SYDNEY METRO - WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

Bringelly Services Facility Remediation Action Plan

Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works

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Table of contents

Table of tables

Table of figures

Appendices

Abbreviations

Abbreviation	Definition
ACM	Asbestos Containing Material
AEPR	Airports Environment Protection Regulations 1997
AHD	Australian height datum (0 AHD corresponds roughly to mean sea level)
AMP	Asbestos Management Plan
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999
ASS	Acid Sulfate Soil
ATM	Airport Terminal Station
bgs	Below ground surface
BSF	Bringelly Service Facility
BTEX	Benzene, toluene, ethylbenzene, xylene
CEMP	Construction Environment Management Plan
CMF	Claremont Meadows Service Facility
COPC	Chemicals of potential concern
CPBG	CPB Contractors Ghella
DSI	Detailed Site Investigation
EPL	Environment Protection License
LOR	Limit of Reporting
mbTOC	Metres below Top of Casing
NSW EPA	Environment Protection Authority of New South Wales
OCP	Organochlorine Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PFAS	Per- and poly-fluoroalkyl substances
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonate
POEO	Protection of the Environment Operations Act 1997
RAP	Remediation Action Plan
TRH	Total Recoverable Hydrocarbons
TTMP	Tetra Tech Major Projects Pty Ltd
VENM	Virgin Excavated Natural Material

1. Introduction

1.1. General

Sydney Metro has engaged the CPB Ghella Joint Venture (CPBG) for the design and construction of the Station Boxes and Tunnelling Works (SBT Works) of the Sydney Metro Western Sydney Airport project (the 'Project').

The SBT Works involves the construction and operation of a new 23km metro rail line from the existing Sydney Trains suburban T1 Western Line (at St Marys) in the north and the Aerotropolis (at Bringelly) in the south. The Project includes tunnels and civil structures, including a viaduct, bridges, and surface and open-cut troughs between the two tunnel sections. **Figure 1.1** shows the proposed alignment and key features of the Project.

The SBT Works are divided into two parts:

- SBT North: St Marys Station to Orchard Hills Station. St Marys Station is an existing heritage-listed suburban rail station. Orchard Hills is a new station for the Sydney Metro line and will include the portal dive structure. Claremont Meadows Services Facility (CMF) is included along this alignment.
- SBT South: Airport business park dive structure to the Western Sydney Airport Aerotropolis station. This section of work is largely greenfield, with construction both on and off-airport land. The Airport Terminal Station (ATM). The **Bringelly Services Facility (BSF)** (the 'site') is included along this alignment.

Key elements on the SBT Works include:

- Two sections of twin tunnels with a combined length of approximately 9.8 km, plus associated portal structures. This includes one section from St Marys to Orchard Hills and the other under Western Sydney Airport (WSA) to the new Aerotropolis Station.
- Excavations at either end to enable trains to turn back, and stub tunnels to enable future extensions
- Station box excavations with temporary ground support for four stations at St Marys, Orchard Hills, Airport Terminal and Aerotropolis
- Excavations for two intermediate services facilities, one in each of the tunnel sections at Claremont and Bringelly.

CPBG has engaged Tetra Tech Major Projects Pty Ltd (TTMP) to provide geotechnical, hydrogeological and contaminated land services associated with the design and construction of the SBT Works.

The project is the subject of a contaminated land site audit, and this remediation action plan (RAP) will be reviewed and endorsed by the Site Auditor.

This document describes the RAP for the site and has been prepared to satisfy the requirements of Section 12.20 of the Sydney Metro (2022) *Sydney Metro - Western Sydney Airport, Station Boxes and Tunnelling Works Design and Construction Deed* (the Deed). The RAP documents controls which need to be undertaken during construction which are not specifically covered under the following plans prepared by CPBG:

- Soil and Water Management Sub-Plan
- Waste and Recycling Management Sub-Plan
- Spoil Management Sub-Plan
- Asbestos Management Plan

The RAP has also been prepared to address the requirements of the Deed where applicable to this site. Table 1 in Section 1.3 has been included in this document to summarise items in the Deed which are considered applicable to this site, and where the information has been included in the RAP."

This RAP is specific to the shaft and surface construction activities at the site (refer to Section 1.2).

This RAP should be read in conjunction with the TTMP's DSI report dated 7 September 2022 and accompanying Interim Audit Advice Letters including "Interim Audit Advice Letter No.4 – Review of Detailed Site Investigation, Proposed Sydney Metro Western Sydney Airport Bringelly Service Facility , Bringelly NSW" dated 15 September 2022 and Interim Audit Advice Letter No.5 –Proposed Preparatory Works, Proposed Sydney Metro Western Sydney Airport Bringelly Service Facility , Bringelly NSW" dated 23 September 2022.

Figure 1.1 Overview of SBT Works

1.2. Project Details and the Proposed Development Works on Site

1.2.1. Construction

The proposed layout of the site during construction is provided in Drawing SMWSASBT-CPBG-AEC-SF400-MB-DRG-051003 (Rev. 00; Version 1.1) provided in **Appendix 1**. Construction of the site for the SBT Works includes the following:

- Construction of a shaft which has a diameter of 27 m in the centre of the site. Construction of the shaft will require a top-down excavation to approximately 30 mbgs / approximately 42.5 m AHD and generate approximately 22,200 m^3 of spoil (as in-situ volume) which requires off-site disposal. The shaft is to be undrained (tanked) and constructed using secant piles and top-down excavation methods.
- Construction of temporary construction work facilities including:
  - Water treatment plant
  - Crane pad and associated hardstands around the shaft
  - Laydown areas
  - Workshop
  - Offices and car parks
  - Substation.
- Construction of the temporary works areas will require clearing and grubbing of vegetation and surface soils. It is intended that soil materials stripped for the construction of the temporary works will be stockpiled in the northern portion of the site (and north of the existing dam) for subsequent reuse on-site post construction. Materials which cannot be reused on-site will be removed from site as waste, or beneficially reused as fill at the WSA FS01 site (refer to Section 1.2.3).

1.2.2. Dewatering

Construction of the shaft will require temporary dewatering during construction. An assessment of potential groundwater inflow during construction was reported in the Hydrogeological Interpretive Report (TTC, 2022a).

Groundwater monitoring associated with construction dewatering will also be required for the project. These aspects are beyond the scope of this plan and discussed further within the Groundwater Monitoring Plan (*in preparation at present*).

Each site will have a temporary water treatment plant to manage water produced during construction. Groundwater dewatered during construction will need to comply with Planning Condition E129[1] or an Environmental Protection License (EPL) approved by the NSW EPA.

It is understood that CPBG has engaged a consultant to obtain an EPL and at the time of preparing this plan, this process was in progress.

[1] Development Consent available: https://www.sydneymetro.info/sites/default/files/2021-11/SMWSA-Instrument-of-Approval-SSI-10051.pdf.

1.2.3. Re use of Excavated Material within the larger Airport Site

A large part of the larger WSA site is proposed to be filled by up to 8 m (designated the 'FS01 site'). All excavated material from this site which is assessed as suitable is intended to be utilised as fill at the FS01 Site.

CPBG will need to ensure relevant regulatory requirements (e.g., Protection of the Environment Operations (Waste) Regulation 2014 and Protection of the Environment Operations Act 1997) and / or the Federal Material Import and Reuse Procedures are complied with.

Material which cannot be re-used will be disposed off-site as waste.

1.3. Requirements of the Deed

Table 1 presents the requirements of the deed applicable to the site.

Table 1: Requirements of the Deed

Deed Item			Included in RAP	Report Reference
(a)	The SBT Contractor must prepare and submit to the Principal's Representative and the Independent Certifier a Remediation Action Plan in respect of each Detailed Site Investigation performed in accordance with clause 12.19 prior to commencing any excavation activities (except in relation to Preliminary Works).		This RAP	
(b)	Except in relation to the Remediation Action Plan in respect of Orchard Hills East Station, the SBT Contractor may not submit a Remediation Action Plan under this clause unless and until the Detailed Site Investigation report for the relevant area has been submitted to the Principal's Representative and has not been the subject of a 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.		Refer DSI (TTMP, 2022c)	
(c)	Each Remediation Action Plan must:			
	(i)	describe the nature and extent of Contamination based on the Detailed Site Investigation, the Information Documents and any other relevant information which is necessary to characterise the risk to the construction, operation and maintenance of Sydney Metro - Western Sydney Airport;	✓	Section 3
	(ii)	describe the manner in which the SBT Contractor will Remediate Contamination within the proposed areas of excavation and/or disturbance;	✓	Section 4
	(iii)	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 the 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 the areas of excavation or disturbance;	Refer to DSI (TTMP, 2022c).	
	(iv)	present a preferred Remediation option based on:		
		(A) whole-of-life costs;	Refer to DSI (TTMP, 2022c) and Section 4.	
		(B) to the extent practicable, maintaining the Overall D&C Program;		
		(C) benefits (as far as is practicable based on available infrastructure design information); and		

Deed Item			Included in RAP	Report Reference
		(D) compliance with this deed;		
	(v)	define what will constitute Remediation Practical Completion of the Remediation;		
	(vi)	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 Environment Risk Assessment and any other requirements of this deed;	✓	Section 1.4
	(vii)	be reviewed and approved by a Certified Contaminated Land Consultant;	✓	Document Approval on Cover Page
	(viii)	be reviewed and endorsed by an Accredited Site Auditor;	✓	To be confirmed following review of this RAP
	(ix)	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);	✓	
	(x)	include details of any Remediation completed during the performance of any Preliminary Works; and	Based on the results of the DSI (TTMP, 2022c), remediation is not technically required, however, refer to Section 4 for further detail	
	(xi)	consider and plan to mitigate the migration of Contamination from the Construction Site.		
(d)	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:			
	(i)	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:	✓	Note 1
		(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; and	✓	Appendix 1
		(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;	✓	Note 1
	(ii)	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	✓	Note 1

Deed Item			Included in RAP	Report Reference
		to be excavated and to be reused and/or disposed offsite (ACC Excavation Quantity Register);		
	(iii)	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; and	✓	Section 4
	(iv)	precise details of how the validation of Remediation will be achieved and demonstrated.	Note 2	Section 4

Notes:

1) Refer to Figure 3 in Appendix 1. The Asbestos Source Zone is shown by the purple hatched area and the Construction Footprint is shown by the red outline. 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.
2) Validation refers to validation of construction activities completed.

1.4. Regulatory Framework and Guidance

This RAP was prepared in general accordance with the following legislation, industry standards, codes of practice, and guidance documents, where relevant:

- *Contaminated Land Management Act, 1997*
- CRC Care Technical Report No. 10, *Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater, 2011* (CRCCARE 2011)
- Heads of EPAs Australia and New Zealand. *PFAS National Environmental Management Plan. Version 2.0 – January 2020*
- *Protection of the Environment Operations (POEO) Act 1997* (POEO Act 1997)
- *National Environment Protection Council, National Environment Protection (Assessment of Site Contamination) Measure, 1999* (April 2013) (ASC NEPM 2013)
- NSW EPA (2014) *Waste Classification Guidelines Part 1: Classifying waste*
- NSW EPA (2016) *Addendum to the Waste Classification Guidelines (2014) – Part 1: classifying waste*
- NSW EPA (2020), *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land, 2020*.

1.5. Previous Reports

The following reports have been previously prepared for the site which are relevant to this RAP:

- Cardno (Nov, 2021); *Contamination Assessment Report – Phase D/E, Sydney Metro Western Sydney Airport* (Ref: 80021888; RevB, dated 22nd November 2021)
- Cardno (May, 2021); *Contamination Assessment Report, Sydney Metro Western Sydney Airport* (Ref: 80021888; dated 5th May 2021)

- Golder & Douglas Partners (Feb 2021); *Factual Contamination Report – Preliminary Site Investigation* (Ref: 19122621-003-R-Rev3; Rev3; dated 19th February 2021).
- TTMP (2022c); *Western Sydney Airport Station Boxes and Tunnels Tender, Bringelly Detailed Site Investigation* (Ref: SMWSASBT-CPBG-SWD-SW000-GE-RPT-040512; Rev. B01, dated 26 August 2022).
- TTMP (2022c); *Western Sydney Airport Station Boxes and Tunnels Tender, Bringelly Detailed Site Investigation* (Ref: SMWSASBT-CPBG-SWD-SW000-GE-RPT-040512; Rev. C01, dated 7 September 2022).
- *Asbestos Management Plan (AMP), Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works*, Rev A, dated 2 February 2022 (CPBG, 2022a);
- *Construction Environment Management Plan (CEMP), Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works, Preparatory Works*, Rev 2 dated 13 April 2022 (CPBG, 2022b); and
- *NSW (Off-Airport) Soil and Water Management Sub Plan (SWMP), Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works, Rev A* dated 19 May 2022 (CPBG, 2022c).

1.6. Excavation, Remediation and Validation: Planning Approval Requirements

The conditions of approval for the project include E92 and E93 which relate to soils and contamination. Condition E92 requires the completion of a Detailed Site Investigation (DSI) report to 'determine the full nature and extent of the contamination'. Condition E93 requires the preparation of a Remedial Action Plan (RAP) if remediation is required to make the site suitable for its intended land use.

TTMP (2022a) completed a DSI report to address Condition E92 which concluded the site was '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 site;
- The 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.

On this basis, it was determined that a RAP was not required to address Condition E93. However, a RAP has been prepared to outline the requirements for spoil management associated with the implementation of the proposed development.

1.7. Objectives of the document

This objective of this RAP was to outline the specific requirements to manage spoil from this site. These requirements were developed to dovetail with the generic requirements set out within the Soil and Water Management Plan (CPBG, 2022c) prepared for the Project.

This RAP refers to other documents prepared by CPBG and TTMP, where relevant. Together, these documents outline how the project will be managed to ensure an integrated approach to meeting contractual and legal requirements, whilst rendering the site suitable for the proposed development, from a contamination perspective.

2. Site Information

2.1. Site Setting and Features

The site is located at the northern end of Derwent Road at Bringelly, as shown in Figures 1 and 2, Appendix 1.

The site is currently cleared and not in use. Key attributes of the site are summarised in Table 2. The site is defined as the 'BSF Site Boundary' as shown by the yellow dashed line in Figure 2 and the construction activity is shown within the 'Construction Footprint' boundary shown as a red line in Figure 2.

Table 2: Site Key Attributes

Attribute	Description
Address	40 Derwent Road, Bringelly NSW 2556
Site Area	The BSF site boundary is approximately 3.9 ha; however, the construction footprint is approximately 2 ha
Title Identification Details	Lot 181 on DP 806012
Current Land Use	Cleared and unused
Current Land Zoning	ENT - Enterprise
Adjoining Land Uses	**North:** Landscape supply business and material storage area. Further north is rural land. **South:** Low rural residential and agricultural areas. Civil earthmoving business to the southwest. **West:** Commercial land uses (e.g., landscaping suppliers, rural residential and agricultural activities. **East:** Derwent Road and beyond lies rural land and agricultural areas

2.2. Site Description

Environmental consultants from TTMP conducted a site inspection on 22 March 2022, where the site was observed to comprise a vacant plot of land and a former dwelling and shed structures had been recently demolished in the south-eastern portion of the site. Bare soil was present within the footprint of these former structures where fibre cement debris, suspected of containing asbestos containing material (ACM) was observed in multiple locations.

The remainder of the site was covered by dense weed / grass cover.

The large dam present in the central portion of the site was fenced off at the time of the site walkover.

While some general refuse (cardboard and scrap wood) was noted around the site, TTMP did not observe stored chemicals, and stained or malodourous soils (where soils could be observed).

A detailed description of site was provided within the Detailed Site Investigation report (TTMP, 2022c).

2.3. Environmental Site Setting

Table 3 presents a summary of the environmental setting of the site.

Table 3: Environmental Site Setting

Aspect	Description
Topography	A review of the topographic map of NSW indicates the site is situated at an elevation of approximately 72 to 74 m AHD. The land slopes north towards Badgery's Creek which is located approximately 400 m north of the site.
Surface Water	A large dam is located on-site in about the centre of the site. Based on observations made during the site walkover, it appeared that the dam was not being used for active irrigation or potable water supply to surrounding residential properties. Two dams are located off-site to the south and south-west and are positioned at a slightly higher elevations based on available elevation contour data. Several other dams are also located off-site further to the north, east and south. These offsite dams are assumed to support the various surrounding agricultural and commercial operations, and possibly potable water for residential dwellings in the surrounding area.
Geology	A review of the Penrith 1:100 000 scale geology map[2] indicates that the site is underlain by Bringelly Shale of the Wianamatta Group which was deposited in a deep marine environment of the Middle Triassic. The Bringelly shale is described as shale, carbonaceous claystone, laminite, lithic sandstone, with rare coal. Section 3.2 provides further detail on the subsurface conditions encountered during the DSI (TTC, 2022c).
Hydrogeology	Groundwater at the site has been measured at approximately 67 to 69 m AHD (approximately 5 m bgs). Groundwater is expected to flow in a north-westerly direction towards Badgery's Creek (TTC, 2021)[3].
Salinity	A review of the map indicates that the site is mapped as having moderate salinity.
Acid Sulfate Soils	The Atlas of Australian Acid Sulfate Soil (ASS) compiled by CSIRO[4] was reviewed to assess the probability of occurrence of ASS within the site. The ASS risk plan indicates that the site is located in an area with Extremely Low Probability of Occurrence of ASS.

3. Summary of Contamination Conditions

3.1. Summary of Previous Investigation Findings

The following reports describe investigations completed within the site:

- Cardno (Nov, 2021); *Contamination Assessment Report – Phase D/E, Sydney Metro Western Sydney Airport* (Ref: 80021888; RevB, dated 22nd November 2021)
- Cardno (May, 2021); *Contamination Assessment Report, Sydney Metro Western Sydney Airport* (Ref: 80021888; dated 5th May 2021)

[2] Geological Survey of Penrith 1991. Surface geology of New South Wales - 1:1 100 000 map. Geological Survey of New South Wales, NSW Department of Primary Industries, Maitland, Australia
[3] TTC (2022a) *Western Sydney Airport Station Boxes and Tunnels Tender, Hydrogeological Interpretative Report*.
[4] http/www.asris.csiro.au/

- Golder & Douglas Partners (Feb 2021); *Factual Contamination Report – Preliminary Site Investigation* (Ref: 19122621-003-R-Rev3; Rev3; dated 19th February 2021).
- TTMP (2022c); *Western Sydney Airport Station Boxes and Tunnels Tender, Bringelly Detailed Site Investigation* (Ref: SMWSASBT-CPBG-SWD-SW000-GE-RPT-040512; Rev. B01, dated 26 August 2022).

Figures 1 and 2 illustrates the position of the investigation locations on the site. The following sections provide a summary of the previous investigations.

3.2. Scope of Investigations Completed

The scope completed for each investigation is summarised in Table 4.

Table 4: Summary of Previous Investigations

Report	Scope of Investigation Relevant to Site
Factual Contamination Report (Golder & Douglas Partners, Feb 2021)	• One borehole (SMGW-BH-D103) was drilled and sampled. BH-D103 was drilled within the alignment of the tunnel in the Derwent Road reserve and is located approximately 100 m from the shaft (289676.9 m E, 6245698.8 m N).
Contamination Assessment Report (Cardno, May 2021)	• Two boreholes (SMGW-BH-D303 and SMGW-BH-D303S) were drilled, and samples were collected from SMGW-BH-D303. BH-D303 and BH-D303S are located within the footprint of the shaft. BH-D303 was drilled to 48 m bgs and BH-D303s to 10 m bgs. Deep and shallow monitoring wells were installed in these boreholes (refer to Section 4.2) • One test pit (SMGW-TP-D302) was excavated and sampled. TP-D302 is located within the footprint of the shaft.
Contamination Assessment Report – Phase D/E (Cardno, Nov 2021)	• Three boreholes (SMGW-BH-D340, SMGW-BH-D340S and SMGW-BH-D341) were drilled and sampled. BH-D340 and BH-D340S are located within the tunnel alignment approximately 25 north west of the shaft. BH-D341 is located within the tunnel alignment approximately 60 m south east of the shaft.
Detailed Site Investigation (TTMP, 2022c)	• 33 test pits were excavated to depths of between 1.0 m and 2.0 m bgs • 8 boreholes were drilled to depths of between 14.07 m and 50.24 m bgs and five were converted into groundwater monitoring wells • Soil and groundwater samples were analysed for the COPC.

3.3. Ground Conditions

The ground conditions encountered generally comprised between 0.1 m and 0.4 m of clay, gravelly clay and sandy clay topsoil / fill with roots then natural residual clay to depths of between 2.2 m and 3.8 m, overlying siltstone, sandstone, interlaminated siltstone and sandstone and Bringelly Shale.

Soil materials with visual / olfactory signs of suspected contamination were not observed. ACM were not observed in the soil exposed in the test pits or boreholes. The ACM observed on the surface during previous site walkover was not observed during the intrusive investigations and is understood to have been removed from the site during the demolition works. One fragment of ACM was collected on the ground surface adjacent to location HA-01 which was observed following the completion of test pitting.

Soil headspace readings were typically below 20 ppm which was considered indicative that there is a low likelihood that significant concentrations of volatile organic compounds were present in the soil.

Groundwater was not encountered in any of the test pits or boreholes during excavation / drilling.

3.4. Groundwater Observations

Groundwater levels ranged between 3.168 m below top of casing (mBTOC) at SBT-GW-4020 and 6.622 mBTOC at SBT-GW-4022.

Field data suggests that the groundwater likely flows toward the north-northwest towards Badgery's Creek, which is consistent with the previous reports.

All samples were slightly cloudy and either pale brown or pale grey in colour. No odours were recorded. Other indications of potential contamination such as non-aqueous phase liquids were not observed.

3.5. Results

The soil and groundwater analytical results from the DSI (TTMP, 2022c) are presented in Appendix 2, along with the results from the previous investigations. The following sections presents a summary of both the DSI results and previous results in the context of the proposed commercial/industrial use of the site.

3.5.1. Soil

Analysis of soil samples collected from previous investigations did not report concentrations of Contaminant of Potential Concern (COPC) above the adopted health or ecological assessment criteria.

The analysis of soil samples collected from previous investigations did not identify asbestos. However, during the most recent investigation completed as part of the DSI, a single fragment of fibre cement sheeting was identified on the ground surface at HA-01. This fragment measured 110 mm x 40 mm x 5 mm (thick), was angular in shape, did not exhibit excessive signs of weathering and was of relatively high strength (i.e., did not readily crumble with moderate hand pressure). Analysis of this fragment confirmed the presence of asbestos.

This material was considered to be consistent with the definition of Bonded ACM. Given the location of this find the likely source of this fragment was the former residential dwelling on site. Its occurrence is consistent with observations made by TTMP during the initial walkover of the site and is considered an indicator that other undetected fragments of ACM existing in fill within the footprint of former structures on site.

3.5.2. Groundwater

The laboratory results from the DSI (TTMP, 2022c) indicate that the results were within the investigation levels with the exception of minor metal exceedances, nutrients and PFAS.

Detectable concentrations of nutrients including Ammonia, Nitrate and Phosphorous were reported in all groundwater samples, with concentrations of Ammonia and Nitrate exceeding the ecological investigation level in samples SBT-GW-4003 and SBT-BH-4005, respectively.

PFOS was detected in groundwater samples collected from SBT-BH-4005 (0.0058 µg/L) and SBT-BH-4002 (0.0006 µg/L) which exceeded the HEPA (2020) PFAS NEMP 99% protection level of 0.00023 µg/L. It is noted that other PFAS compounds were detected at levels below the assessment criteria or LOR in all samples tested.

On review of available data, no discrete potential source of heavy metals has been identified within the site. Given there is no consistent trend showing that these COPC increase along the inferred groundwater flow direction, suggests that these COPC derive from diffuse sources within the surrounding environment.

Whilst the landscaping business to the north of the site was identified as a potential source of nutrients in groundwater, given the inferred northerly / north-westerly groundwater flow direction, it is considered questionable that this operation is the source of the elevated Ammonia at the northern boundary. Notwithstanding this, given there is approximately 400 m between the site and Badgery's Creek (i.e., the nearest surface water receptor along the inferred groundwater flow path), it is assessed that Ammonia in groundwater would attenuate sufficiently to levels that would not pose unacceptable risks to aquatic receptors in this watercourse. Similarly, Nitrate appears to attenuate across the site with concentrations reported at the northern (down hydraulic gradient) boundary to concentrations at, or close to the Limit of Reporting.

Indicator PFAS compounds including PFOA and PFOA were reported at higher concentrations in monitoring well SBT-GW-4005 installed along the southern boundary of the site, relative to concentrations reported in monitoring wells along the northern site boundary. There was no perceptible source of PFAS in land immediately up hydraulic gradient (south) of the site. The available dataset shows the PFAS compounds appear to attenuate as groundwater passes through the site, indicating these compounds are unlikely to pose unacceptable risks to aquatic receptors in Badgery's Creek.

Dewatering of tunnel shaft excavations will temporarily alter the groundwater gradient, drawing in groundwater into this excavation that contains these dissolved COPC. It is assessed that the COPC at the concentrations reported in groundwater will not pose unacceptable risks to human health in a generic commercial / industrial setting. Nevertheless, monitoring groundwater quality during construction will be required to reassess such risks, and future management of water within the shaft.

3.6. Conclusions and Recommendations

The following key conclusions were drawn from the DSI (TTMP, 2022c):

3.6.1. Contamination

TTMP considers that the soil within the site poses a low risk of contamination to the project given that no gross[5] contamination was identified within the site. Given the results of this DSI, the site is

[5] Gross contamination was considered to be an area of wide-spread contamination which exceeds relevant commercial/industrial health guidelines triggers a requirement for remediation to mitigate contamination impacts that are over and above the standard construction practices to make the site suitable for commercial / industrial use.

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 site. The asbestos source zone was defined as the footprint of disturbance from the demolition of the former dwelling and shed (refer Figure 3);
- 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.

The investigation identified one fragment of Bonded ACM in topsoil / fill material within the footprint of a former dwelling that was recently demolished. This find is considered to be an indicator that other undetected fragments of ACM may exist in topsoil / fill within the footprint of former structures on site.

It is understood that topsoil / fill material within the asbestos source zone requires removal from the site to implement the proposed development. The removal of topsoil / fill material from the asbestos source zone will effectively mitigate health risks to construction workers and users of surrounding land, provided these works are undertaken in a manner that minimizes the potential for excessive weathering of ACM. Topsoil / fill materials will be disposed off-site as a waste following determination of the waste classification of these materials.

Topsoil / fill material contain low concentrations of COPC including PFAS, TRH, BTEX, heavy metals, PAH and OCP. Whilst the reported concentrations do not pose potential risks to human health in a commercial / industrial land use setting, or terrestrial ecology, 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.

PFAS impacted groundwater was found in all groundwater monitoring locations. Overall, the PFAS exceedances are considered minor and would not pose an unacceptable risk with respect to the proposed development. Given that the tunnel and shaft will be undrained, risk from groundwater being drawn into the tunnel and shaft post-construction is therefore considered to be negligible. Six-monthly groundwater monitoring is proposed during construction. If any changes in groundwater conditions are detected, then further assessment will need to be undertaken.

Given the PFAS concentrations in groundwater and the conditions for discharge to surface waters, the groundwater would not be permitted to be discharged to surface water.

Unexpected contamination, if identified during future works, can be managed through implementation of an Unexpected Contaminated Finds Protocol included in the SWMP (CPBG, 2022c).

3.6.2. Material / Waste Classification

The results suggest the fill soils would be preliminary classified as General Solid Waste (non-putrescible). Asbestos finds suggest fill excavated in the footprint of the former structures should be managed as Special Waste (Asbestos Waste).

The investigation indicates that natural soil would provisionally classify as General Solid Waste (non-putrescible). The investigation has identified trace concentrations of organic and metal COPC in samples of natural soils at varying depths which would preclude the classification of such materials as VENM.

Results suggest the soils sampled would be suitable for reuse at the FS01 site, provided they do not contain ACM. All results were within the AEPR 1997 and those for a future commercial / industrial land use.

4. Soil and Water Management During Excavation

4.1. Summary of CPBG Soil and Water Management Plan

The Soil and Water Management plan (SWMP) (CPBG, 2022c) was prepared prior to completion of the DSIs for the project. CPBG has advised the SWMP was provided to Planning Authorities and since been endorsed and finalised.

The management strategies outlined in the SWMP (CPBG, 2022c) are presented in Table 5.

Table 5: Management Strategies (CPBG, 2022c)

Management Strategy	SWMP Section Reference
Potential for groundwater drawdown and management	7.2
Approach to minimising water usage and maximising reuse	7.3
Erosion and sediment control planning	7.4
Water discharge criteria and targets	7.5
The design and management of sediment basins	7.6
Management of chemical and refuelling including spill management	7.7
Contamination management (including Unexpected Finds Protocol)	7.9.1
Environment Procedures for the above Management Strategies	Annexure C
Roles & Responsibilities of CPBG Team	Section 8
Systems & Tools to Implement SWMP	Section 9

4.2. Aspects Requiring Management during Development

Previous investigations completed within the site has not identified contamination that has triggered the need to implement remediation at the site. The following aspects of the proposed development within the site requires management:

- Fill within the 'Asbestos Source Zone' shown in Figure 3, Appendix 1 requires management to prevent the potential cross contamination of other materials that do not contain asbestos.
- Sediment and erosion controls are required to prevent sediment-laden runoff entering the dam located to the west of the construction site, or to the southwest further offsite.
- Surplus spoil from the proposed development requires classification to enable beneficial reuse, or disposal offsite to a licensed landfill. Topsoil or fill materials are to be stockpiled separately from natural soils to optimize the beneficial use of material.

The following procedures will apply during the development of the site in addition to those generic procedures outlined within the SWMP (CPBG, 2022c).

4.3. Management of Spoil Excavated from Asbestos Source Zone

Topsoil/fill suspected of containing ACM is expected within the Asbestos Source Zone, which is shown in Figure 3, Appendix 1. Fill within the Asbestos Source Zone is surplus and shall be disposed off site as a waste.

The source of ACM within the Asbestos Source Zone is the former structures present on site which were recently demolished. The form of asbestos expected is fragments of fibre cement material in a Bonded (i.e., non-friable) condition.

Excavation of the Asbestos Source Zone should follow the following procedures:

- CPBG shall demark the Asbestos Source Zone using temporary fencing which aims to restrict plant and vehicles within this area.
- The fenced area shall be of sufficient size to enable temporary stockpiling of fill for assessment and load-out. The temporary stockpiling area shall be provided with controls to minimize the cross contamination of soils beneath/surrounding the Asbestos Source Zone.
- The 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 (Competent Person[6]) 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.
- The 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 SWMP (CPBG, 2022c)
- Plant and vehicles shall be subject to decontamination prior to leaving the Asbestos Source Zone to prevent unintentionally tracking soil onto other parts of the site. Decontamination shall comprise washing down vehicle tyres and excavator tracks with a hose in a ‘wash bay’ to remove soil. Tyres and tracks shall be inspected by a competent person from CPBG prior to allowing the vehicle to leave the Asbestos Source Zone.

All works within the Asbestos Source Zone shall be conducted with the Asbestos Management Plan developed by CPBG.

[6] The Competent Person must be experienced in the undertaking excavation / remediation works and have the necessary experience to identify ACM and unexpected contamination. The Competent Person must have a working knowledge of the SWMP and the Unexpected Finds Procedure.

All works related to the ‘‘Excavation of the Asbestos Source Zone’’ must be well documented, including visual inspection and photographic records to be completed by the Competent Person. This information must be provided within the validation report.

4.4. Sediment and Erosion Controls

The SWMP provides generic procedures to control erosion and sediment laden runoff leaving the site. Controls are required to prevent sediment laden runoff entering the dam located on site immediately west of the construction footprint, and/or the dam located offsite to the southwest. This is particularly relevant given the detection of COPC in soil across the site including PFAS, TRH, BTEX, heavy metals, PAH and OCP, and suspected asbestos impacted fill within the Asbestos Source Zone on site.

Sediment controls to be implement on site may include:

- Collect surface water and sediment samples from the dam to provide baseline conditions prior to the commencement of construction.
- Diversion berms to channel clean water entering areas of the site where soil disturbance has taken place, and channel site runoff away from the existing dams.
- Provision of stockpile covers and diversion berms to channel runoff away from stockpiling areas.
- Use of rumble grids/wash bays on vehicle egress points to minimize vehicles tracking of sediment offsite.
- Regular inspection of the sediment controls to ensure they remain effective.

4.5. Classification of Spoil Excavated from the Development

Surplus spoil generated from development within the site shall be assessed to determine its suitability for beneficial reuse. Consideration may be given to generic resource recovery exemptions in place, including Virgin Excavated Natural Material or Excavated Natural Material Orders to manage surplus spoil from this site.

Preliminary advice provided within the DSI (TTMP, 2022c) indicates spoil from this site is chemically suitable for reuse as fill within the Western Sydney Airport site (FS01 Site). CPBG must confirm that movement of spoil from this site to the FS01 can occur lawfully in accordance with the relevant regulatory requirements set out within the Protection of the Environment Operations (Waste) Regulation 2014 and Protection of the Environment Operations Act 1997).

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 maintained along with consignment dockets confirming receipt of the material at the disposal facility.

These records shall be provided to the Environmental Consultant to be included in the validation report (if required).

4.6. Additional Sampling likely to be Required During Construction

In addition to spoil classification (Section 4.5) and the Asbestos Source Zone Area (Section 4.3), any imported fill would require sampling and validation where insufficient documentation is provided by the material supplier.

Materials imported to the site will need to be lawful and suitable for the site with respect to contamination. Materials imported to the site must be adequately assessed as being appropriate for the final use of the site.

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:

- 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 Resource Recovery Exemption / Order 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.

The Environmental Consultant must collate the field and laboratory records and prepare a standalone material classification report which concludes whether the material can be imported to site, and whether it is suitable for its intended use. Material classification reports prepared by the Environmental Consultant shall be appended to the Validation Report prepared for this site.

On arrival, each truck load of imported material will be visually checked by CPBG to assess its consistency with the material classification assessments. A record of these checks should be maintained as part of the material tracking system implemented for the project. Suspicious materials or materials different to the approved materials must be rejected.

The source site, volume, associated chemical test certificates and placement locations of the imported fill material will be tracked by CPBG or their nominated Contractor. These records shall be provided to the Environmental Consultant for inclusion in the Validation Report.

4.7. Nominated Remediation Screening Criteria

Based on the site end use being commercial / industrial, the adopted remediation / validation criteria for soil are summarised in Table 6.

Table 6: Soil Screening Criteria

Criteria	Source	Relevance/Receptor	Pathway
HILs for soil contaminants	ASC NEPM 2013 PFAS NEMP (2020)	Commercial / industrial receptors (HIL D)	Dermal contact and ingestion
HSLs for vapour intrusion	ASC NEPM 2013	Commercial / industrial receptors (HSL D)	Inhalation (indoor only, if relevant)
HSLs for direct contact	CRC CARE 2011	Commercial / industrial receptors (HSL D)	Dermal contact and inhalation
HSL for vapour intrusion	CRC CARE 2011	Intrusive maintenance worker (shallow trench) and depth 0-<2m depth, potentially greater depth also	Inhalation (indoor only, if relevant)
Management limits	ASC NEPM 2013	Commercial / industrial	Formation of LNAPL, fire and explosion and property damage
HSL for asbestos	ASC NEPM 2013 (based on WA DoH)	Commercial / industrial receptors (HSL D)	Inhalation

If required, the adopted remediation / validation criteria for groundwater are summarised in Table 7.

Table 7: Groundwater Screening Criteria

Criteria	Source	Relevance/Receptor	Pathway
DGVs for slightly to moderately disturbed systems	ANZG 2018 (supersedes ANZECC 2000) PFAS NEMP (2020)	Freshwater aquatic ecosystem, generally 95% species protection, or 99% for bio accumulative contaminants or low reliability DGVs	Migration to water receptors for uptake by aquatic species
HSLs for vapour intrusion	ASC NEPM 2013	Commercial / Industrial receptors (HSL D)	Inhalation

4.8. Reporting Requirements

A validation report will be prepared for the site at the completion of the construction works in general accordance with the Contaminated Land Guidelines: Consultants Reporting on Contaminated Land (NSW EPA, 2020). The validation report will contain information including:

- Information demonstrating compliance with appropriate regulations and guidelines.
- Details of the source, classification and suitability of all materials imported to site.
- Details of any environmental incidents and/or unexpected finds of contamination occurring during the course of the construction works and the actions undertaken in response to these incidents.

- Details on waste classification, tracking and off-site disposal (including environment protection licence (EPL) details).
- Details on the reuse of materials on site.
- Clear statement of the suitability of the site for generic commercial/industrial land use.

The Validation Report is to be submitted to the Site Auditor for review upon completion.

5. Conclusion

Following implementation of the measures outlined in this RAP and the procedures outlined within the SWMP (CPBG, 2022c), it is considered that the site will be suitable for the proposed commercial/industrial land use.

6. References

ANZECC/ARMCANZ (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000*

ANZG (2018) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018*

Cardno (2021); Contamination Assessment Report – Phase D/E, Sydney Metro Western Sydney Airport (Ref: 80021888; RevB, dated 22nd November 2021)

Cardno (2021); *Contamination Assessment Report, Sydney Metro Western Sydney Airport* (Ref: 80021888; dated 5th May 2021)

CPBG (2022a) *Asbestos Management Plan (AMP), Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works*, Rev A, dated 2 February 2022

CPBG (2022b) Construction Environment Management Plan (CEMP), Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works, Preparatory Works, Rev 2 dated 13 April 2022

CPBG (2022c) NSW (Off-Airport) Soil and Water Management Sub Plan (SWMP), Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works, Rev A dated 19 May 2022

CRC Care (2011) *Technical Report No. 10, Health screening levels for petroleum hydrocarbons in soil and groundwater*

GHD (2019) *Western Sydney Airport, Remediation Action Plan* (Ref: WSA00-WSA-0040-EN-PLN-00001, dated June 2019)

Golder & Douglas Partners (Feb 2021); *Factual Contamination Report – Preliminary Site Investigation* (Ref: 19122621-003-R-Rev3; Rev3; dated 19th February 2021)

NEPC (2013); *National Environmental Protection (Assessment of Site Contamination) Measure 1999* (the 'ASC NEPM')

NSW EPA (2014) *Waste Classification Guidelines Part 1: Classifying waste*

NSW EPA (2016) *Addendum to the Waste Classification Guidelines (2014) – Part 1: classifying waste*

NSW EPA (2020), *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land, 2020*.

NSW EPA (2022); *Sampling Design Part 1 - Application*

HEPA (2020) *PFAS National Environmental Management Plan (PFAS NEMP) 2.0, 2020*.

M2A (2020) *Sydney Metro - Western Sydney Airport Technical Paper 8 Contamination*

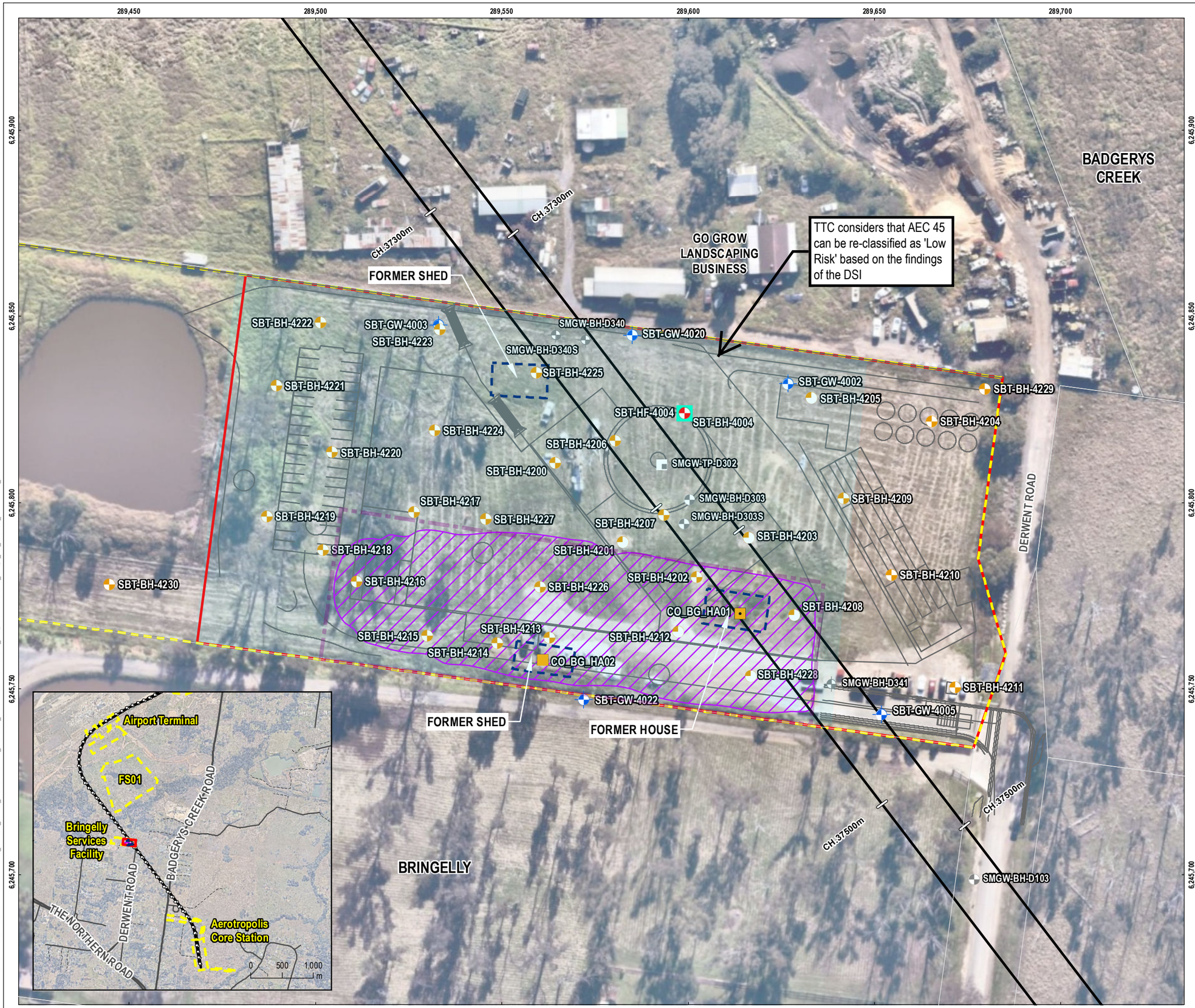
TTC (2022a) *Western Sydney Airport Station Boxes and Tunnels Tender, Hydrogeological Interpretative Report*.

TTC (2022b) *Western Sydney Airport Station Boxes and Tunnels Tender, Bringelly Sampling and Analysis Quality Plan*.

TTC (2022c) *Western Sydney Airport Station Boxes and Tunnels Tender, Bringelly Detailed Site investigation*.

TTC (2022d) *Technical Memorandum: Preliminary Soil Results Bringelly*.

Appendix 1 Figures 1 to 3 and Proposed Development Plans



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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PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

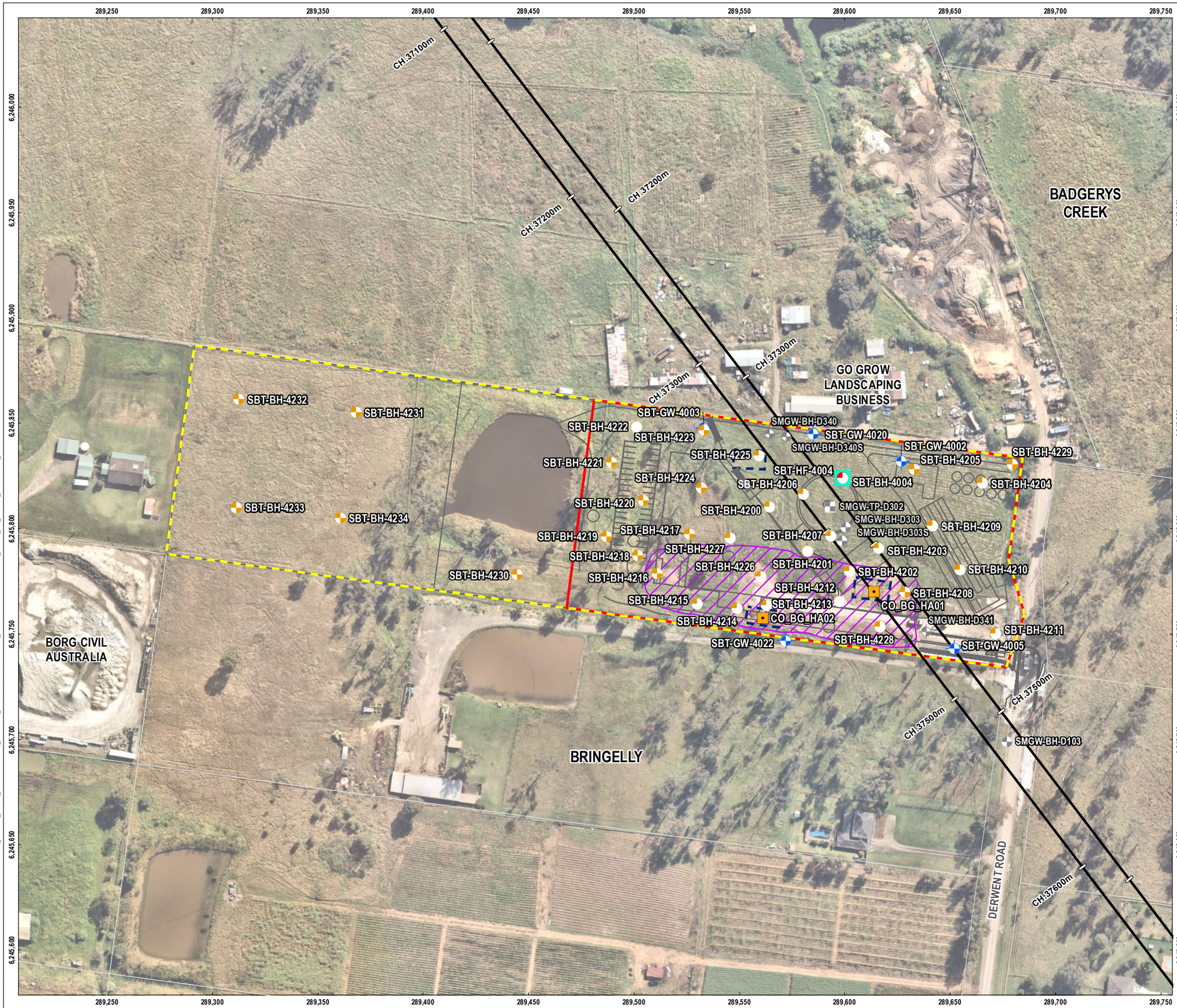
WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

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**



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- Borehole
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- Borehole
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Existing Investigation Location
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- Tunnel Alignment - Chainage
- Tunnel Alignment
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- ACM Fragments
- Former Structure
- Cadastral Boundary
- BSF Site Boundary
- Construction Footprint

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Existing investigations and alignment supplied by CPBG.
Cadastre from DFSI.
Aerial imagery from Nearmap (capture date 18-02-2022).

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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**

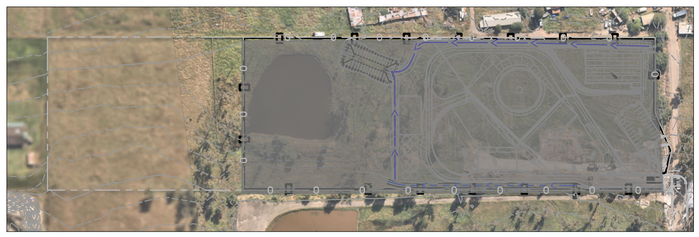
PROPOSED SEDIMENT BASIN
EXISTING DAM
Technical Memo Boundary
Piling Pads
PROPOSED CATCH DRAIN
PROVIDE SEDIMENT FENCE
Levelling
CHAIN LINK FENCE AND SEDIMENT FENCE
SEDIMENT BASIN 320m³
OFFICE
DERWENT STREET
WATER TREATMENT PLANT
Tree Clearing
PROPOSED CATCH DRAIN
SOG HARDSTAND
SHAFT
CRANE PAD
Top Soil Strip
SPOIL BIN
CARPARK (20 SPACES)
PROPOSED SHAKER GRID
LAYDOWN YARD
WORKSHOP
SPOIL BIN WORKING ZONE
ACCESS GATE FOR ALL TRAFFIC
PROPOSED CUTOFF DRAIN TO DIVERT CLEAN WATER AROUND THE SITE
Pavements
nearmap

NOTE

SANDBAGS TO BE PROVIDED AROUND EXITING PITS DURING THE CONSTRUCTE PHASE

LEGEND

- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- PROPOSED SITE BOUNDARY
- PROPOSED CHAIN LINK FENCE
- FUTURE BUILDING
- PROPOSED ELECTRICITY
- PROPOSED CATCH DRAIN
- PROPOSED CUT-OFF DRAIN
- PROPOSED SEDIMENT FENCE
- PROPOSED SHAKER GRID



KEY PLAN

OFFICIAL

FOR CONSTRUCTION

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REV.	AMENDED DESCRIPTION	Design by	Verified by	Approved by	Date

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CLIENT
NSW GOVERNMENT | sydney METRO
Engineering Design Solutions
An enterprise partnership of Mott MacDonald and Sydney Metro
SYDNEY METRO

ROBERT BIRD GROUP | CPB CONTRACTORS | Ghella
SITE ESTABLISHMENT

DRAWN	S.MANANDHAR	07.07.22
DESIGNED	C.HUANG	07.07.22
DRG CHECK	C.HUANG	07.07.22
DESIGN CHECK	C.HUANG	07.07.22
APPROVED	I.MCCUBBIN	07.07.22

SYDNEY METRO - WESTERN SYDNEY AIRPORT - STATION BOXES AND TUNNELLING WORKS
BRINGELLY SERVICES FACILITY
MOBILISATION & SITE ESTABLISHMENT
-
EROSION AND SEDIMENT CONTROL PLAN

FILE No: - | SHEET: 1 OF 1 | ©
STATUS: APPROVED FOR CONSTRUCTION | EDMS No: *EDMS NO*
DRG No. SMWSASBT-CPG-AEC-SF400-MB-DRG-051003 | REV 00 | VER 1.1

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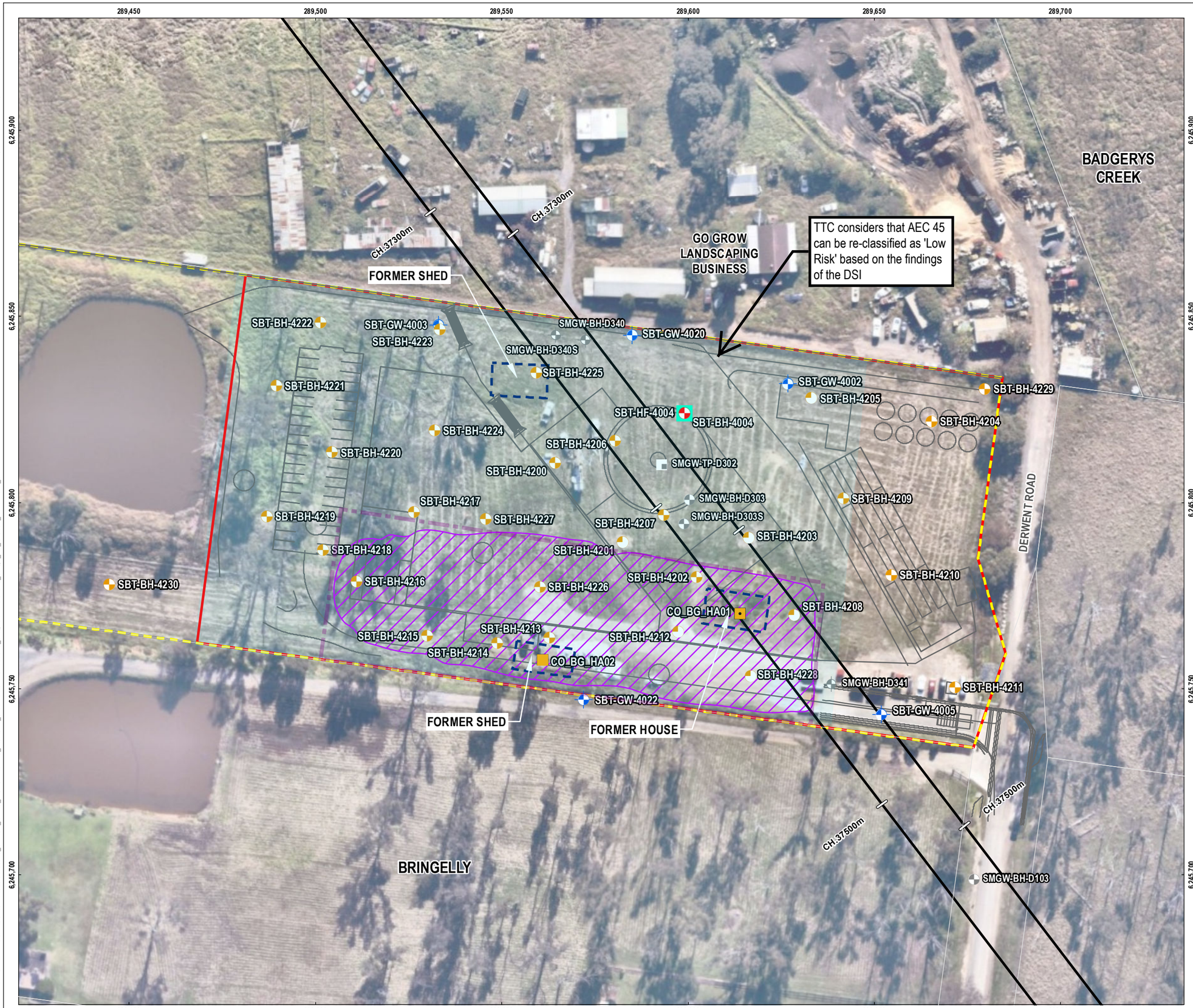

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Existing investigations and alignment supplied by CPBG.
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PROJECTION: **GDA2020 MGA Zone 56**

CPB - GHELLA

WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

FIGURE 3

Asbestos Source Zone
Bringelly Services Facility

TETRA TECH COFFEY

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Figure 4: Indicative Airport layout (Long Term)

4.5m WIDE GRASSED SWALE

ONE-WAY SHAFT ACCESS ROAD

450mm x 300mm BOX CULVERT CROSSINGS

2m WIDE GRASSED SWALE

INDICATIVE ELECTRICAL LINE

SEDIMENT BASIN
450m³

WATER TREATMENT PLANT

DERWENT STREET

5.5

CARPARK
(40 SPACES)
94.8m²

SOG HARDSTAND

SHAFT

CRANE PAD

SPOIL BIN

OFFICE 103m²

SUBSTATION 54m²

3m WIDE GRASSED SWALE

P1

P2

P3

LAYDOWN YARD
3374m²

WORKSHOP
375m²

SPOIL BIN
WORKING ZONE

E

TRUCK PARKING LANE

COR GATEHOUSE

INDICATIVE LOCATION OF EXISTING GO GRO ORGANICS GATE

ACCESS GATE FOR ALL TRAFFIC

WORK INTERFACE TO EARLYWORKS PACKAGE TO BE VERIFIED IN DETAILED DESIGN

TWO-WAY GENERAL AND SHAFT ACCESS ROAD

INDICATIVE LOCATION OF EXISTING OVERHEAD POWER POLE, TO BE RELOCATED UNDER EARLYWORKS PACKAGE