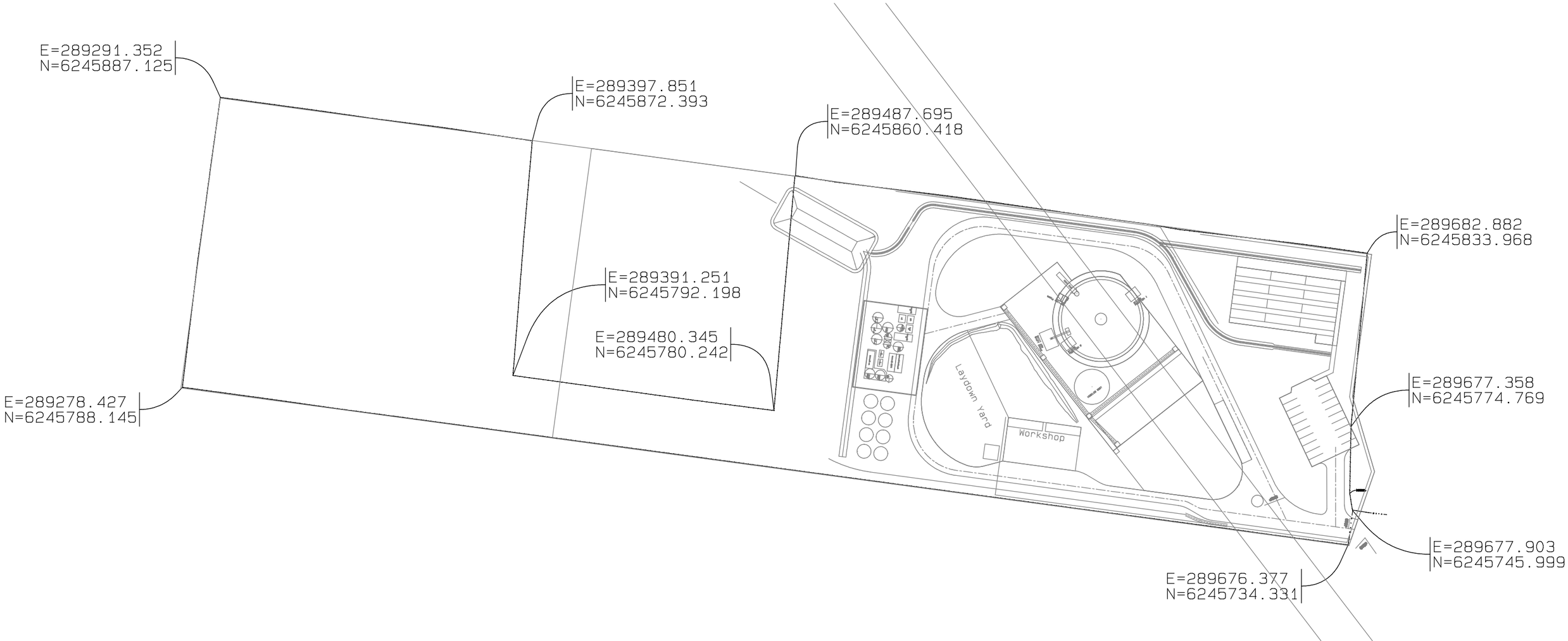
‘Asbestos Management Plan, Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Work’ Revision A, 2 February 2022, CPBG
‘NSW (Off-Airport) Soil and Water Management Sub-Plan, Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works’ (Revision A), 19 May 2022, CPBG
‘Bringelly Sampling Analysis Quality Plan, Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works’, 25 July 2022, TTMP
‘Technical Memorandum: Preliminary Soil Bringelly’, 2 August 2022, TTMP
‘Bringelly Services Facility Detailed Site Investigation’, 7 September 2022, TTMP
‘Material Classification Assessment: Bringelly Services Facility Shaft’, 7 October 2022, TTMP
‘Bringelly Services Facility Remedial Action Plan, Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works’ (Rev A04), 21 October 2022, TTMP
‘Hydrogeological Report (Project-wide), Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works’, 23 February 2023, TTMP
‘Asbestos Management Plan, Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Work’ Revision C, 22 February 2024, CPBG
‘NSW (Off-Airport) Soil and Water Management Sub-Plan, Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works’ (Revision 2), 15 August 2024, CPBG
‘Bringelly Validation Report', 2 December 2024, JBS&G

Other information reviewed, including previous site audit reports and statements relating to the site:

Site audit report details

Title:	Site Audit Report – Bringelly Services Facility SBT Works, Sydney Metro Western Sydney Airport
Report no.:	TO-095-A4 (Ramboll Ref: 318001447-006) Date: 20 December 2024

Attachment 2: Site Survey



Part II: Auditor's findings

Please complete either Section A1, Section A2 or Section B, not more than one section. (Strike out the irrelevant sections.)

- Use **Section A1** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **without the implementation** of an environmental management plan.
- Use **Section A2** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **with the implementation** of an active or passive environmental management plan.
- Use **Section B** where the audit is to determine:
  - (B1) the nature and extent of contamination, and/or
  - (B2) the appropriateness of an investigation, remediation or management plan[1], and/or
  - (B3) the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or
  - (B4) whether the terms of the approved voluntary management proposal or management order have been complied with, and/or
  - (B5) whether the site can be made suitable for a specified land use (or uses) if the site is remediated or managed in accordance with the implementation of a specified plan.

[1] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

Section A1

I certify that, in my opinion:

The **site is suitable** for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

☐ ~~Residential, including substantial vegetable garden and poultry~~

☐ ~~Residential, including substantial vegetable garden, excluding poultry~~

☐ ~~Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry~~

☐ ~~Day care centre, preschool, primary school~~

☐ ~~Residential with minimal opportunity for soil access, including units~~

☐ ~~Secondary school~~

☐ ~~Park, recreational open space, playing field~~

☐ ~~Commercial/industrial~~

☒ Other (please specify):

Ongoing use as a services facility to support construction activities for the underground tunnel portions of the Sydney Metro Western Sydney Airport project

~~OR~~

☐ ~~I certify that, in my opinion, the **site is not suitable** for any use due to the risk of harm from contamination.~~

Overall comments:

The Bringelly Services Facility has been constructed by CPBG as part of the Station Boxes and Tunnelling Works (SBT Works) and has been used as a services facility to support construction activities for the underground tunnel portions of the Sydney Metro Western Sydney Airport (SMWSA) and included a shaft, as well as temporary construction facilities, a water treatment plant and amenities.

Intrusive investigations of soil and groundwater did not identify contamination above human health criteria for a commercial/industrial land use.

During construction works, two unexpected finds (UFs) relating to asbestos were identified which required management to address site contamination risks. The UFs identified during development works were adequately remediated via offsite disposal. Validation was adequate to demonstrate successful removal.

Asbestos was detected in a stockpile of soil retained at the site at concentrations below the adopted human health screening level. The stockpile was spread in the western portion of the site. Management of this area is to be undertaken in accordance with an Asbestos Management Plan (AMP).

Section A2

I certify that, in my opinion:

Subject to compliance with the **attached** environmental management plan[2] (EMP), the site is suitable for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

☐ Residential, including substantial vegetable garden and poultry

☐ Residential, including substantial vegetable garden, excluding poultry

☐ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry

☐ Day care centre, preschool, primary school

☐ Residential with minimal opportunity for soil access, including units

☐ Secondary school

☐ Park, recreational open space, playing field

☐ Commercial/industrial

☐ Other (please specify):

EMP details

Title:

Author:

Date: No. of pages:

EMP summary

This EMP (attached) is required to be implemented to address residual contamination on the site.

The EMP: (Tick appropriate box and strike out the other option.)

☐ requires operation and/or maintenance of **active** control systems[3]

☐ requires maintenance of **passive** control systems only[3].

[2] Refer to Part IV for an explanation of an environmental management plan.
[3] Refer to Part IV for definitions of active and passive control systems.

~~Purpose of the EMP:~~

~~Description of the nature of the residual contamination:~~

~~Summary of the actions required by the EMP:~~

~~How the EMP can reasonably be made to be legally enforceable:~~

~~How there will be appropriate public notification:~~

~~Overall comments:~~

Section B

Purpose of the plan[4] which is the subject of this audit:

_____

_____

_____

I certify that, in my opinion:

(B1)

☐ The nature and extent of the contamination **has** been appropriately determined

☐ The nature and extent of the contamination **has not** been appropriately determined

AND/OR (B2)

☐ The investigation, remediation or management plan **is** appropriate for the purpose stated above

☐ The investigation, remediation or management plan **is not** appropriate for the purpose stated above

AND/OR (B3)

☐ The site testing plan:

☐ **is** appropriate to determine

☐ **is not** appropriate to determine

if groundwater is safe and suitable for its intended use as required by the *Temporary Water Restrictions Order for the Botany Sands Groundwater Resource 2017*

AND/OR (B4)

☐ The terms of the approved voluntary management proposal* or management order** (strike out as appropriate):

☐ **have** been complied with

☐ **have not** been complied with.

*voluntary management proposal no. _____

**management order no. _____

AND/OR (B5)

☐ The site **can be made suitable** for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

☐ Residential, including substantial vegetable garden and poultry

☐ Residential, including substantial vegetable garden, excluding poultry

[4] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

- ☐ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry
- ☐ Day care centre, preschool, primary school
- ☐ Residential with minimal opportunity for soil access, including units
- ☐ Secondary school
- ☐ Park, recreational open space, playing field
- ☐ Commercial/industrial
- ☐ Other (please specify):

IF the site is remediated/managed* in accordance with the following plan (**attached**):

*Strike out as appropriate

Plan title

Plan author

Plan date No. of pages

SUBJECT to compliance with the following condition(s):

Overall comments:

Part III: Auditor's declaration

I am accredited as a site auditor by the NSW Environment Protection Authority (EPA) under the *Contaminated Land Management Act 1997.*

Accreditation no. 1505

I certify that:

- I have completed the site audit free of any conflicts of interest as defined in the *Contaminated Land Management Act 1997,* and
- with due regard to relevant laws and guidelines, I have examined and am familiar with the reports and information referred to in Part I of this site audit, and
- on the basis of inquiries I have made of those individuals immediately responsible for making those reports and obtaining the information referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete, and
- this statement is, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties under the *Contaminated Land Management Act 1997* for wilfully making false or misleading statements.

Signed 

Date 20 December 2024

Part IV: Explanatory notes

To be complete, a site audit statement form must be issued with all four parts.

How to complete this form

Part I

Part I identifies the auditor, the site, the purpose of the audit and the information used by the auditor in making the site audit findings.

Part II

Part II contains the auditor's opinion of the suitability of the site for specified uses or of the appropriateness of an investigation, or remediation plan or management plan which may enable a particular use. It sets out succinct and definitive information to assist decision-making about the use or uses of the site or a plan or proposal to manage or remediate the site.

The auditor is to complete either Section A1 or Section A2 or Section B of Part II, **not** more than one section.

Section A1

In Section A1 the auditor may conclude that the land is *suitable* for a specified use or uses OR *not suitable* for any beneficial use due to the risk of harm from contamination.

By certifying that the site is *suitable*, an auditor declares that, at the time of completion of the site audit, no further investigation or remediation or management of the site was needed to render the site fit for the specified use(s). **Conditions must not be** imposed on a Section A1 site audit statement. Auditors may include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

Section A2

In Section A2 the auditor may conclude that the land is *suitable* for a specified use(s) subject to a condition for implementation of an environmental management plan (EMP).

Environmental management plan

Within the context of contaminated sites management, an EMP (sometimes also called a 'site management plan') means a plan which addresses the integration of environmental mitigation and monitoring measures for soil, groundwater and/or hazardous ground gases throughout an existing or proposed land use. An EMP succinctly describes the nature and location of contamination remaining on site and states what the objectives of the plan are, how contaminants will be managed, who will be responsible for the plan's implementation and over what time frame actions specified in the plan will take place.

By certifying that the site is suitable subject to implementation of an EMP, an auditor declares that, at the time of completion of the site audit, there was sufficient information satisfying guidelines made or approved under the *Contaminated Land Management Act 1997*

(CLM Act) to determine that implementation of the EMP was feasible and would enable the specified use(s) of the site and no further investigation or remediation of the site was needed to render the site fit for the specified use(s).

Implementation of an EMP is required to ensure the site remains suitable for the specified use(s). The plan should be legally enforceable: for example, a requirement of a notice under the CLM Act or a development consent condition issued by a planning authority. There should also be appropriate public notification of the plan, e.g. on a certificate issued under s.149 of *the Environmental Planning and Assessment Act 1979*.

Active or passive control systems

Auditors must specify whether the EMP requires operation and/or maintenance of active control systems or requires maintenance of passive control systems only. Active management systems usually incorporate mechanical components and/or require monitoring and, because of this, regular maintenance and inspection are necessary. Most active management systems are applied at sites where if the systems are not implemented an unacceptable risk may occur. Passive management systems usually require minimal management and maintenance and do not usually incorporate mechanical components.

Auditor's comments

Auditors may also include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

Section B

In Section B the auditor draws conclusions on the nature and extent of contamination, and/or suitability of plans relating to the investigation, remediation or management of the land, and/or the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or whether the terms of an approved voluntary management proposal or management order made under the CLM Act have been complied with, and/or whether the site can be made suitable for a specified land use or uses if the site is remediated or managed in accordance with the implementation of a specified plan.

By certifying that a site *can be made suitable* for a use or uses if remediated or managed in accordance with a specified plan, the auditor declares that, at the time the audit was completed, there was sufficient information satisfying guidelines made or approved under the CLM Act to determine that implementation of the plan was feasible and would enable the specified use(s) of the site in the future.

For a site that *can be made suitable*, any **conditions** specified by the auditor in Section B should be limited to minor modifications or additions to the specified plan. However, if the auditor considers that further audits of the site (e.g. to validate remediation) are required, the auditor must note this as a condition in the site audit statement. The condition must not specify an individual auditor, only that further audits are required.

Auditors may also include **comments** which are observations in light of the audit which provide a more complete understanding of the environmental context to aid decision-making in relation to the site.

Part III

In **Part III** the auditor certifies their standing as an accredited auditor under the CLM Act and makes other relevant declarations.

Where to send completed forms

In addition to furnishing a copy of the audit statement to the person(s) who commissioned the site audit, statutory site audit statements must be sent to

- the **NSW Environment Protection Authority**: nswauditors@epa.nsw.gov.au or as specified by the EPA

  AND

- the **local council** for the land which is the subject of the audit.

Appendix C
Previous IAAs

RAMBOLL

ENVIRONMENT
& HEALTH

15 September 2022

CPB Contractors Pty Ltd and Ghella Pty Ltd
Attn: [redacted] [redacted]
Level 2, 177 Pacific Highway
North Sydney NSW 2060

By email: [redacted].[redacted].com.au

Dear [redacted]

RE: INTERIM AUDIT ADVICE LETTER NO.4 - REVIEW OF DETAILED SITE INVESTIGATION, PROPOSED SYDNEY METRO WESTERN SYDNEY AIRPORT BRINGELLY SERVICES FACILITY, BRINGELLY NSW

Ramboll Australia Pty Ltd
Level 3, 100 Pacific Highway
PO Box 560
North Sydney NSW 2060

T +61 2 9954 8100
www.ramboll.com

Ref: 318001447-006

Audit Number: TO-095

1. INTRODUCTION AND OBJECTIVE

As a NSW Environment Protection Authority (EPA) accredited Contaminated Sites Auditor, on behalf of CPB Contractors Pty Ltd and Ghella Pty Ltd (CPBG), I am conducting an Audit (TO-095) under the NSW *Contaminated Land Management Act 1997* (CLM Act) in relation to the proposed Bringelly Services Facility (BSF, also referred to as 'the site') located at 40 Derwent Road, Bringelly New South Wales (NSW). The site, which forms part of the Sydney Metro - Western Sydney Airport (SMWSA) Rail Project (the SMWSA rail project), is legally identified as Lot 181 Deposited Plan (DP) 806012. The site occupies an area of approximately 3.9 hectares (ha) and the site locality is shown on Attachment 1.

The SMWSA rail project includes construction of new stations, a train stabling and maintenance facility, rail infrastructure facilities, tunnels, bridges, viaducts and associated ancillary infrastructure along the railway alignment. It is understood that the site will be used as an intermediate service facility to support construction activities for the underground tunnel portions of the project, which will include a shaft and temporary construction facilities. The shaft will be excavated to approximately 30 metres below ground level (mbgl) or 42.5 m Australian height datum (AHD) and will be tanked (undrained) upon completion.

The Audit is required under Conditions E94, E96 and E97 of Critical State Significant Infrastructure (CSSI) approval 10051, issued on 23 July 2021 by the Minister for Planning and Public Spaces. The Audit is therefore statutory. The overall objective of the Audit is to enable a Section A1 or A2 site audit statement (SAS) and supporting site audit report (SAR) to be prepared that confirms the site is suitable for the proposed development.

The objective of this Interim Audit Advice (IAA) letter (IAA4) is to provide an independent review of the detailed site investigation (DSI) of the site. IAA4 has

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been prepared to satisfy Conditions 12.9 (c) (vi and vii) of the deed agreed between Transport for NSW and CPBG.

2. SCOPE OF WORK

The following reports were reviewed:

- '*Bringelly Sampling Analysis Quality Plan, Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works*', dated 25 July 2022, Tetra Tech Major Projects Pty Ltd (TTMP) (*the SAQP*).
- '*Technical Memorandum: Preliminary Soil Results Bringelly*', dated 2 August 2022, TTMP (*the Memo*).
- '*Bringelly Services Facility Detailed Site Investigation'*, dated 7 September 2022, TTMP (*the DSI*).

The SAQP was for a DSI specific to the shaft and surface construction activities at the site and did not consider the post-construction use (other than the use of the shaft for commercial/industrial purposes) of the site. I provided review comments on a draft version of the SAQP (dated 1 April 2022) which were considered in the updated version prepared by TTMP dated 25 July 2022.

The DSI was undertaken by TTMP between April 2022 and July 2022. Prior to issuing the associated DSI report, the Memo was prepared to present a preliminary review of the DSI soil analytical results. I prepared a letter dated 19 August 2022 reviewing the Memo and confirming that preparatory construction related works can commence at the site, subject to identified controls.

I provided review comments on previous versions of the DSI (Rev A01 dated 2 August 2022 and Rev B01 dated 26 August 2022) via email correspondences to CPBG dated 17 August 2022 and 2 September 2022, respectively. The final version of the DSI (Rev C01) was prepared by TTMP dated 7 September 2022.

I reviewed the SAQP and the DSI against the requirements of the following:

- ANZG (2018) '*Australian and New Zealand Guidelines for Fresh and Marine Water Quality'*. Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia.
- Chapter 4 Remediation of Land in the *Resilience and Hazards State Environment Planning Policy (SEPP) 2021* (formerly known as SEPP 55) and NSW Department of Urban Affairs and Planning and NSW EPA (1998) '*Managing Land Contamination, Planning Guidelines SEPP 55 - Remediation of Land'.*
- HEPA (2020) *'PFAS National Environmental Management Plan, Version 2.0 – January 2020'.*
- National Environment Protection Council (NEPC) '*National Environment Protection (Assessment of Site Contamination) Measure 1999',* as Amended 2013 (NEPM, 2013).
- NSW EPA (1995) '*Sampling Design Guideline'*[1].
- NSW EPA (2017) '*Guidelines for the NSW Site Auditor Scheme (3rd Edition)'.*
- NSW EPA (2020) '*Contaminated Land Guidelines, Consultants Reporting on Contaminated Land'.*

[1] The Auditor notes that the NSW EPA (1995) *Sampling Design Guidelines* were superseded by updated guidelines on 19 August 2022. As the SAQP and DSI were completed prior to this date, compliance with the updated guidelines was not considered.

3. BACKGROUND

The SAQP included a summary of the site history and findings from previous intrusive investigations, which noted the following:

- The site was semi-cleared in 1955 for rural land use. A house was shown on the site in the 1984 aerial photograph and sheds were added in the late 1980s. The site remained in this configuration (low density residential land use) until late 2021/February 2022 when site structures were removed. Locations of the former site structures are shown on Attachment 1.
- Findings from the previous investigations indicated:
    - No indication of significant groundwater and soil contamination was identified, and the reported concentrations were generally below the adopted guideline values[2].
    - Trace concentrations of perfluoroalkyl and polyfluoroalkyl substances (PFAS) were reported in fill soils. However, PFAS were not detected in the analysed natural soil samples.
- A site inspection was completed by TTMP on 22 March 2022 prior to the DSI. The inspection noted that:
    - Former site structures had been demolished and removed from the site. The footprint of the former site structures and surrounding areas was characterised by bare soil.
    - Pieces of potential asbestos containing materials (PACM) were identified in multiple locations within the footprint and surrounds of the former site structures. Approximate locations where the PACM was observed are shown as purple hatched area (labelled as 'ACM Fragments') in Attachment 1.
- As asbestos was not reported in fill soil samples from the previous investigations, the PACM observed during the site inspection may have been derived from the removal of the former site structures.
- Previous investigations had a limited scope and further investigation was required to better characterise the site soil and groundwater conditions and inform management requirements during construction.

4. REVIEW OF DSI

4.1. DSI Scope of Work

The DSI included test pitting, geotechnical drilling, sampling of existing groundwater monitoring wells and installation, development and sampling of new groundwater monitoring wells. The DSI focused in areas where excavation and soil disturbance were proposed. The DSI investigation locations are shown in Attachment 2.

Soil sampling was undertaken from 33 test pits (SBT-BH-4200 to SBT-BH-4205, SBT-BH-4208 to SBT-BH-4234) excavated across the site to 1 or 2 mbgl. Additional soil sampling was undertaken from greater depths in groundwater well locations (SBT-GW-4002, SBT-GW-4003, SBT-GW4005, SBT-GW-4020 and SBT-GW-4022) and geotechnical investigation boreholes (SBT-BH-4004, SBT-BH-4206 and SBT-BH-4207). Groundwater assessment included sampling of the five new monitoring wells.

Fill soil samples were generally collected from near surface (0 – 0.2 mbgl) and then at 0.5 m intervals. Natural soil samples were collected from directly beneath the fill profile and then at 1 m intervals until the target depth. Discrete samples were collected when visual or olfactory signs of potential

[2] Minor concentration exceedances of criteria were noted in groundwater.

contamination were observed. Recovered soil samples were screened in the field for the presence of ionisable volatile organic compounds (VOCs) using a calibrated photo-ionisation detector (PID).

The new groundwater monitoring wells were installed along the northern and southern site boundary in the vicinity of the proposed tunnel alignment. The wells were installed at depths of between 13 mbgl (SBT-GW-4002) and 20 mbgl (SBT-GW-4005) using class 18 uPVC screen and casing. The installed well screen was approximately 9 m or 12 m in length and 2 mm graded sands were used to create a filter pack to 0.5 m above the top of the screen section. A 0.5 m bentonite clay plug was installed above the sand filter pack. The remaining bore annulus was backfilled with bore cuttings or concrete to the surface. Following installation, the monitoring wells were developed using a dedicated bailer (or pump) to remove excess sediment introduced during drilling and improve connection with the surrounding water bearing zone.

Selected soil samples were submitted for laboratory analysis for metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene and total xylenes (BTEX), polycyclic aromatic hydrocarbons (PAH), phenolic compounds, organochlorine pesticides (OCPs), organophosphorus pesticides (OPPs), phenolic compounds, PFAS, VOCs, semi-VOCs (SVOCs) and/or asbestos (presence and asbestos fines/fibrous asbestos (AF/FA)). One piece of PACM (HA-01) was noted on the ground surface within the 'ACM Fragments' area (Attachment 1), which was submitted for asbestos identification analysis. The PACM did not exhibit excessive signs of weathering and did not readily crumble with moderate hand pressure.

Groundwater samples were analysed for metals (dissolved), TRH, BTEX, PAHs, phenolic compounds, OCPs, OCPs, VOCs, SVOCs, PFAS and nutrients.

Auditor's Opinion: The scope completed was generally consistent with the SAQP although the following deviations were noted:

- The SAQP states that '*Bulk 10 L samples will be collected where visible ACM is observed at the sample location for subsequent screening and analysis by the laboratory*'. This requirement was not complied with as bulk 10 L samples were not collected near the PACM sample location HA-01.
- The SAQP states that "*Laboratory provided 500 g sample bags for samples for asbestos analysis will be collected in fill materials"*. However, a review of the laboratory certificates provided in the DSI showed that the weight of the asbestos samples submitted for laboratory analysis was less than 500 g, with the majority of the samples being less than 300 g.
- Off-site groundwater monitoring well SMGW-BH-D305 located approximately 600 m southeast (inferred up gradient) of the site was not sampled as per the SAQP. Sampling of SMGW-BH-D305 was proposed in the SAQP due to the previous detection of PFAS in this monitoring well, whilst PFAS were not detected in other monitoring wells previously installed on the site. Given that PFAS were reported in onsite groundwater in the DSI, the requirement for resampling of SMGW-BH-D305 was considered redundant.
- The SAQP proposed the installation of wells SBT-GW-4002 and SBT-GW-4003 in the commercial/industrial property located north of the site. As the owner of the commercial/industrial property did not permit access, these two monitoring wells were relocated and installed along the northern boundary of the site.

Based on the findings and recommendations of the DSI, the Auditor considers that the scope of work undertaken for the DSI was adequate to meet the objectives of characterising site soil and groundwater conditions for future use of the shaft and inform the management requirements during construction.

4.2. DSI Results

Key findings as reported in the DSI are as follows.

Soil Results

Ground conditions generally comprised limited fill (clay, gravelly clay and sandy clay topsoil/fill to up to 0.4 mbgl), followed by natural soils (clay to depths of between 2.2 mbgl and 3.8 mbgl) and bedrock (predominantly siltstone with some sandstone). Visual and olfactory signs of suspected contamination were not observed, with the exception of the single fragment of PACM noted at HA-01.

Soil headspace PID readings were typically below 20 parts of per million (ppm), indicating a low likelihood for significant VOC contamination in the sampled soils.

The reported contaminant concentrations were below the laboratory's detection limits and/or the adopted criteria. The analysis of soil samples did not identify asbestos.

The PACM sample (HA-01) was confirmed to be ACM and contain chrysotile and amosite asbestos. Given the location of this find, the source of the ACM was likely to be associated with the former site structures. This find is also considered an indicator that other undetected fragments of ACM may be present in fill within the footprint of the former site structures.

Groundwater Results

The measured depth to groundwater varied from 3.2 m below top of casing (mbTOC) at SBT-GW-4020 to 6.6 mbTOC at SBT-GW-4022, suggesting a slight southerly groundwater gradient. The DSI further notes that the existing monitoring wells were installed across different formations and at slightly different screen intervals, which might have influenced the interpretation of the groundwater flow direction. TTMP considered the north-northwesterly groundwater flow direction (following the site topography and the location of the nearest surface water receptor Badgery's Creek located approximately 400 m to the north) presented within the Hydrogeological Interpretative Report (TTMP, 2022[3]) to be more representative of actual flow conditions given this draws on a larger network of monitoring wells positioned within and regionally surrounding the site.

The reported contaminant concentrations were below the laboratory's detection limits and/or the adopted criteria, with the following exceptions:

- SBT-BH-4002: Perfluorooctane sulfonate (PFOS) concentration of 0.0006 microgram grams per litre (µg/L) exceeded the HEPA (2020) criterion for 99% freshwater species protection - high conservation value systems (0.00023 µg/L).
- SBT-BH-4003: Copper (2 µg/L), nickel (20 µg/L), zinc (13 µg/L) and ammonia (940 µg/L) concentrations exceeded the respective ANZG (2018) guideline levels for 95% freshwater species protection – slightly to moderately disturbed systems (1.4 µg/L for copper, 11 µg/L for nickel, 8 µg/L for zinc and 900 µg/L for ammonia).
- SBT-BH-4005: Copper (6 µg/L) and PFOS (0.0058 µg/L) concentrations exceeded the corresponding ANZG (2018) guideline level for 95% freshwater species protection and the HEPA (2020) criterion for 99% freshwater species protection, respectively.
- SBT-BH-4020: Nickel (18 µg/L) and zinc (17 µg/L) concentrations exceeded the corresponding ANZG (2018) guideline levels for 95% freshwater species protection.
- SBT-BH-4022: Copper concentration of 1.4 µg/L exceeded the corresponding ANZG (2018) guideline level for 95% freshwater species protection.

[3] The report was not sighted or reviewed by the Auditor.

On review of available data set, TTMP further indicated that:

- There was no consistent trend showing that the metal concentrations increase along the inferred groundwater flow direction. This suggested that the identified metal impacts were derived from diffuse sources within the surrounding environment.
- Ammonia and PFOS concentrations appeared to be attenuating along the inferred groundwater flow direction, indicating these compounds were unlikely to pose unacceptable risks to aquatic receptors in Badgery's Creek.
- Dewatering of the tunnel shaft excavation would temporarily alter the groundwater gradient, drawing in groundwater into this excavation. It was assessed that the contaminant concentrations reported in groundwater would not pose unacceptable risks to human health in a generic commercial/industrial land-use setting.

4.3. DSI Conclusions and Recommendations

Based on the results of the DSI, TTMP concluded that "*…the soil within the site poses a low risk of contamination to the project given that no gross contamination was identified within the site"* and that "*…the site is considered suitable for the proposed development (shaft and maintenance facility / industrial land use)…*".

TTMP recommended the following:

- *"CPG[4] engage a competent person during disturbance of topsoil/fill materials (observed to a depth of approximately 0.2 m) to visually monitor for signs of potential contamination and potential ACM. If evidence of potential ACM or other indications of potential contamination are noted (e.g., stained or odorous soils, buried wastes, etc) work should cease pending further investigation of this material by TTMP. The competent person must be experienced in the undertaking excavation/remediation works and have the necessary experience to identify soil materials containing ACM and unforeseen contamination.*
- *Topsoil (fill) materials (observed to a depth of approximately 0.2 m) are stockpiled separately to natural soils, and stockpiles are managed in accordance with the requirements of the CEMP.*
- *No soil materials shall be removed from the site without a Waste Classification Report and / or a Material Classification Report.*
- *A surface water and sediment sample be collected from the dam to provide baseline conditions prior to the commencement of construction.*
- *Six-monthly construction groundwater monitoring be carried out to detect any changes in groundwater quality.*
- *Adequate documentation is required to be collected to confirm the chemical suitability of imported materials (if any). The documentation will need to be included in a validation report demonstrating the suitability of the site post-construction (along with other data generated)".*

Auditor's Opinion: The findings from the DSI were consistent with the previous investigations and indicated minimal contamination in site soil and groundwater. The Auditor notes that the nearest surface water receptor Badgery's Creek is not of high ecological conservative value and adopting the HEPA (2020) criterion for 99% freshwater species protection to assess the PFAS concentrations in groundwater is likely to be conservative. The Auditor also notes that the reported PFOS concentrations in site groundwater were below the HEPA (2020) criterion for 95% freshwater species protection.

The assessment of asbestos in the DSI was not undertaken in accordance with the SAQP and there is potential for asbestos to be encountered during the construction phase. Monitoring of works for

[4] Namely CPBG.

potential ACM by a competent person and segregation of fill as recommended in the DSI are appropriate to manage this uncertainty. In the event unexpected finds of asbestos area identified, the procedures within the Asbestos Management Plan prepared for the project (Rev A dated 2 February 2022) (the AMP) should be followed. The Auditor notes that the AMP is not appropriate for widespread asbestos impact (i.e., not unexpected), nor ensuring the site is ultimately suitable for site use under the CLM Act.

Groundwater is unlikely to pose unacceptable risks to human health during shaft excavation. The proposed six-monthly groundwater monitoring during construction will allow ongoing monitoring of such risks.

Groundwater to be discharged from the site would need to undergo testing and treatment to meet appropriate discharge criteria. Condition E129 of the CSSI requires that "*unless an EPL* [Environmental Protection Licence] *is in force in respect to the CSSI and that licence specifies alternative criteria, discharges from construction wastewater treatment plants to surface waters must not exceed:*

a) *The Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018 (ANZG 2018) default values for toxicants at 95 per cent species protection level;*

b) *For physical and chemical stressors, the guideline values set out in Tables 3.3.2 and 3.3.3 of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 (ANZECC/ARMANZ); and*

c) *For bio accumulative and persistent toxicants, the ANZG (2018) guideline values at a minimum of 99 per cent species protection level."*

5. CONCLUSION AND RECOMMENDATIONS

Overall, in the Auditor's opinion, the DSI adequately assessed the site soil and groundwater conditions for future use of the shaft and to inform the management requirements during construction, focused in areas where excavation and soil disturbance were proposed. The DSI recommendations (Section 4.3) are appropriate for managing the potential risks to human-health and the environment during construction and include the requirements for a competent person to monitor works for potential ACM and for segregation of fill.

Groundwater discharged from the site would need to undergo further testing and treatment to meet appropriate discharge criteria, if required.

6. LIMITATIONS

This interim audit advice was conducted on behalf of CPBG for the purpose of assessing the suitability and appropriateness of a DSI. This summary report may not be suitable for other uses.

The Auditor has relied on the documents referenced in Section 2 in preparing the Auditor's opinion. The consultants included limitations in their reports. This interim audit advice must also be subject to those limitations. The Auditor has prepared this document in good faith but is unable to provide certification outside of areas over which the Auditor had some control or is reasonably able to check. If the Auditor is unable to rely on any of those documents, the conclusions of this interim audit advice could change.

It is not possible to present all data which could be of interest to all readers of this interim audit advice. Readers are referred to the referenced reports for further data. Users of this document should satisfy themselves concerning its application to, and where necessary seek expert advice in respect to, their situation.

* * *

Consistent with the NSW EPA requirement for staged 'signoff' of sites that are the subject of progressive assessment, remediation and validation, I advise that:

- This advice letter does not constitute a Site Audit Report or Site Audit Statement.
- At the completion of the remediation and validation I will provide a Site Audit Statement and supporting documentation.
- This interim advice will be documented in the Site Audit Report.

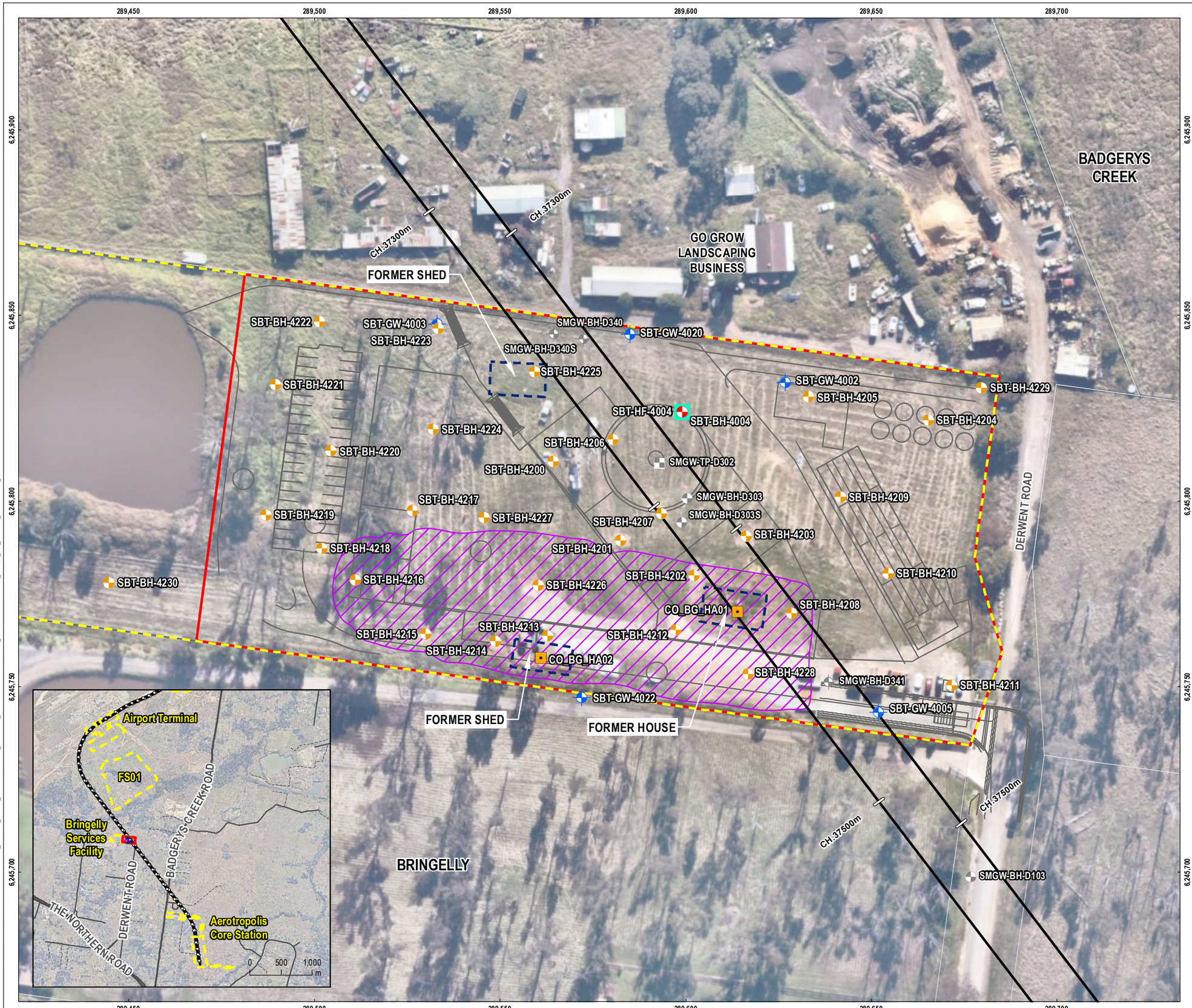
Yours faithfully
Ramboll Australia Pty Ltd

[redacted]
EPA Accredited Site Auditor 1505

[redacted]

Attachments: 1 Site Location
2 DSI Investigation Locations

Attachment 1: Site Location



LEGEND

Additional Contaminated Land Location
- Borehole
- Hand Sample

Additional Geotechnical/Hydrogeological Location
- Borehole
- Monitoring Well
- Hydrofracture In-situ Stress Test

Existing Investigation Location
- Borehole
- Groundwater Borehole
- Test Pit
- Tunnel Alignment
- Tunnel Alignment - Chainage
- Bringelly Services Facility Site Layout
- ACM Fragments
- Former Structure
- Cadastral Boundary
- BSF Site Boundary
- Construction Footprint

SOURCE
Contaminated land locations, additional investigations, site boundary, construction footprint boundary, former structures, and ACM fragments from Tetra Tech Coffey.
Existing investigations and alignment supplied by CPBG.
Cadastre from DFSI.
Aerial imagery from Nearmap (capture date 15-06-2022).

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PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 1

Bringelly Services Facility - Investigations within Construction Boundary

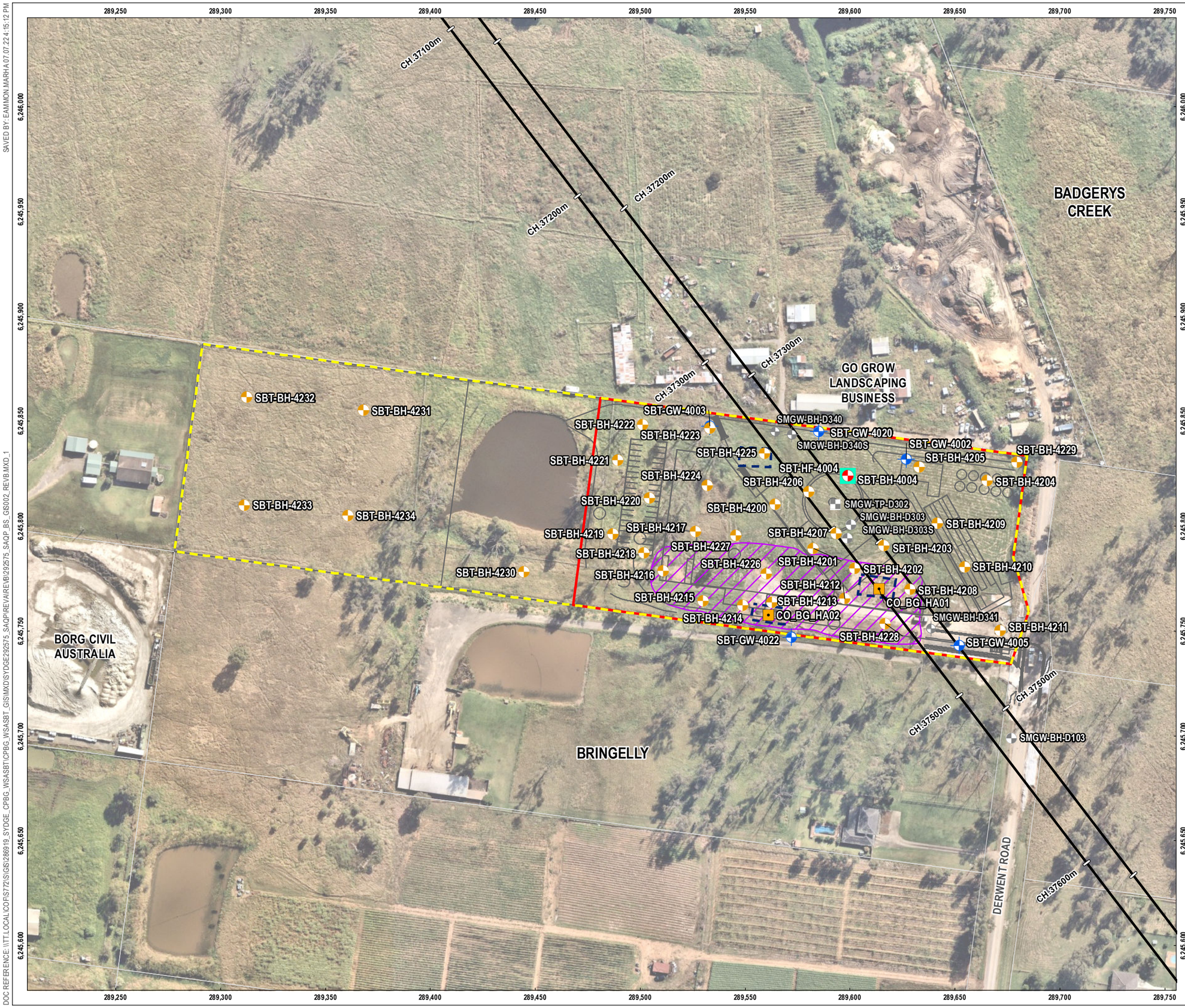
TETRA TECH COFFEY

DATE: **29.07.22** PROJECT: **754-SYDGE292575** FILE: **292575_SAQP_BS_F001_GIS**

DOC REFERENCE: \\TTLOCALICOFS772\GIS\GIS\286919_SYDGE_CPBG_WSASBT\CPBG_WSASBT_GIS\MXD\SYDGE292575_SAQP\REVA\292575_SAQP_BS_GIS001_REVB.MXD_4

SAVED BY: EAMMON.MARHA 29.07.22 4:12:43 PM

Attachment 2: DSI Investigation Locations



LEGEND

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- Monitoring Well
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- Tunnel Alignment
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SOURCE
Contaminated land locations, additional investigations, site boundary, construction footprint boundary, former structures, and ACM fragments from Tetra Tech Coffey.
Existing investigations and alignment supplied by CPBG.
Cadastre from DFSI.
Aerial imagery from Nearmap (capture date 18-02-2022).

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SCALE **1:1,750**
PAGE SIZE: **A3**
PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 2

Bringelly Services Facility - Investigations within Site Boundary

TETRA TECH COFFEY

DATE: **07.07.22** PROJECT: **754-SYDGE292575** FILE: **292575_SAQP_BS_F002_GIS**

SAVED BY: EAMMON.MARHA 07.07.22 4:15:12 PM
DOC REFERENCE: \\TT.LOCAL\COR\S772\SIG\286919_SYDGE_CPBG_WSASBT\CPBG_WSASBT\GIS\MXD\SYDGE292575_SAQP\REVAIR\EVB\292575_SAQP_BS_GIS002_REVB.MXD_1

RAMBOLL

ENVIRONMENT
& HEALTH

23 September 2022

CPB Contractors Pty Ltd and Ghella Pty Ltd
Attn: [redacted] [redacted]
Level 2, 177 Pacific Highway
North Sydney NSW 2060

By email: [redacted].[redacted].com.au

Dear [redacted]

RE: INTERIM AUDIT ADVICE LETTER NO.5 - PROPOSED PREPARATORY WORKS, PROPOSED SYDNEY METRO WESTERN SYDNEY AIRPORT, BRINGELLY SERVICES FACILITY, BRINGELLY NSW

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Ref: 318001447-006

Audit Number: TO-095

Introduction

As a NSW Environment Protection Authority (EPA) accredited Contaminated Sites Auditor, on behalf of CPB Contractors Pty Ltd and Ghella Pty Ltd (CPBG), I am conducting an Audit (TO-095) under the NSW *Contaminated Land Management Act 1997* (CLM Act) in relation to the proposed Bringelly Services Facility (BSF, also referred to as 'the site') located at 40 Derwent Road, Bringelly, New South Wales (NSW). The site, which forms part of the Sydney Metro - Western Sydney Airport (SMWSA) Rail Project (the SMWSA rail project), is legally identified as Lot 181 Deposited Plan (DP) 806012. The site occupies an area of approximately 3.9 hectares (ha) and the site locality is shown on Attachment 1.

The Audit is a requirement of Conditions E94, E96 and E97 of Critical State Significant Infrastructure (CSSI) approval 10051, issued on 23 July 2021 by the Minister for Planning and Public Spaces. The Audit is therefore statutory. The overall objective of the Audit is to enable a Section A Site Audit Statement (SAS) and supporting Site Audit Report (SAR) to be prepared that confirms the site is suitable for the proposed development.

It is understood that construction activities at the proposed BSF will include establishment of temporary facilities such as offices, amenities, car parking and a water treatment plant, and piling and shaft excavation to approximately 30 metres below ground level (mbgl) or 42.5 m Australian height datum (AHD). The shaft will have a diameter of approximately 27 m and will be tanked (undrained) upon completion.

To achieve the intended environmental performance outcomes of the SMWSA rail project and address the requirements of the CSSI approval, CPBG have prepared *Asbestos Management Plan* (the AMP) (Rev A dated 2 February 2022) and *NSW (Off-Airport) Soil and Water Management Sub-Plan* (the Sub-Plan) (Rev A dated 19 May 2022). The AMP provides a documented process to control the risk of exposure to asbestos during soil disturbance, demolition and other activities, whilst the Sub-Plan includes a Contamination and PASS Management

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Procedure for management of unexpected finds and potential acid sulfate soils (PASS). The Auditor has previously reviewed and provided feedback on these plans. Overall, the Auditor found them to be adequate.

Scope of Preparatory Construction Works

CPBG are proposing to undertake preparatory construction related works including:

- Clearing and grubbing of vegetation and surface soils for establishment of temporary facilities (Attachment 3).
- Construction of the shaft using secant piles and top-down excavation method. A piling pad will also be constructed. Piling staging diagram are included as Attachment 2.

CPBG have noted that spoil from the piling works will be sampled for waste classification purposes and placed in stockpiles as required. CPBG have provided a Waste and Recycling Management Procedure for the classification, management and disposal of waste spoil (Attachment 4). CPBG have indicated that any groundwater from dewatering activities will be captured, treated and disposed of in accordance with internal permits until the water treatment plant is operational.

The purpose of this Interim Audit Advice (IAA) letter (IAA5) is to confirm that preparatory construction related works can commence, subject to the controls listed in the conclusions and recommendations below. This IAA should be read in conjunction with my previous IAA titled "*Interim Audit Advice Letter No.4 - Review of Detailed Site Investigation, Proposed Sydney Metro Western Sydney Airport Bringelly Services Facility, Bringelly NSW*" (IAA4) dated 15 September 2022.

Known Extent of Contamination and Implications for Preparatory Construction Works

The site has been subject to intrusive investigations of soil and groundwater. More recently a detailed site investigation (DSI) was undertaken by Tetra Tech Major Projects Pty Ltd (TTMP). The DSI included test pitting, geotechnical drilling, and installation, development and sampling of new groundwater monitoring wells. The DSI focused on areas where preparatory construction works are proposed. The DSI (dated 7 September 2022) was reviewed by the Auditor in IAA4.

Analysis of the soil samples during the DSI did not identify asbestos or concentrations of contaminants above the human health and/or ecological criteria. Notwithstanding this, one piece of asbestos containing material (ACM) was noted on the ground surface within an area denoted as the 'ACM Fragments' area (Attachment 1). This find is considered an indicator that other undetected fragments of ACM may be present in fill within the footprint of the former site structures.

Groundwater samples analysed during the DSI contained metals, ammonia and perfluorooctane sulfonate (PFOS) concentrations exceeding the adopted ecological criteria. Based on the location of the nearest surface water receptor and the attenuation potential of contaminants along the groundwater flow direction, the site groundwater is anticipated to pose a low environmental risk to off-site ecological receptors. The site groundwater is not expected to pose unacceptable risks to workers that enter the tunnel shaft, particularly given that ingestion of groundwater within this construction setting (i.e., primary mode of exposure) would be accidental.

Based on the results of the DSI, TTMP concluded that "*…the soil within the site poses a low risk of contamination to the project given that no gross contamination was identified within the site"* and that "*…the site is considered suitable for the proposed development (shaft and maintenance facility / industrial land use)…*".

TTMP recommended the following:

- "*CPG*[1] *engage a competent person during disturbance of topsoil/fill materials (observed to a depth of approximately 0.2 m) to visually monitor for signs of potential contamination and*

[1] Namely CPBG.

potential ACM. If evidence of potential ACM or other indications of potential contamination are noted (e.g., stained or odorous soils, buried wastes, etc) work should cease pending further investigation of this material by TTMP. The competent person must be experienced in the undertaking excavation/remediation works and have the necessary experience to identify soil materials containing ACM and unforeseen contamination.

- *Topsoil (fill) materials (observed to a depth of approximately 0.2 m) are stockpiled separately to natural soils, and stockpiles are managed in accordance with the requirements of the CEMP.*
- *No soil materials shall be removed from the site without a Waste Classification Report and / or a Material Classification Report.*
- *A surface water and sediment sample be collected from the dam to provide baseline conditions prior to the commencement of construction.*
- *Six-monthly construction groundwater monitoring be carried out to detect any changes in groundwater quality.*
- *Adequate documentation is required to be collected to confirm the chemical suitability of imported materials (if any). The documentation will need to be included in a validation report demonstrating the suitability of the site post-construction (along with other data generated)".*

Auditor's Opinion

The Auditor generally agrees that soil and groundwater within the areas of the proposed preparatory construction works do not present potential risks to human health or the environment based on the results of the DSI.

Given that there is a potential for asbestos to be encountered, monitoring of works for potential ACM by a competent person and segregation of fill as recommended in the DSI are appropriate to manage this uncertainty. In the event unexpected finds of asbestos or other unforeseen contamination are identified, the procedures within the AMP and/or Contamination and PASS Management Procedures within the Sub-Plan should be followed.

Groundwater is unlikely to pose unacceptable risks to human health during shaft excavation. The proposed six-monthly groundwater monitoring during construction will allow ongoing monitoring of such risks. Groundwater discharged from the site will need to undergo further testing and treatment to meet appropriate discharge criteria, if required.

Materials excavated during the preparatory construction works which are to be reused at the site or in the larger Airport site will need to be assessed to ensure suitability for reuse, alternatively material should be classified and disposed offsite in accordance with the Waste and Recycling Management Procedure in Attachment 4.

The Auditor understands that Conditions E93 and E94 of the CSSI approval require a Remediation Action Plan (RAP) to be prepared if remediation is required to make the land suitable for the intended land use. Prior to commencing remediation, a Section B SAS is to be prepared by a NSW EPA accredited Site Auditor reviewing the RAP. In the Auditors opinion, the preparatory construction works proposed by CPBG are development/construction related activities requiring spoil management, and do not constitute remediation. Therefore, the requirements outlined in conditions E93 and E94 would not prevent the preparatory construction works from being undertaken.

Conclusions and Recommendations

Preparatory construction works are not considered to constitute remediation works because significant contamination has not been identified in site soils and in site groundwater. However, the following actions (and those recommended in the DSI) are required to ensure any contamination identified during the works is dealt with appropriately to minimise risks to human health and the environment:

- Spoil is to be assessed in accordance with the Waste and Recycling Management Procedure (Attachment 4).
- Spoil is to be inspected for potential ACM by a competent person and the AMP implemented if required.
- Implementation of the AMP and/or the Contamination and PASS Management Procedures (Attachment 5) where required.
- Six-monthly groundwater monitoring during construction to allow ongoing monitoring of groundwater related risks.

Limitations

This IAA (No.5) was conducted on behalf of CPBG for the purpose of confirming that preparatory construction related works can commence at the BSF, subject to the controls listed in the Conclusions and Recommendations. This summary report may not be suitable for other uses.

The Auditor has relied on the documents referenced in this IAA in preparing the Auditor's opinion. The consultants included limitations in their reports. This IAA must also be subject to those limitations. The Auditor has prepared this document in good faith but is unable to provide certification outside of areas over which the Auditor had some control or is reasonably able to check. If the Auditor is unable to rely on any of those documents, the conclusions of this IAA could change.

It is not possible to present all data which could be of interest to all readers of this IAA. Readers are referred to the referenced reports for further data. Users of this document should satisfy themselves concerning its application to, and where necessary seek expert advice in respect to, their situation.

* * *

Consistent with the NSW EPA requirement for staged 'signoff' of sites that are the subject of progressive assessment, remediation and validation, I advise that:

- This advice letter does not constitute a Site Audit Report or Site Audit Statement.
- At the completion of the remediation and validation I will provide a Site Audit Statement and supporting documentation.
- This interim advice will be documented in the Site Audit Report.

Yours faithfully
Ramboll Australia Pty Ltd

[redacted]
EPA Accredited Site Auditor 1505

[redacted]

Attachments: 1 Site Location
2 Proposed Piling Works
3 Proposed Site Establishment Works
4 Waste and Recycling Management Procedure
5 Contamination and PASS Management Procedures

Attachment 1: Site Location

CPB CONTRACTORS

Ghella 1894 5 Generations of Tunnelers

LEGEND

Additional Contaminated Land Location
- Borehole
- Hand Sample

Additional Geotechnical/Hydrogeological Location
- Borehole
- Monitoring Well
- Hydrofracture In-situ Stress Test

Existing Investigation Location
- Borehole
- Groundwater Borehole
- Test Pit

- Tunnel Alignment
- Tunnel Alignment - Chainage
- Bringelly Services Facility Site Layout
- ACM Fragments
- Former Structure
- Cadastral Boundary
- BSF Site Boundary
- Construction Footprint
- ACM Soil Removal Area
- Low Risk AEC

SOURCE

Contaminated land locations, additional investigations, site boundary, construction footprint boundary, former structures, and ACM fragments from Tetra Tech Coffey.
Existing investigations and alignment supplied by CPBG.
Cadastre from DFSI.
Aerial imagery from Nearmap (capture date 15-06-2022).

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CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 1

Bringelly Services Facility - Investigations within Construction Boundary

TETRA TECH COFFEY

DATE: 29.07.22 PROJECT: 754-SYDGE292575 FILE: 292575_SAQP_BS_F001_GIS

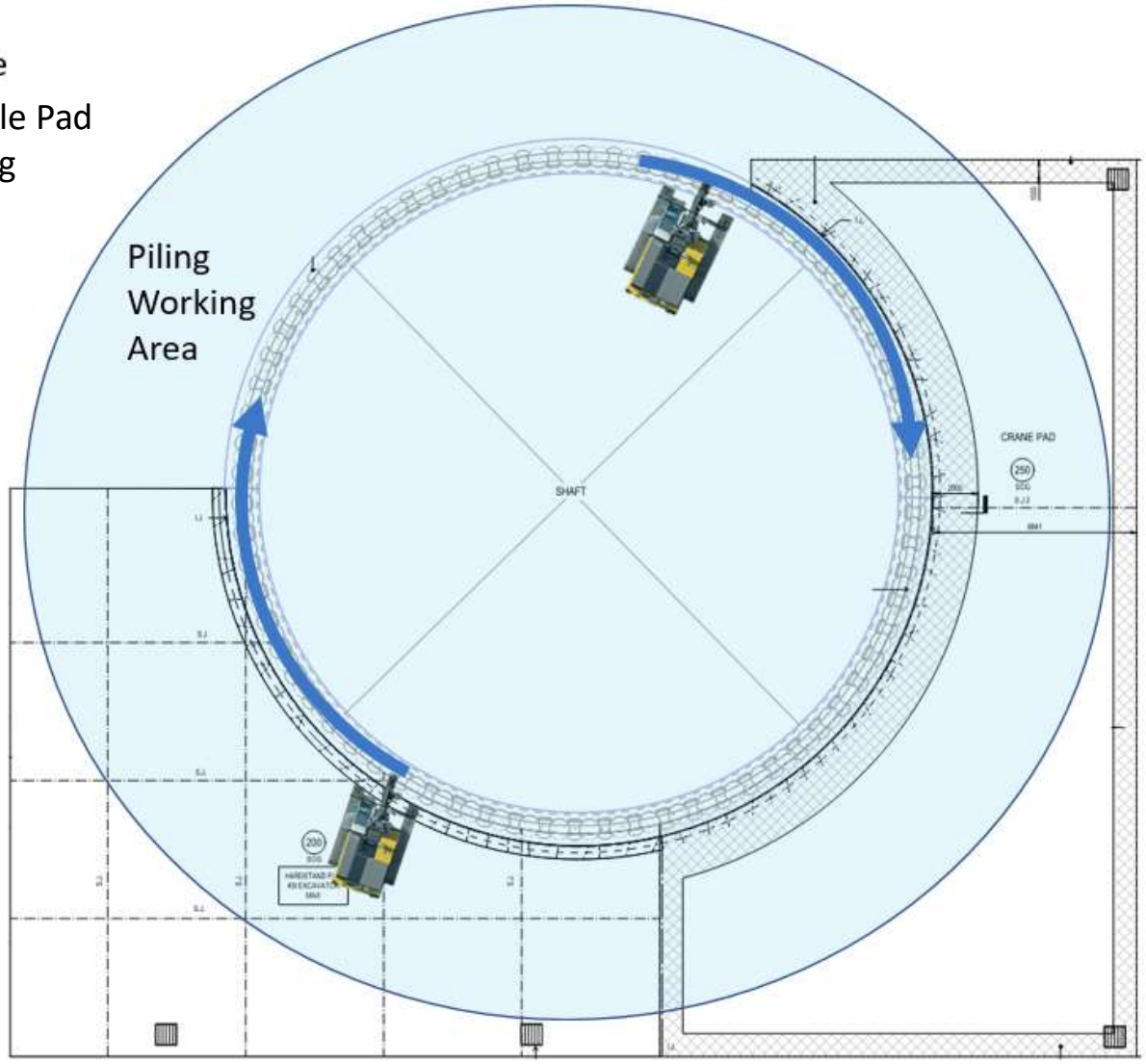
SAVED BY: EAMMON.MARHA 29.07.22 4:12:43 PM

DOC REFERENCE: \\TT.LOCAL\COFS\72\GIS\286919_SYDGE_CPBG_WSASBT_GIS\MXD\SYDGE292575_SAQP\REV A\292575_SAQP_BS_GIS001_REVB.MXD_4

Attachment 2: Proposed Piling Works

Bringelly Shaft Site

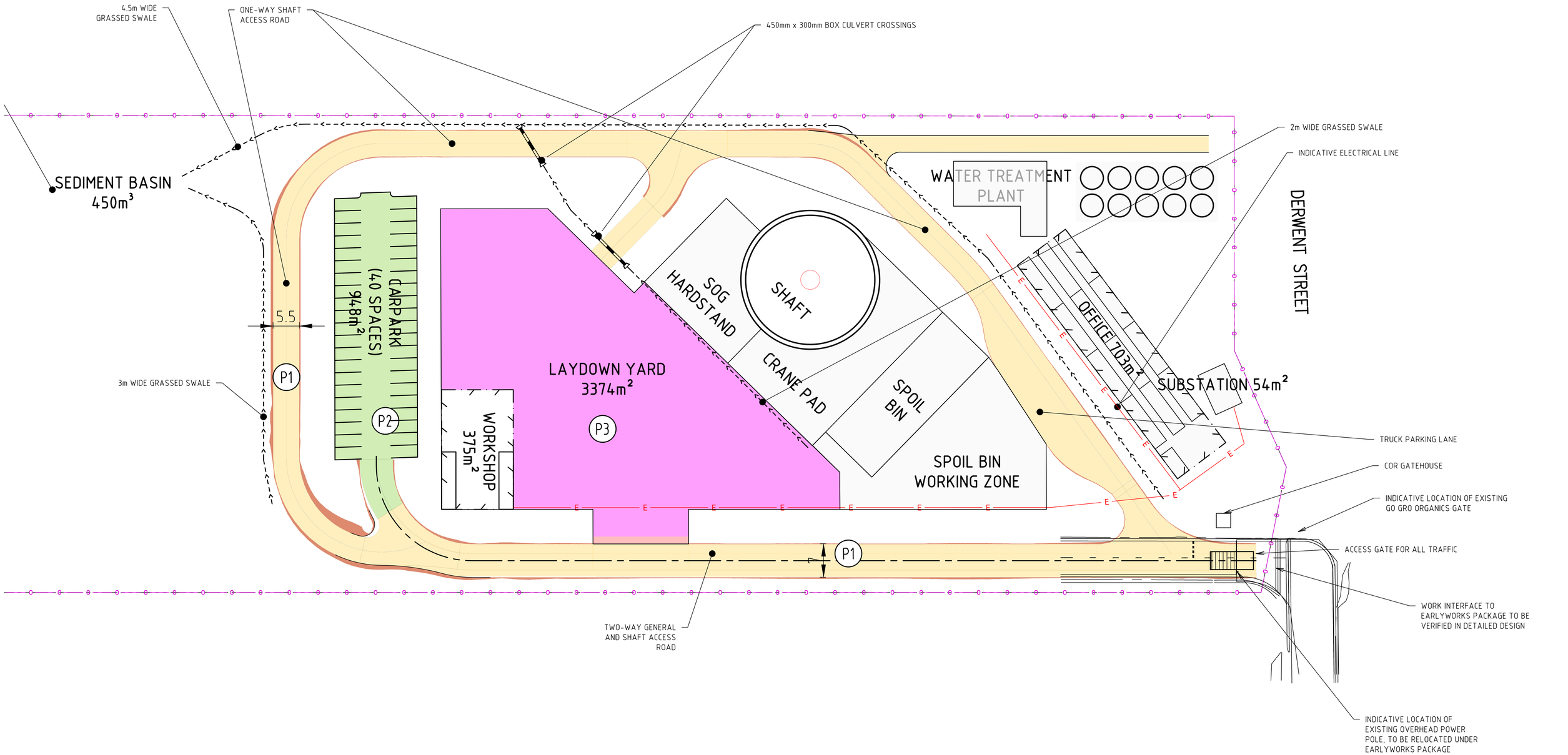
Construction of Pile Pad
Piling Rigs Working Sequence



CPB CONTRACTORS | Ghella

SYDNEY METRO - WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

Attachment 3: Proposed Site Establishment Works



WASTE AND RECYCLING MANAGEMENT PROCEDURE

MANAGEMENT AND RESPONSIBILITY

WASTE CLASSIFICATION
All waste (as defined in the POEO Act), including waste spoil, must be classified in accordance with the NSW Waste Classification Guidelines (EPA 2014). Waste that is not pre-classified must be sampled, analytically tested and a waste classification report prepared.

Environmental Coordinator
Environmental Consultant

HOLD POINT
Wastes that are unable to be reused or recycled will be exported to a site licenced by the EPA to accept the waste or in accordance with a valid Resource Recovery Exemption or Order, or to any other site that can lawfully accept such waste.

All Personnel

RECEIVAL LOCATION SITE CHECKS
Prior to spoil being transported off site to a location which does not hold an EPL, the receiving site landowner must confirm in writing that the site can legally accept the material and provide documentation as required by the respective Resource Recovery Exemption or Order.
Ensure the haulage contractor has written confirmation from the receival site that the spoil classification report is accepted, and this record has been provided to CPBG.

Spoil Manager
Site Engineer
Site Supervisor

MATERIAL MANAGEMENT
Potential sources of cross contamination will be identified and appropriate spoil management measures including segregation, stockpiling and direct loadout and waste tracking will be implemented in accordance with the associated Waste Classification Report and Remediation Action Plan (where relevant).

All Personnel

REJECTED LOADS
Waste that is rejected/returned due to contamination must be segregated and re-classified in accordance with the NSW Waste Classification Guidelines (EPA 2014).

Spoil Manager
Environmental Consultant

WASTE RECORDS

- A register of spoil receipt sites will be maintained, including the site or project name, location, capacity site owner and which tier the site is classified as under the spoil reuse hierarchy.
- All waste movements must be allocated by the haulage contractor and submitted to the site as a minimum the day before the intended waste movement.
- Each waste movement must be accompanied by a waste transfer docket which details as a minimum; the waste producer, the waste receival site, the waste classification, details of stockpiles or excavation location, the time and date of transfer, vehicle registration, quantity of material transferred and acceptance of the material at the receival site. Material tracking forms must be completed for material transferred between construction sites.
- For hazardous waste movements (if required), a consignment authorisation will be obtained from the facility which is receiving the waste, a transport certificate will be completed for each load of waste and the site will ensure the transporter is licensed or legally permitted to transport the waste.
- Waste dockets will be reviewed for content and maintained electronically on-site. The waste transfer information will be documented within the site Waste Tracking Register.
- All dockets for hazardous waste movements will be maintained for a minimum of four years.

Spoil Manager
Spoil Haulage Contractor
Site Supervisor
Site Engineer

REQUIREMENTS

Targets

- 100% beneficial reuse of useable spoil
- 95% beneficial reuse of inert and non-hazardous construction/demolition waste, excluding spoil
- 60% of office waste is recycled or alternatively beneficially reused
- Maximise water re-use and use of non-potable water
- Accurately calculate materials brought to site, limit packaging and prioritise products made from recycled content

Management

- Design development process will seek to minimise the generation of spoil and maximise beneficial reuse of spoil
- All waste generated will be assessed, classified and managed in accordance with NSW Waste Classification Guidelines (EPA 2014).
- Where waste has been classified as VENM/ENM, on-site re-use options are to be investigated prior to off-site reuse
- Spoil storage locations (including VENM, contamination and unsuitable material) are to be nominated on Environmental Control Maps as approved by the Environmental Representative. Storage locations will selected to minimise noise and traffic impacts associated with spoil transport.
- Waste generated outside the premises will not be received at the premises for use, storage, treatment, processing, reprocessing, or disposal unless expressly permitted under the Environmental Protection License (EPL) or relevant Resource Exemption.
- Contaminated material is to be managed in accordance with the Contamination and Acid Sulfate Soils Management Procedure. Asbestos is to be managed in accordance with the Project WHS Management Plan.

Monitoring and Recording

- Monitoring of all waste, disposal locations and associated volumes will be carried out for the duration of the Preparatory Works

WASTE STREAM	CLASSIFICATION
Spoil	Determined through chemical assessment
Rubble, rock, sand, asphalt, road base, concrete	General Solid Waste (Non-Putrescible)
Green waste	General Solid Waste (Non-Putrescible)
Timber waste/Off cuts	General Solid Waste (Non-Putrescible)
General recyclables	General Solid Waste (Non-Putrescible)
Metal waste/offcuts	General Solid Waste (Non-Putrescible)
Electrical wire waste/off cuts	General Solid Waste (Non-Putrescible)
Waste oil	Liquid Waste
Non-destructive digging wast	Liquid Waste
Potentially contaminated wate	Liquid Waste or Hazardous Liquid Waste
Asbestos	Special Waste
Food Waste, sanitary products	General Solid Waste (Putrescible)
General mixed waste	General Solid Waste (Non-Putrescible)

CONTAMINATION AND PASS MANAGEMENT PROCEDURE

MANAGEMENT AND RESPONSIBILITY

DETAILED SITE INVESTIGATIONS (DSI) and REMEDIAL ACTION PLAN (RAP)
A DSI is required prior to commencement of any construction that would result in the disturbance of medium to high risk contaminated sites (as defined in the EIS). Where remediation is required, a Section B Site Audit Statement is required prior to commencement of works (refer to the Preparatory CEMP for further details).

Environmental Coordinator
Project Manager

INDUCTION/ TOOLBOX TALKS
All personnel are to receive Project/Site Inductions and on-going training via Toolbox Talks which will include requirements of the RAP (if applicable)

All Personnel

NO EVIDENCE OF UNEXPECTED CONTAMINATION
If observations do not indicate the presence of potential contamination then excavation works continue.

HOLD POINT – EVIDENCE OF UNEXPECTED CONTAMINATION
If observations indicate the presence of potential contamination, stop all work in the immediate area. Notify the Site Supervisor and Environmental Coordinator and make the area safe.

Site Supervisor
Site Engineer
Lead Safety Manager
(to be notified)

ADDITIONAL ASSESSMENT
Environment Manager to engage a Contaminated Land Consultant (where necessary) to:
- Conduct a preliminary assessment of the contamination and the immediate management controls
- Provide advice on additional assessment and/or remediation works.

Suspected or identified contamination is to be characterised with consideration of the National Environment Protection (Assessment of Site Contamination) Measure 1999.

Environment Manager

MANAGEMENT STRATEGY
- Develop a plan for managing and/or re-mediating the suspect material
- CPBG Environment Manager to notify Sydney Metro and the ER

Project Manager
Lead Safety Manager
Environment Manager

STRATEGY IMPLEMENTATION
- Implement the approved management and/or remediation.
- If the material is to be removed, refer **to Waste and Recycling Management Procedure** for classification and disposal.
- Document compliance with the approved management and remediation provide relevant documentation to the disposal site (see waste management procedure), and the regulator (if required).

Environmental Coordinator
Site Supervisor
Site Engineer

RE-COMMENCEMENT OF WORKS
Once the contamination has been addressed, the Environment Manager is to approve re-commencement of works in the vicinity of the remediation site.

Potential Unexpected Finds

- **Fuels or oils**
- **Asbestos cement fragments or other potentially asbestos containing materials**
- **Odorous or stained soil**
- **Buried chemical drums, tanks, containers or waste**
- **Tarry or ashy material**
- **Brightly or unusually coloured material**
- **Yellow and/or red mottling in the soil profile indicating there may be Acid Sulfate Soils (ASS)**

Asbestos

An unexpected find occurs when Asbestos Containing Material (ACM) not identified in the Asbestos Register is found on site. In the event of an unexpected find, manage in accordance with the Project Asbestos Management Plan and the below steps:

1. The area is to be demarcated, works in the area to cease and workers warned
2. Notify the Site Supervisor who will notify the Project Manager
3. Control dust with dust suppression or by covering the area if feasible.
4. Arrange for testing of the suspected ACM and air monitoring of the area (if required)
5. Engage a licensed asbestos removalist to provide recommendations to treat the area, as required
6. Obtain a clearance certificate on completion of removal
7. The area is to be made safe.

Potential Acid Sulfate Soils (PASS)

PASS is naturally occurring soils, sediments or organic substrates that are formed under waterlogged conditions in coastal areas. When exposed to air, soils containing iron sulfides produce sulfuric acid which can result in the release of toxic quantities of iron, aluminium and other heavy metals. Prior to ground disturbance in areas of PASS, review PASS maps and conduct testing to determine the actual presence of acid sulfate soils. If acid sulfate soils are encountered, manage in accordance with the Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998). Possible management strategies include:

- Modifying location of temporary facilities to avoid the area of known PASS
- Delineation and removal to a suitably licenced facility
- Preparation and implementation of an on-site treatment procedure to neutralise the PASS, including adequate controls to mitigate potential environmental impacts

The management of any PASS must include appropriate erosion and sediment controls to minimise the potential for pollution of waters.

Key Contaminated Areas

To be populated following Detailed Site Investigations.

RAMBOLL

ENVIRONMENT
& HEALTH

27 October 2022

CPB Contractors Pty Ltd and Ghella Pty Ltd
Attn: [redacted]
Level 2, 177 Pacific Highway
North Sydney NSW 2060

By email: [redacted]

Dear [redacted]

RE: INTERIM AUDIT ADVICE LETTER NO.12 - REVIEW OF REMEDIATION ACTION PLAN, SYDNEY METRO WESTERN SYDNEY AIRPORT BRINGELLY SERVICES FACILITY, BRINGELLY NSW

Ramboll Australia Pty Ltd
Level 3, 100 Pacific Highway
PO Box 560
North Sydney NSW 2060

T +61 2 9954 8100
www.ramboll.com

Ref: 318001447-006

Audit Number: TO-095

1. Introduction and Objective

As a NSW Environment Protection Authority (EPA) accredited Contaminated Sites Auditor, on behalf of CPB Contractors Pty Ltd and Ghella Pty Ltd (CPBG), I am conducting an Audit (TO-095) under the NSW *Contaminated Land Management Act 1997* (CLM Act) in relation to the proposed Bringelly Services Facility (the BSF, also referred to as 'the site') located at 40 Derwent Road, Bringelly, New South Wales (NSW). The site, which forms part of the Sydney Metro - Western Sydney Airport (SMWSA) Rail Project (the SMWSA rail project), is legally identified as Lot 181 in Deposited Plan (DP) 806012. The site occupies an area of approximately 3.9 hectares (ha) and the site locality is shown on Attachment 1.

The SMWSA rail project includes construction of new stations, a train stabling and maintenance facility, rail infrastructure facilities, tunnels, bridges, viaducts and associated ancillary infrastructure. It is understood that preparatory construction activities[1] at the BSF will include establishment of temporary facilities such as offices, amenities, car parking and a water treatment plant, and piling and shaft excavation to approximately 30 metres below ground level (mbgl) or 42.5 m Australian height datum (AHD). The shaft will have a diameter of approximately 27 m and will be tanked (undrained) upon completion.

This Interim Audit Advice (IAA) letter (IAA12) was prepared to document an independent review of a remediation action plan (RAP) prepared for the site. The review and preparation of the IAA were a requirement of Clause 12.20(c)(ix) of the Deed (*Sydney Metro (2022) Sydney Metro - Western Sydney Airport, Station Boxes and Tunnelling Works Design and Construction)* between Transport for NSW and CPBG (discussed in Section 4).

Based on the findings of a detailed site investigation (the DSI, Section 2), remediation of the BSF site was not considered to be required, and as such,

[1] Referred to as "construction activities" or "construction works" in some reports.

preparation of a remediation action plan (RAP) was not required. However, a RAP has been prepared by TTMP to satisfy the requirements of the Deed and document procedures to manage potential asbestos impacted materials and the controls to be implemented with regard to the management of spoil during construction works and the importation of material.

The audit requirements of Critical State Significant Infrastructure (CSSI) approval 10051, issued on 23 July 2021 by the Minister for Planning and Public Spaces are not considered to be triggered.

2. Background on the DSI

The DSI was undertaken between April 2022 and August 2022 by Tetra Tech Major Projects Pty Ltd (TTMP) and included test pitting, geotechnical drilling, sampling of existing groundwater monitoring wells and installation, development and sampling of new groundwater monitoring wells. The DSI focused on areas where excavation and soil disturbance were planned for construction works. The following findings were reported in the DSI:

- One fragment of potential asbestos containing material (PACM) was observed on the ground surface within the footprint of a former residential dwelling. The fragment was sampled, and subsequent laboratory testing confirmed it contained chrysotile and amosite asbestos. The single ACM occurrence was considered an indicator that other undetected fragments of ACM may exist in fill within the footprint of other former on-site structures.
- Analysis of the soil samples did not identify asbestos. The reported contaminant concentrations in soil samples were below the adopted health and ecological criteria.
- Perfluorooctane sulfonate (PFOS), copper, nickel, zinc and ammonia were detected in site groundwater at concentrations exceeding the adopted ecological criteria.
- Dewatering of the tunnel shaft excavation would temporarily alter the groundwater gradient, drawing groundwater into this excavation. It was assessed that the contaminant concentrations reported in groundwater would not pose unacceptable risks to human health in a generic commercial/industrial land-use setting.

Based on the results of the DSI, TTMP concluded that "*…the soil within the site poses a low risk of contamination to the project given that no gross contamination was identified within the site"* and that "*…the site is considered suitable for the proposed development (shaft and maintenance facility / industrial land use) …*".

TTMP recommended the following:

- "*CPG[2] engage a competent person during disturbance of topsoil/fill materials (observed to a depth of approximately 0.2 m) to visually monitor for signs of potential contamination and potential ACM. If evidence of potential ACM or other indications of potential contamination are noted (e.g., stained or odorous soils, buried wastes, etc) work should cease pending further investigation of this material by TTMP. The competent person must be experienced in the undertaking excavation/remediation works and have the necessary experience to identify soil materials containing ACM and unforeseen contamination.*
- *Topsoil (fill) materials (observed to a depth of approximately 0.2 m) are stockpiled separately to natural soils, and stockpiles are managed in accordance with the requirements of the CEMP.*
- *No soil materials shall be removed from the site without a Waste Classification Report and / or a Material Classification Report.*
- *A surface water and sediment sample be collected from the dam to provide baseline conditions prior to the commencement of construction.*

[2] Namely CPBG.

- *Six-monthly construction groundwater monitoring be carried out to detect any changes in groundwater quality.*
- *Adequate documentation is required to be collected to confirm the chemical suitability of imported materials (if any). The documentation will need to be included in a validation report demonstrating the suitability of the site post-construction (along with other data generated)".*

The Auditor conducted an independent review of the DSI and documented review outcomes in IAA4 dated 15 September 2022, which concluded that the DSI adequately assessed the site soil and groundwater conditions and the DSI recommendations were appropriate for managing the potential risks to human-health and the environment during construction.

The Auditor also prepared IAA5 dated 23 September 2022 which reviewed the DSI results with respect to proposed preparatory construction works. The Auditor agreed in IAA5 that preparatory construction works were not considered to constitute remediation works because significant contamination had not been identified in site soils and groundwater. However, the following actions (and those recommended by TTMP in the DSI) were required to ensure any contamination identified during the works was dealt with appropriately to minimise risks to human health and the environment:

- Spoil is to be assessed in accordance with the Waste and Recycling Management Procedure.
- Spoil is to be inspected for potential ACM by a competent person and the AMP implemented if required.
- Implementation of the AMP and/or the Contamination and PASS Management Procedures where required.
- Six-monthly groundwater monitoring during construction to allow ongoing monitoring of groundwater related risks.

A RAP was prepared to satisfy the requirements of the Deed and document procedures to manage potential asbestos impacted materials and the controls to be implemented with regard to the management of spoil during construction works and the importation of material. The adequacy of the RAP is reviewed in this IAA.

3. Scope of Work

The following report was reviewed for this IAA:

- '*Bringelly Services Facility Remedial Action Plan, Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works*' (Rev A.04) dated 21 October 2022, TTMP (*the RAP*).

I provided review comments on previous versions of the RAP (A.02 dated 13 September 2022 and A.03 dated 14 October 2022) via email and received the above revised report.

I reviewed the RAP against the requirements of the following:

- ANZG (2018) '*Australian and New Zealand Guidelines for Fresh and Marine Water Quality*'. Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia.
- Chapter 4 Remediation of Land in the Resilience and Hazards State Environment Planning Policy (SEPP) 2021 (formerly known as SEPP 55) and NSW Department of Urban Affairs and Planning and NSW EPA (1998) 'Managing Land Contamination, Planning Guidelines SEPP 55 - Remediation of Land'.
- HEPA (2020) '*PFAS National Environmental Management Plan, Version 2.0 – January 2020*'.
- National Environment Protection Council (NEPC) '*National Environment Protection (Assessment of Site Contamination) Measure 1999'*, as Amended 2013 (NEPM, 2013).

- NSW EPA (2017) '*Guidelines for the NSW Site Auditor Scheme (3rd Edition)*'.
- NSW EPA (2020) '*Contaminated Land Guidelines, Consultants Reporting on Contaminated Land'.*
- NSW EPA (2022) '*Contaminated Land Guidelines, Sampling design Part 1- application*' and '*Sampling design Part 2- interpretation*'.

4. Review of RAP

As indicated in Section 1, the RAP has been prepared to address the relevant Deed requirements.

TTMP noted that the RAP was specific to preparatory construction works including the area of the shaft and surface construction activities. The objectives of the RAP were to outline specific requirements to manage spoil from the site and supplement controls covered under the existing project specific management plans including Soil and Water Management Sub-Plan, Waste and Recycling Management Sub-Plan, Spoil Management Sub-Plan and Asbestos Management Plan. The Soil and Water Management Sub-Plan also includes an unexpected finds procedure if observations during earthworks indicate the presence of potential contamination

The RAP identified the following aspects requiring management during the preparatory construction works and provided relevant management actions:

- Fill within the area where the ACM was observed during the DSI (denoted as 'ACM Fragment' on Attachment 1) requires management to prevent the potential cross contamination of other materials that do not contain asbestos (Section 4.3 of the RAP).
- Surplus spoil requires classification to enable beneficial reuse, or off-site disposal to a licensed landfill (Section 4.5 of the RAP).
- Assessment of imported materials (Section 4.6 of the RAP).
- Assessment of unexpected finds in accordance with the Unexpected Contaminated Finds Protocol

The RAP also required preparation of a validation report to confirm that the site is suitable for generic commercial/industrial land use at the completion of the construction works.

The RAP did not include a remedial options assessment and remediation strategy as the DSI did not identify a requirement to implement remediation works at the site.

4.1. Deed Compliance Summary

Table 4.1 has been prepared to document compliance with Clause 12.20 of the Deed. It is noted that a copy of the Deed has not been provided to the Auditor and Deed Items in Table 4.1 are sourced from the RAP.

Table 4.1: Clause 12.20 Deed Compliance Assessment

Deed Clause	Deed Item	Auditor's Comments
12.20(a)	The SBT Contractor must prepare and submit to the Principal's Representative and Independent Certifier a RAP in respect of the DSI performed in accordance with clause 12.19 prior to commencing any excavation activities (except in relation to Preliminary Works).	Outside Auditor's scope, however it is noted that a DSI and a RAP have been prepared.
12.20(b)	Except in relation to the RAP in respect of Orchard Hills East Station, the SBT Contractor may not submit a RAP unless and until the DSI report for the relevant area has been submitted to the Principal's Representative and has not been the subject of notice under clause 12.19(f)(ii) within the time period specified in clause 12.19(f)(ii) (or clause 12.19(g)) as applicable.	Outside Auditor's scope, however it is noted that both a DSI and a RAP have been prepared.

Deed Clause	Deed Item	Auditor's Comments
12.20(c)(i)	Each RAP must describe the nature and extent of contamination based on the DSI, the Information Documents and any other relevant information which is necessary to characterise risk to the construction, operation and maintenance of Sydney Metro – Western Sydney Airport.	Section 3 of the RAP included a summary of previous site investigations, including the DSI.
12.20(c)(ii)	Each RAP must describe the manner in which the SBT Contractor will remediate contamination within the proposed areas of excavation and/or disturbance	Section 4 of the RAP included actions required for managing soil, surplus spoil and imported materials during construction.
12.20(c)(iii)	Each RAP must include a detailed risk assessment to determine and describe the requirements for remediation of contamination of land (including soil, groundwater, ground gas and vapour) within the construction site or extra land surrounding areas of proposed excavation or disturbance with respect to potential exposure scenarios, including but not limited to migration of contamination via groundwater, ground gas and odour into areas of excavation or disturbance	Not discussed in the RAP. However, Section 10 of the DSI presented a conceptual site model which identified contamination source, pathway and receptor linkages at the site.
12.20(c)(iv)	Each RAP must present a preferred remediation option based on: A. Whole of life costs B. To the extent practicable, maintaining the overall D&C program C. Benefits (as far as is practicable based on available infrastructure design information) D. Compliance with this deed	Not applicable. Section 4.2 of the RAP noted that previous investigations completed within the site did not identify contamination that would trigger the need to undertake remediation at the site.
12.20(c)(v)	Each RAP must define what will constitute Remediation Practical Completion of the Remediation	Not explicitly stated, however Section 4.8 of the RAP noted that a validation report is to be completed following completion of site construction to confirm site suitability for generic commercial/industrial land use.
12.20(c)(vi)	Each RAP must be prepared in accordance with law, approvals, applicable codes and standards, the lawful requirement of any authority, good industry practice, all guidelines made or approved by the EPA, the national remediation framework, the human health and environmental risk assessment and any other requirement of this deed	Section 1.4 of the RAP outlined applicable legislation, guidelines, codes of practice and standards which were applicable to the RAP. A list of references was also provided in Section 6.
12.20(c)(vii)	Each RAP must be reviewed and approved by a certified contaminated land consultant	The version history page of the RAP indicated that the internal reviewer is a certified contaminated land consultant.
12.20(c)(viii)	Each RAP must be reviewed and endorsed by an Accredited Site Auditor	RAP has been reviewed and endorsed as documented in this IAA.
12.20(c)(ix)	Each RAP must be accompanied by an interim site audit advice prepared by the accredited Site Auditor when submitted to the Principal's Representative and the Independent Certifier in accordance with clause 1.1(a)	RAP has been reviewed and endorsed as documented in this IAA. Submission is outside Auditor's scope of works.
12.20(c)(x)	Each Remediation Action Plan must include details of any Remediation completed during the performance of any Preliminary Works.	Previous investigations completed within the site did not identify contamination that could trigger the need to implement remediation at the site. However, to minimise risks to human health and the environment, the RAP (especially

Deed Clause	Deed Item	Auditor's Comments
		Section 4) outlined actions required for managing soil, surplus spoil and imported materials during construction.
12.20(c)(xi)	Each Remediation Action Plan must consider and plan to mitigate the migration of Contamination from the Construction Site.	Section 4 of the RAP included actions required for managing soil, surplus spoil and imported materials during construction. These actions if successfully implemented are expected to mitigate the migration of contamination from the site.
12.20(d)(i)	In addition to the requirements set out in clause 1.1(c) and without limiting clause 12.20(j), each Remediation Action Plan must contain sufficient detail and justification to enable the determination of any Agreed Remediation Scope, including an ACC Classification and Excavation Map, being a detailed map or maps, drawn to a practical scale of the relevant area the subject of a Remediation Action Plan that accurately identifies: A. the location of any samples that have been taken by and/or made available to the SBT Contractor, including the Detailed Site Investigation samples or any relevant information provided to the SBT Contractor in the Information Documents. B. a detailed mapping of remaining Solid Waste and its respective waste classification in accordance with the Waste Classification Guidelines and the relevant provisions of the POEO Act including resource recovery exemptions and orders across the relevant area the subject of a Remediation Action Plan, based on the relevant Detailed Site Investigations and clearly detailing the extent of lateral and vertical classification of Waste within each area the subject of a Remediation Action Plan.	Figure 3 in Appendix 1 of the RAP presented historical sampling locations completed at the site. The RAP also noted that: • Plans which show waste classification of materials to be excavated will be included in the Material Classification Report to be prepared for the site separately. • Fill soils would be preliminary classified as General Solid Waste (non-putrescible) or Special Waste (Asbestos Waste). Natural soils would be provisionally classified as General Solid Waste (non-putrescible). • Surplus spoil generated from development within the site were to be assessed to enable beneficial reuse or off-site disposal. The associated records would be included in the validation report as required.
12.20(d)(ii)	In addition to the requirements set out in clause 1.1(c) and without limiting clause 12.20(j), each Remediation Action Plan must contain sufficient detail and justification to enable the determination of any Agreed Remediation Scope, including a detailed excavation plan that is consistent with the ACC Classification and Excavation Map prepared under clause 1.1(d)(i) describing the quantities in tonnes and cubic metres of each material, including a register in estimated tonnes and cubic metres of each waste classification of Solid Waste, proposed to be excavated and to be reused and/or disposed offsite (ACC Excavation Quantity Register);	Figure 3 in Appendix 1 of the RAP illustrated Construction Footprint. The RAP also noted that '*Plans which show waste classification of materials to be excavated will be included in the Material Classification Report to be prepared for the site separately'*. The RAP also required the validation report to include: • Details on waste classification, tracking and off-site disposal. • Details on the reuse of materials on site.
12.20(d)(iii)	In addition to the requirements set out in clause 1.1(c) and without limiting clause 12.20(j), each Remediation Action Plan must contain sufficient detail and justification to enable the determination of any Agreed Remediation Scope, including details of any other elements of Remediation that are required to mitigate risks to the construction, operation and maintenance of Sydney Metro – Western Sydney Airport including, but not limited to infrastructure design requirements, treatment of Contamination, capping and containment.	Section 4 of the RAP included actions required for managing soil, surplus spoil and imported materials during construction.

Deed Clause	Deed Item	Auditor's Comments
12.20(d)(iv)	In addition to the requirements set out in clause 1.1(c) and without limiting clause 12.20(j), each Remediation Action Plan must contain sufficient detail and justification to enable the determination of any Agreed Remediation Scope, including precise details of how the validation of Remediation will be achieved and demonstrated.	Section 4.8 of the RAP noted that a validation report was to be developed following completion of site construction to confirm the site suitability for generic commercial/industrial land use.

Auditor's Opinion: As indicated in Table 4.1, the RAP contents have generally satisfied the relevant Deed requirements, noting that the required waste related documentation will be provided in separate documents, i.e. the proposed Validation Report and Material Classification Report.

5. Conclusions and Recommendations

Overall, in the Auditor's opinion, investigation of the site has not identified the need for significant remediation of soil or groundwater, however, management actions are required to ensure any contamination identified during the preparatory construction works is dealt with appropriately to minimise risks to human health and the environment. The management approach recommended in the RAP is considered adequate. If adequately implemented, the RAP should render the site suitable for generic commercial/industrial land use, however, successful validation of preparatory construction works will be required to confirm this.

The Auditor notes that inputs from CPBG will be required when developing the proposed validation report. It is therefore recommended that TTMP clearly articulate the RAP requirements with CPBG throughout the preparatory construction works.

6. Limitations

This interim audit advice (IAA12) was conducted on behalf of CPBG for the purpose of assessing the suitability and appropriateness of a remedial action plan (RAP). This summary report may not be suitable for other uses.

The Auditor has relied on the documents referenced in Section 3 in preparing the Auditor's opinion. The consultants included limitations in their reports. This interim audit advice must also be subject to those limitations. The Auditor has prepared this document in good faith but is unable to provide certification outside of areas over which the Auditor had some control or is reasonably able to check. If the Auditor is unable to rely on any of those documents, the conclusions of this interim audit advice could change.

It is not possible to present all data which could be of interest to all readers of this interim audit advice. Readers are referred to the referenced reports for further data. Users of this document should satisfy themselves concerning its application to, and where necessary seek expert advice in respect to, their situation.

* * *

Consistent with the NSW EPA requirement for staged 'signoff' of sites that are the subject of progressive assessment, remediation and validation, I advise that:

- This advice letter does not constitute a Site Audit Report or Site Audit Statement.
- At the completion of the remediation and validation I will provide a Site Audit Statement and supporting documentation.
- This interim advice will be documented in the Site Audit Report.

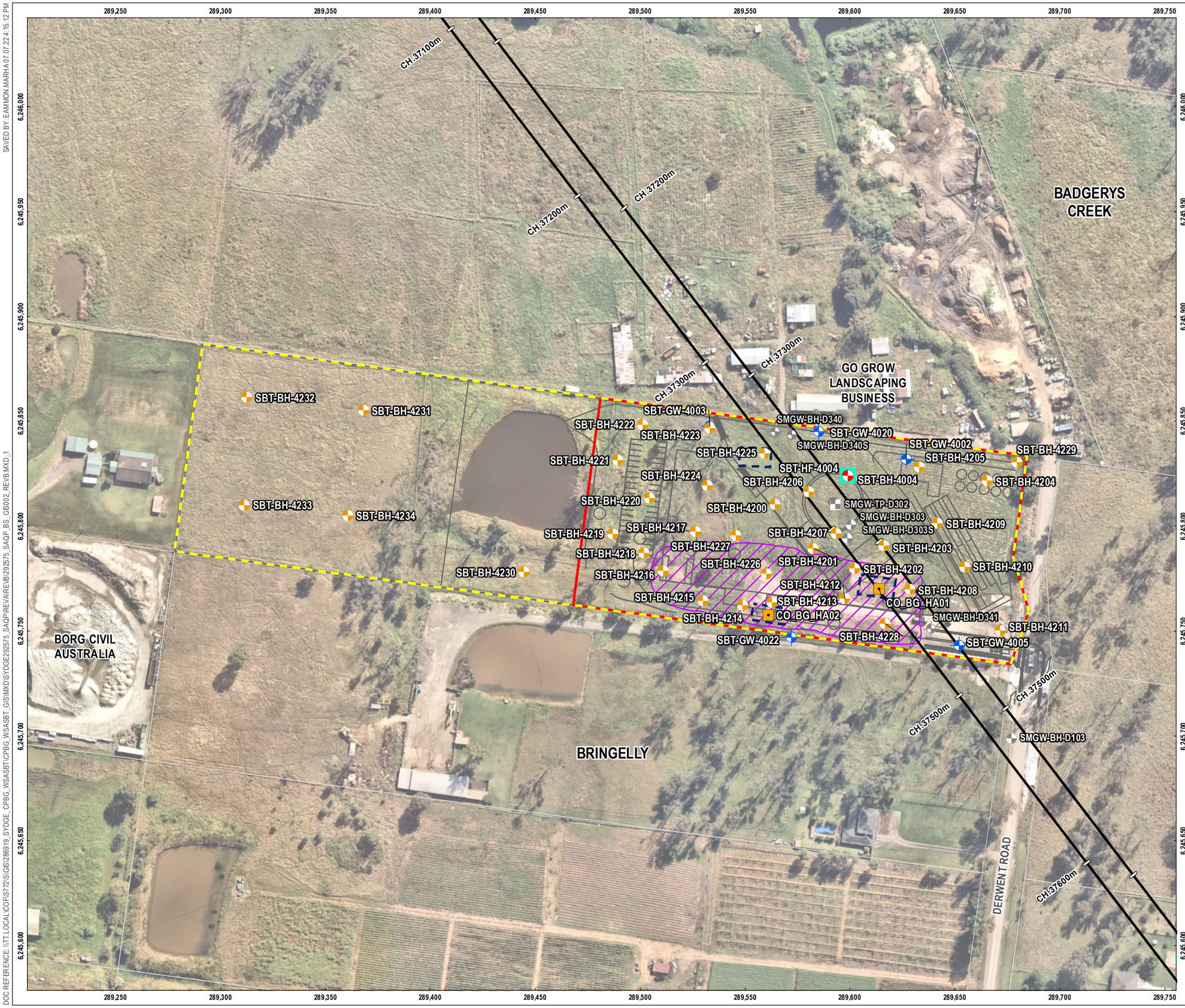
Yours faithfully
Ramboll Australia Pty Ltd

[redacted]
EPA Accredited Site Auditor 1505

[redacted]

Attachment: 1 Site Location Plan

Attachment 1: Site Location Plan



LEGEND

Additional Contaminated Land Location
- Borehole
- Hand Sample

Additional Geotechnical/Hydrogeological Location
- Borehole
- Monitoring Well
- Hydrofracture In-situ Stress Test

Existing Investigation Location
- Borehole
- Groundwater Borehole
- Test Pit
- Tunnel Alignment - Chainage
- Tunnel Alignment
- Bringelly Services Facility Site Layout
- ACM Fragments
- Former Structure
- Cadastral Boundary
- BSF Site Boundary
- Construction Footprint

SOURCE
Contaminated land locations, additional investigations, site boundary, construction footprint boundary, former structures, and ACM fragments from Tetra Tech Coffey.
Existing investigations and alignment supplied by CPBG.
Cadastre from DFSI.
Aerial imagery from Nearmap (capture date 18-02-2022).

N

0 25 50 m

SCALE **1:1,750**
PAGE SIZE: **A3**
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CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 2

Bringelly Services Facility - Investigations within Site Boundary

TETRA TECH COFFEY

DATE: **07.07.22** PROJECT: **754-SYDGE292575** FILE: **292575_SAQP_BS_F002_GIS**

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