Prepared for
CPB Contractors Pty Ltd & UGL Engineering Pty Ltd (Systems Connect Line-wide JV)
Prepared by
Ramboll Australia Pty Ltd
Date
23 May 2022
Project Number
318001281
Audit Number
LW-018

SITE AUDIT REPORT
SYDNEY METRO BLUES POINT ACCESS SHAFT REINSTATEMENT, BLUES POINT ROAD, MCMAHONS POINT

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23 May 2022

CPB Contractors Pty Ltd & UGL Engineering Pty Ltd (Systems Connect Line-wide JV)
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Dear Mat

SITE AUDIT REPORT - SYDNEY METRO BLUES POINT ACCESS SHAFT REINSTATEMENT, BLUES POINT ROAD, MCMAHONS POINT

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Ref 318001281

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 Systems Connect Line-wide Joint Venture (SCLWW) to assess the suitability of the site for its intended public open space/recreational land use following use as an access shaft for construction of the Sydney Metro City and Southwest.

The Audit was initiated to comply with requirements of *Condition E67 of Infrastructure Approval, application SSI 15_7400,* approved by the Minister for Planning on 9 January 2017, 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 sincerely,
Ramboll Australia Pty Ltd

Louise Walkden
EPA Accredited Site Auditor 1903

cc: NSW EPA – Statement only
North Sydney Council

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Appendix A
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Site Audit Statement

LIST OF ABBREVIATIONS

Measures

m	Metre
m^2	Square Metres
mbgl	Metres below ground level
mg/kg	Milligrams per Kilogram

General

ABC	Ambient Background Concentration
ACL	Added Contaminant Limit
ACM	Asbestos Containing Material
ADE	ADE Consulting Group Pty Ltd
ASS	Acid Sulphate Soil
BaP	Benzo(a)pyrene
BGL	Below Ground Level
BTEXN	Benzene, Toluene, Ethylbenzene, Xylenes & Naphthalene
CLM Act	NSW Contaminated Land Management Act 1997
COC	Chain of Custody
CSM	Conceptual Site Model
DA	Development Application
DQI	Data Quality Indicator
DQO	Data Quality Objective
DSI	Detailed Site Investigation
EC	Electrical Conductivity
EES	Environmental Earth Scientists Australia Pty Ltd
EIL	Ecological Investigation Level
EPA	Environment Protection Authority (NSW)
ESL	Ecological Screening Level
HIL	Health Investigation Level
HSL	Health Screening Level
LEP	Local Environment Plan
Metals	As: Arsenic, Cd: Cadmium, Cr: Chromium, Cu: Copper, Ni: Nickel, Pb: Lead, Zn: Zinc, Hg: Mercury
ML	Management Limits
NATA	National Association of Testing Authorities
ND	Not Detected
NEPM	National Environment Protection Measure
NL	Non-Limiting
NSW	New South Wales
OCPs	Organochlorine Pesticides
OPPs	Organophosphorus Pesticides
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
pH	A measure of acidity, hydrogen ion activity
PQL	Practical Quantitation Limit
PSI	Preliminary Site Investigation
QA/QC	Quality Assurance/Quality Control
Ramboll	Ramboll Australia Pty Ltd – previously Ramboll Environ Australia Pty Ltd and ENVIRON Australia Pty Ltd
RPD	Relative Percent Difference
RRE	Resource Recovery Exemption
RRO	Resource Recovery Order
SAQP	Sampling Analysis and Quality Plan
SAR	Site Audit Report
SAS	Site Audit Statement
SCLWW	Systems Connect Line Wide Works Joint Venture
SLS	Sydney Laboratory Services
SSI	State Significant Infrastructure
SWL	Standing Water Level

TEQ	Toxic Equivalence Quotient
TPHs	Total Petroleum Hydrocarbons
TRHs	Total Recoverable Hydrocarbons
VENM	Virgin Excavated Natural Material
-	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 Blues Point access shaft located at the corner of Blues Point Road and Henry Lawson Avenue, McMahons Point, New South Wales (NSW). The access shaft was constructed to provide temporary access to the underground tunnels for services and materials for the Sydney Metro Chatswood to Sydenham (C2S) rail infrastructure. Following the cessation of construction activities, the shaft was backfilled and is scheduled to be handed back to North Sydney Council (Council) for the proposed future use as an open space/recreational area.

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 Section 4 (1) (b) (iii) of the NSW *Contaminated Land Management Act 1997* (the CLM Act).

A State Significant Infrastructure (SSI) development application (SSI 15_7400) was approved by the NSW Minister for Planning on 9 January 2017 for the construction and operation of the Sydney Metro C2S rail infrastructure project. Condition E67 of the SSI development approval relates to contamination and requires a site audit as follows:

> *"If a Site Contamination Report prepared under Condition E66 finds such land contains contamination, a site audit is required to determine the suitability of a site for a specified use. If a site audit is required, a Site Audit Statement and Site Audit Report must be prepared by a NSW EPA Accredited Site Auditor. Contaminated land must not be used for the purpose approved under the terms of this approval until a Site Audit Statement is obtained that declares the land is suitable for that purpose and any conditions on the Site Audit Statement have been complied with."*

The Audit was initiated to comply with Condition E67 of the SSI development approval and is therefore a statutory audit.

Details of the Audit are:

Requested by:	Mathew Billings of CPB Contractors Pty Ltd & UGL Engineering Pty Ltd for the Systems Connect Line-Wide Works Joint Venture (SCLWW)
Request/Commencement Date:	20 August 2021
Auditor:	Louise Walkden
Accreditation No.:	1903

1.2 Project Background

The footprint of the access shaft (hereinafter referred to as 'the site') covers an area of approximately 220 square metres (m^2) and is located within a construction works area. See **Attachment 1 in Appendix A** for the extent of the site and the boundary of the construction works site.

Remediation and validation of the site was undertaken concurrently with the shaft construction by excavation and off-site disposal of fill material and the underlying natural soil/bedrock to an average depth of approximately 36 metres below ground level (mbgl). The remediation of the shaft area through excavation of impacted soils was the subject of a previous Section B Site Audit Statement (SAS) and supporting Site Audit Report (SAR) prepared by Tom Onus of Ramboll dated 27 November 2020 (TO-024-6).

The previous TO-024-6 site audit concluded that:

> *"… the onsite contamination has been adequately remediated and validated and the site in its current condition does not present a contamination risk to human health or the environment. However, it is understood that following the site use as an access shaft, the site will be backfilled and the site will be used as an open space/recreational area. Importation of materials will be required to backfill the access shaft and this material has the potential to introduce contamination to the site if not imported in accordance with the RAP. The procedures outlined within the RAP are considered sufficient to ensure imported materials are suitably assessed and approved, provided the procedures are implemented by a suitably qualified environmental consultant."*

The previous site audit also noted:

> *"The following remains necessary before the land is suitable for the proposed open space/recreational use:*
>
> - *Preparation of a report documenting the material/s imported to the site for use as backfill and the validation of the material/s for potential contamination in accordance with the RAP.*
> - *Preparation of a Section A Site Audit Statement by a NSW EPA Accredited Site Auditor reviewing the above information and confirming the suitability of the site for the intended use."*

This Audit has been prepared to certify the site suitability following backfilling and resurfacing of the site, as required by the previous Section B SAS.

1.3 Scope of the Audit

The scope of the Audit included:

- Review of the following reports:
  - 'Report on Preliminary Site Investigation, Sydney Metro City and South West, Tunnel and Station Excavation Works Package, Proposed Blues Point Road Access Shaft, McMahons Point, NSW, prepared for John Holland CPB Ghella JV, Project 85608.07, May 2018', report reference: 85608.07.R.001.Rev0, dated 4 December 2018 prepared by Douglas Partners Pty Ltd (DP) (*the PSI*).
  - 'Report on Detailed Site Investigation, Sydney Metro City and South West, Tunnel and Station Excavation Works Package, Proposed Blues Point Road Access Shaft, Blues Point Road, McMahons Point, prepared for John Holland CPB Ghella JV, Project 85608.07, November 2018', report reference: 85608.07.R002.Rev1.DSI, dated 27 November 2018 prepared by DP (*the DSI*).
  - 'Remediation Action Plan Sydney Metro & South West – Tunnel and Station Excavation Works Package, Proposed Blues Point Access Shaft, Blues Point Road, McMahons Point', report reference: 85608.07, dated September 2018 prepared by DP (*the 2018 RAP*).
  - 'Waste Analysis and Classification Report - Tunnel Site A, Westconnex Stage 3B, Rozelle Interchange Site, Rozelle NSW', dated 27 July 2021 prepared by ADE Consulting Group Pty Ltd (ADE)
  - 'Waste Analysis and Classification Report - Tunnel Site B, Westconnex Stage 3B, Rozelle Interchange Site, Rozelle NSW', dated 27 July 2021 prepared by ADE
  - 'Waste Analysis and Classification Report - Tunnel Site C, Westconnex Stage 3B, Rozelle Interchange Site, Rozelle NSW', dated 27 July 2021 prepared by ADE

  - 'Validation of Natural Material for Backfilling of Sydney Metro Tunnel Access Shaft – Blues Point Road, McMahons Point NSW', dated 16 May 2022 prepared by Environmental Earth Scientists Australia Pty Ltd (EES) (*the Validation Report*).
- Review of the previous SAR and SAS:
  - 'Site Audit Report – Sydney Metro Blues Point Access Shaft, Blues Point Road, McMahons Point NSW', dated 27 November 2020 prepared by Tom Onus of Ramboll Australia Pty Ltd (*the TO-024-6 SAR*.
- A site visit by the Auditor on Monday 9 May 2022.
- Discussions with SCLWW and with EES, the environmental consultant who completed the validation of imported fill.

The previous SAR should be referred to for further details of historical investigation and remediation of fill material during construction of the access shaft.

2. SITE DETAILS

2.1 Location

The footprint of the site and the larger construction land are labelled as '*Access Shaft Site Boundary*' and '*Construction Site*', respectively, in **Attachment 1, Appendix A**. Only the area within the '*Access Shaft Site Boundary*' constitutes the site audit area.

The site details are as follows:

Street address:	Corner of Blues Point Road and Henry Lawson Avenue, McMahons Point, NSW 2060
Identifier:	Part of Lot 1 Deposited Plan (DP) 902933
Local Government:	North Sydney Council
Owner:	Transport for New South Wales
Site Area:	Approximately 220 m^2

A survey plan of the site has been provided to the Auditor (**Attachment 2, Appendix A**) and identifies the site audit boundary (Points A, B, C and D).

2.2 Zoning

The current zoning of the site is RE1 Public Recreation under the North Sydney Local Environment Plan (LEP) 2013.

2.3 Adjacent Uses

The site is located within an area of medium to high density residential land uses and within the public open space of Henry Lawson Reserve. The site uses surrounding Henry Lawson Reserve include:

- North: Henry Lawson Avenue with residential land use beyond.
- East: Henry Lawson reserve.
- South: Sydney Harbour (Blues Bay).
- West: Blues Point Road with a car park and residential land use beyond.

Based on topography, groundwater flow and stormwater run-off are expected to be to the south with discharge into Blues Bay located approximately 15 m beyond the southern site boundary. The 2018 DSI indicated that there were no registered groundwater bores within a 500 m radius of the site.

A search of the NSW EPA public records did not identify any sites listed as contaminated in the immediate vicinity of the site.

2.4 Site Condition

The site topography slopes from the north to the south, towards the harbour. The PSI indicates site topography falls from approximately 8.5 metres Australian Height Datum (m AHD) along the northern site boundary to 5.5 m AHD on the southern site boundary.

During use as a construction compound, the site area was excavated for use as an access shaft and the area immediately surrounding the access shaft was excavated to achieve a level platform and concreted to provide a work surface.

The Auditor inspected the site on 9 May 2022 and confirmed that the access shaft had been backfilled, the surrounding concrete surface removed and the former construction compound area

recontoured to near previous levels, such that the area sloped from Henry Lawson Drive to the foreshore of Sydney Harbour. The entire area of the former construction compound had been grassed with turf and formed part of Henry Lawson Reserve. At the time of the site inspection the area remained fenced to prohibit public access while the turf was established.

For the purposes of this Audit, the 'public open space' land use scenario is assumed.

3. SITE HISTORY

The previous TO-024-6 SAR included a summary of the site history which is reproduced in Table 3.1.

Table 3.1: Site History

Date	Activity
1817-1860	Land granted to William Blue in 1817 and used to grow produce and provide a ferry service. The land was subdivided in the 1850s and buildings and drainage constructed.
1860-1902	In the late 1800s to 1902, the site was part of a boat/shipping dock and later, a timber yard. Land to the south of the site was reclaimed between 1866 and 1885 and the sea wall constructed.
1902-1926	From 1902, the site was used as a depot for the Fresh Food and Ice Company that included an ice-house and cool storage. Land to the west was reported to be used by Sydney Ferries as a depot for idle ferries.
1926-1962	Owned by the Harbour Land and Transport Company Limited from 1926 to 1954 and Harbour Lighterage & Showboat Limited from 1954 to 1960. These companies were subsidiaries of the Sydney Ferry Company that operated ferries across the harbour. Historical aerial imagery shows that by 1942 on-site structures had been demolished and the wharf removed. Land was possibly being used as a depot for storing building materials or as a salvage yard. Historical photographs indicate that in 1962 the site was being used as part of a larger timber yard.
1971 to date	The 2018 PSI indicates that in 1971 the site was included as part of allotments for use as a public park, reserve or recreational space and has remained used for this purpose since that time. The site was used as the location of a temporary access shaft for construction of the Sydney Metro C2S rail infrastructure project between 2018 and 2022.

Contaminated fill encountered at the site was remediated through excavation during construction of the shaft as documented in the TO-024-6 SAR. The site has since been backfilled and turfed and is planned to be handed back to the local council for future use as an open space/recreational area.

3.1 Auditor's Opinion

The Auditor has reviewed the TO-024-6 SAR and agrees with the summary of site history. Sources of historical contamination were limited to imported fill used to level the site, hazardous building materials from demolition of former on-site structures, and previous commercial/industrial activities primarily associated with boat/ferry docking/maintenance operations and use as a timber yard. The remediation and validation completed during the shaft construction was sufficient to confirm that all impacted fill material was removed from the site.

The potential for contamination of the site to have occurred during backfilling of the shaft is addressed in Section 8 of this SAR.

4. CONTAMINANTS OF CONCERN

Based on the 2018 PSI and the 2018 DSI, TO-024-6 provided a list of contaminants of concern and potentially contaminating activities associated with historical use of the site. These have been retabulated in Table 4.1.

Table 4.1: Contaminants of Concern

Area	Activity	Potential Contaminants
Entire site	Fill and surface soil imported from unknown sources to level the site	Metals, total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, xylenes & naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), organophosphorus pesticides (OPPs), polychlorinated biphenyls (PCBs), phenols and asbestos
Entire site	Hazardous building material from former structures	Asbestos, lead and PCB
Entire site	Activities associated with operation and maintenance of a boat/ferry service/dockyard and timberyard	Metals, organotins, solvents such as volatile organic compounds (VOC) and trichloroethene (TCE), TPH, BTEX, PAHs and cresols.

4.1 Auditor's Opinion

The Auditor considers that the analyte list considered during the remediation and validation of the site was applicable. The analyte list adopted for assessment of fill and surface soil imported to site is adequate to confirm the suitability of materials imported to backfill the access shaft.

There has been no assessment by the consultants for the presence of per- and poly-fluoroalkyl substances (PFAS) but in the Auditor's opinion there are no indications in the site history that they would be potential contaminants of concern.

5. STRATIGRAPHY AND HYDROGEOLOGY

5.1 Stratigraphy

DP reviewed geological maps and reported that the site is underlain by Hawkesbury Sandstone which comprises medium to coarse grained quartz sandstone, with very minor shale and laminite lenses.

The sub-surface profile of the site encountered during the 2018 DSI prior to remediation/validation and access shaft construction is summarised by the Auditor in Table 5.1.

Table 5.1: Stratigraphy

Depth (mbgl)	Subsurface Profile
0.0 – 0.2	Brown silty sand fill (topsoil) with rootlets
0.1 – >2.5	Fill materials were observed from beneath the topsoil to depths at historical test pit (BPTP01/BPTP01A, BPTP02, BPTP03, BPTP04 and BPTP05) and soil bore locations (SRT-BH033A and BPMW01). Test pits were terminated at depths of between 0.5 mbgl and 2.5 mbgl in fill, except for test pit BPTP03 where sandstone bedrock was encountered at 1.7 mbgl. Fill was encountered to depths of 1.8 mbgl in SRT-BH033A and to 1.7 mbgl in BPMW01.
1.7 - >2.5 to termination depth (40m)	Natural clay soils followed by sandstone bedrock.

DP indicated in the DSI that the site is located within an area of no known occurrence of acid sulfate soils (ASS), however, noted that Blues Bay located approximately 15 m south of the site is within an area of high probability in bottom sediments.

During the site remediation/validation and shaft construction, fill material and the underlying natural soil/bedrock were removed from the entire site area to an average depth of approximately 36 mbgl.

Following the cessation of the construction activities, the site has been backfilled with imported materials as discussed in Section 8.

5.2 Hydrogeology

The 2018 PSI included a search of the groundwater information database maintained by the NSW Government and did not identify any registered groundwater bores within a 0.5 kilometre (km) radius of the site. Based on the topography, groundwater is anticipated to flow to the south.

DP identified the closest sensitive ecological receptor for groundwater to be Blues Bay, located approximately 15 m to the south. Surface water run-off is anticipated to flow into the local stormwater network and drain to Blues Bay.

The 2018 DSI included bore logs for two groundwater monitoring wells previously installed at the site:

- SRT-BH033A which was drilled to a depth of 39 mbgl and was reported to have been screened within the sandstone bedrock between approximately 32 mbgl and 39 mbgl. Well construction details, however, are not included on the corresponding bore log. According to the 2018 DSI, groundwater ingress was noted at a depth of 2.5 m during well installation.
- BPMW01 which was installed to a depth of approximately 10 mbgl and was screened in sandstone from 4 mbgl to 10 mbgl. No groundwater ingress was noted in the corresponding bore log.

Groundwater seepage was not encountered at the historical test pit locations.

Gauging and sampling of groundwater from well SRT-BH033A was completed in 2016. Groundwater in this well had a standing water level (SWL) of 5.54 mbgl on 23 September 2016. Groundwater observations and sampling of existing well BPMW01 was undertaken on 22 August 2018 when the SWL was recorded at 7.24 mbgl. An accurate groundwater flow direction could not be calculated due to the limited number of wells on the site. It is possible that the site groundwater flow is tidally influenced.

5.3 Auditor's Opinion

The Auditor considers that the site stratigraphy and hydrogeology prior to site remediation/validation and shaft construction are sufficiently well known. The site stratigraphy and hydrogeology is expected to have been altered as a result of the site development (i.e. shaft construction and backfilling).

6. EVALUATION OF QUALITY ASSURANCE AND QUALITY CONTROL

The Auditor has assessed the overall quality of the data associated with backfilling materials used on the site by reviewing the information presented in the 2022 Validation Report, specifically the three Waste Analysis and Classification Reports prepared by ADE Consulting Group (ADE) in 2021 and the information relating to validation of topsoil by EES which were all included in the 2022 Validation Report.

The Auditor notes the following:

1. Data quality from earlier site investigation, remediation and validation works was discussed in the previous site audit and therefore, was not considered herein.
2. The 2022 Validation Report indicated that:
    - The backfilling materials applied on the site were tunnel spoils from the WestConnex Rozelle Interchange Site operated by John Holland CPB Contractors Joint Venture (JHCPB JV). These tunnel spoils, as defined under *The Rozelle Interchange tunnel spoil order 2019* issued by the EPA under clause 93 of Protection of the Environment Operations (Waste) Regulation 2014, are "*approximately 7 million cubic meters of naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that:*

        (a) has been generated from the WestConnex M4-M5 Link Rozelle Interchange Tunnel Project extending from the M4-M5 Link Tunnel (Leichhardt) to Victoria Road (Balmain);

        (b) has been excavated by the use of machinery;

        (c) contains no more than 0.4% w/w shotcrete;

        (d) has not been contaminated with manufactured chemicals or process residuals (except for shotcrete);

        (e) does not meet the definition of virgin excavated natural material in the POEO Act; and

        (f) may have been processed by intermediate waste facilities licensed by the EPA."
    - *The Rozelle Interchange tunnel spoil order 2019* does not specify any sampling requirements/protocols. Notwithstanding, ADE was commissioned by JHCPB JV (i.e. the waste generator) and conducted spoil sampling at three tunnelling locations (Tunnel Sites A, B and C) within the WestConnex Rozelle Interchange Site (i.e. the source site) in 2021. The purpose of the sampling works was to chemically characterise/validate the tunnel spoils. Table 6.1 summarises ADE's sampling works.
    - Topsoil imported to the site was sampled by EES and analysed for contaminants of concern.

Table 6.1: Summary of Characterisation/Validation of the Tunnel Spoils

Stage of Works	Field Data	Analytical Data
ADE Sampling Events *Fieldwork date: 14 July 2021*	24 samples from three separate stockpiles of tunnel spoil which were made available for sampling from the tunnel dive road header and conveyer belt. The sampling included	Metals, TRH/BTEX, PAHs, phenols, OCPs, OPPs, PCBs, sulfates, chlorides, pH and EC.

	• 8 samples from approximately 50 m^3 of tunnel spoils at Tunnel Site A. • 8 samples from approximately 50 m^3 of tunnel spoils at Tunnel Site B. • 8 samples from approximately 50 m^3 of tunnel spoils at Tunnel Site C.	
EES Sampling of Topsoil *Fieldwork date: May 2022*	Collection of 10 insitu topsoil samples from across the footprint of the construction site **(Attachment 3, Appendix A)**	Metals, TRH/BTEX, PAHs, OCPs, OPPs, PCBs and asbestos (presence/absence).

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

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

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
Sampling locations and depths **Tunnel Spoil:** Samples were collected from the spoils generated at various tunnelling locations, which was expected to provide reasonable characterisation/coverage of the tunnel spoil conditions at the source site. The sampling depth was up to approximately 0.3 m below the stockpile surfaces, whilst the National Environmental Protection Council (NEPC) *National Environmental Protection (Assessment of Site Contamination) Measure 1999*, as Amended 2013 (NEPM, 2013) recommends: • Collection of samples from the exterior 0.3 m of a stockpile should be avoided due to the higher risk of weathering and grain size grading errors. • Samples for inorganic and non-volatile components should be taken at various depths towards the centre of a stockpile from 0.3 m below the stockpile surface. • Samples for volatile and semi-volatile compounds should be taken without delay from a freshly excavated surface 0.5 m or greater depth below the stockpile surface. **Topsoil:** Insitu sampling from below the turf overlay at 10 locations (4 within the vicinity of the access shaft).	The NEPM recommended sampling approach was not adopted. This was most likely due to the limited sizes of the stockpiles (~ 50 m^3). It is also noted that the materials sampled were freshly excavated natural soils/bedrock and therefore the potential for weathering, grain size grading or loss of volatile and semi-volatile compounds was expected to be low. Overall, the Auditor considers that the stockpile and insitu sampling approach adopted by ADE and EES was appropriate.
Sampling density ***Tunnel Spoil:*** Eight samples per stockpile (approximately 50 m^3). The sampling density exceeds the minimum number of samples recommended in the NEPM (2013). **Topsoil:** Ten samples for approximately 240 m^3. The sampling density is comparable with the minimum number of samples recommended in the NEPM (2013).	In the Auditor's opinion, the sampling densities adopted were appropriate.
Sample collection method and decontamination procedures **Tunnel Spoil:** Detailed sample collection methods were not discussed in the ADE sampling reports. However, the sampling reports indicated that the samples were collected by hand from test pits advanced in the stockpiles and disposable nitrile gloves were worn between sample locations. The sampling reports also noted that the samples were collected by an experienced environmental scientist.	The sample collection methods are acceptable for the purpose of tunnel spoil and topsoil characterisation and validation.

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
Topsoil: EES indicated in the Validation Report that topsoil was sampled by hand from the top 100 mm depth. Nitrile gloves were worn and a new pair used for each sample.	
Sample handling and containers Samples were reported to have been placed within sterile glass jars with Teflon lined lids, and chilled during storage and subsequent transport to the labs. Topsoil samples analysed for asbestos were collected as 250 ml samples and placed into plastic bags.	Acceptable.
Chain of Custody (COC) Completed COC forms were provided in the Validation Report.	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 **Tunnel Spoil:** Field quality control samples prepared by ADE over the sampling program included field intra-laboratory (at a rate of one per eight primary samples) and inter-laboratory duplicates (at a rate of one per eight primary samples). **Topsoil:** Field quality control samples were not collected during the topsoil sampling event.	Acceptable. ADE stated in the sampling reports that trip blanks and trip spikes were prepared and *"all results were noted to be within the acceptable range of values for the adopted criteria"*. However, the collection of the trip blanks and trip spikes were not reflected on the COCs or the laboratory certificates. As such, for this audit, the Auditor has assumed that trip blanks and trip spikes were not prepared. The lack of the trip blanks and trip spikes is not considered to affect the usability of the data set since no volatile compounds (including BTEX and TRH C_6-C_{10}) were detected in the samples analysed. The analytical results for the topsoil were all below the limit of reporting (LOR) or acceptance criteria and the usability of the data is not considered to be impacted by the lack of field control samples.
Field quality control results The results of field quality control samples for the tunnel spoil were within appropriate limits, with the following exception: • The Relative Percentage Difference (RPD) for EC between the primary sample WAC267.TP1 and the corresponding intra-laboratory duplicate sample WAC267_BR1 was 125% and was outside the acceptance criteria.	Acceptable. The RPD outlier is likely due to the heterogenous nature of the soil samples and is not considered to affect the usability of the data set.
NATA registered laboratory and NATA endorsed methods **Tunnel Spoil:** Laboratories used included Sydney Laboratory Services (SLS) and Eurofins. Laboratory certificates were National Association of Testing Authority (NATA) stamped. **Topsoil:** Laboratories used included ALS Environmental (ALS) and Australian Safer Environment & Technology Pty Ltd (ASET) for asbestos analysis. Laboratory certificates were NATA stamped.	Acceptable.

Field and Lab QA/QC	Auditor's Opinion
Analytical methods Analytical methods were included in the laboratory test certificates.	Acceptable.
Holding times The COCs and laboratory certificates indicate that the holding times were met.	Acceptable.
Practical Quantitation Limits (PQLs) PQLs were lower than the threshold criteria for the contaminants of concern.	Acceptable.
Laboratory quality control samples Quality control reports produced by SLS were not included in ADE's sampling reports and therefore, could not be reviewed by the Auditor. Quality control reports produced by Eurofins were sighted by the Auditor. The quality control reports indicated that QC samples prepared by Eurofins and ALS included method blanks (one per process batch), laboratory duplicates (one per process batch), laboratory control samples (one per process batch), matrix spikes (one matrix per soil type) and surrogate spikes (for chromatographic analysis of organics).	As SLS is a NATA registered laboratory, it is expected that standard laboratory quality control samples would have been prepared during sample analysis. It is also noted that ADE indicated in the sampling reports that they reviewed the internal QA/QC undertaken by the laboratories and considered the results satisfactory. It is also noted that the sample receipt notifications from SLS or Eurofins were not included in the sampling reports. The missing quality control reports and the sample receipt notifications were likely an oversight from ADE during report production. In the Auditor's opinion, this is considered to be acceptable.
Laboratory quality control results **Tunnel Spoil:** The results of laboratory quality control samples included in the Eurofins batches were generally within appropriate limits, with the following exceptions: • Batch 810915-S: Minor RPD outliers in laboratory duplicate samples due to sample heterogeneity. • Batch 810916-S: Minor outliers in matrix spike recovery due to sample matrix interference. As discussed above, quality control reports produced by SLS were not sighted by the Auditor. **Topsoil:** The results of the laboratory quality control samples completed by ALS for the topsoil were within acceptable limits with the exception of: • The matrix spike recovery for lead was not determined • The laboratory duplicate RPD for zinc was outside acceptable limits.	Acceptable. The minor non-conformances are not considered to effect the usability of the data.
Data Quality Indicators (DQI) and Data Evaluation (completeness, comparability, representativeness, precision, accuracy) Neither ADE or EES defined DQIs and did not undertake a formal QA/QC data evaluation against the five category areas. ADE did, however, concluded that the field and laboratory data "were usable".	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

In considering the data as a whole the Auditor concludes that:

- The samples collected are considered to be representative and fit for purpose.

- There is a high degree of confidence that data is comparable for each sampling and analytical event.
- The Auditor considers that the data is of reasonable accuracy and precision. However, the Auditor also notes the following:
  - Quality control reports produced by SLS were not included in the consultant reports and therefore, were not reviewed by the Auditor. Given that SLS is NATA accredited, the missing laboratory control reports are not expected to affect the outcome of this Audit. It is further noted that ADE indicated in the sampling reports that they have reviewed the internal QA/QC undertaken by the laboratories and considered the results satisfactory.
  - Sample receipt notifications from the laboratories were not included in the ADE reports and therefore, sample condition upon receipt by the laboratories could not be evaluated.
  - The lack of the trip blanks and trip spikes is not considered to affect the usability of the data set given that the samples were reported to have been stored in cooler boxes which contained ice packs (or equivalent) present in order to maintain the samples at a temperature below approximately 4 ^{0}C, samples were received by laboratories within one or two days of sampling and all analytical results indicated concentrations of volatile contaminants were below the LOR.

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. Based on the proposed future use of the development as recreational land, the human health criteria for 'public open space' were adopted. The results for the tunnel spoil were assessed against the requirements of the *Rozelle Interchange tunnel spoil order 2019* issued by the EPA under clause 93 of Protection of the Environment Operations (Waste) Regulation 2014, as discussed in Section 6.

7.1 Human Health Assessment Criteria

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

- NEPM (2013) Health Investigation Levels (HILs) for 'public open space' (HIL C) land use.
- NEPM (2013) Health Screening Levels (HSLs) for 'public open space' (HSL C) land use. The HSLs assumed a sand soil type. Depth to source adopted was <1 m as an initial screen.
- NEPM (2013) Management Limits (MLs) for petroleum hydrocarbons for 'Residential and Open Space' land use and assuming coarse soil texture.
- Friebel & Nadebaum (2011) HSLs for direct contact for all land use categories, and vapour inhalation/direct contact pathways for intrusive maintenance workers.

7.2 Ecological Assessment Criteria

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

- NEPM (2013) Ecological Screening Levels (ESLs) for 'Urban Residential and Public Open Space' land use, assuming coarse soil. The EIL apply from surface to 2 m depth below the finished surface/ground level which corresponds to the root zone and habitation zone of many species.
- NEPM (2013) Ecological Investigation Levels (EILs) for 'Urban Residential and Public Open Space' 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). The EILs apply principally to contaminants in the top 2 m of soil at the finished surface/ground level which corresponds to the root zone and habitation zone of many species.

7.3 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.

7.4 Auditor's Opinion

The environmental quality criteria referenced by the Auditor are consistent with those adopted by ADE and EES with the exception of the following:

- ADE adopted HIL A for residential site use with gardens/accessible soil which is more conservative than HIL C criteria.

- ADE did not mention assessment of 'aesthetic' contamination and did not adopt ecological assessment criteria as outlined in the NEPM (2013).

The assessment criteria adopted by ADE are considered to be appropriate in the context of their sampling objective (characterisation/validation of tunnel spoils). To evaluate the site suitability post backfilling, assessment of 'aesthetic' contamination and potential ecological risk have been considered by the Auditor (Section 8).

8. EVALUATION OF IMPORTED MATERIALS

The Validation Report indicates that the access shaft was backfilled with flowable fill cementitious material with a volume of approximately 6,000 m^3. The flowable fill was pumped in layers and allowed to cure before pumping the next layer. Pumping of flowable fill occurred over an approximate one month period between November and December 2021.

Approximately 916 tons (or 450 m^3 assuming the density of the materials is 2 tons per m^3) of tunnel spoils were imported from the WestConnex Rozelle Interchange Site to reinstate surface levels within the access shaft and wider construction compound area. As discussed in Section 6, the tunnel spoils were covered by *The Rozelle Interchange tunnel spoil order 2019* and were sampled by ADE for the purpose of chemical characterisation/validation in 2021. Material was transported directly from the source site to the receiving site and applied directly to the site with no processing being undertaken. Site levels across the wider construction compound area were then finished with approximately 410 tonnes of manufactured topsoil growth medium specially made for this purpose and supplied by Benedict Sand and Gravel and imported to site by Co-Ordinated Landscapes. EES provided product information sheets that identified the topsoil as Benedict Turfloam with 20% pasteurised organics.

24 tunnel spoil samples were collected by ADE and 10 topsoil samples by EES. As the tunnel spoils were natural soils/bedrock, no asbestos samples were collected by ADE. However, visual inspections on the spoils were performed at the time of the sampling works (Section 8.3). Asbestos analysis (presence/absence) was undertaken on the topsoil samples.

To draw conclusions on the site suitability, the Auditor evaluated the analytical results against the adopted environmental quality criteria outlined in Section 7.

8.1 Evaluation of Analytical Results Against Adopted Environmental Quality Criteria

The analytical results for the tunnel spoil and topsoil have been assessed against the environmental quality criteria and are summarised in Table 8.1.

Table 8.1: Evaluation of Soil Analytical Results – Summary Table

Analyte	n	Detections	Maximum (mg/kg)	n > Human Health Screening Criteria	n > Terrestrial Ecological Screening Criteria
Asbestos	10	0	-	0 above detection limit of 0.1 g/kg	-
Benzene	34	0	<PQL	0 above HSL C NL	0 above ESL (open space) (coarse) 50 mg/kg
Toluene	34	0	<PQL	0 above HSL C NL	0 above ESL (open space) (coarse) 85 mg/kg
Ethylbenzene	34	0	<PQL	0 above HSL C NL	0 above ESL (open space) (coarse) 70 mg/kg
Total Xylenes	34	0	<PQL	0 above HSL C NL	0 above ESL (open space) (coarse) 105 mg/kg
F1 (TRH C_6–C_{10} minus BTEX)	34	0	<PQL	0 above HSL C NL	0 above ESL (open space) 180 mg/kg
F2 (TRH >C_{10}–C_{16} minus naphthalene)	34	0	<PQL	0 above HSL C NL	-
TRH C_6–C_{10}	34	0	<PQL	0 above ML (open space) 700 mg/kg	-
TRH >C_{10}–C_{16}	34	0	<PQL	0 above ML (open space) 1000 mg/kg	0 above ESL (open space) 120 mg/kg

Analyte	n	Detections	Maximum (mg/kg)	n > Human Health Screening Criteria	n > Terrestrial Ecological Screening Criteria
TRH >C_{16}-C_{34}	34	0	<PQL	0 above ML (open space) 2500 mg/kg	0 above ESL (open space) (coarse) 300 mg/kg
TRH >C_{34}-C_{40}	34	0	<PQL	0 above ML (open space) 10,000 mg/kg	0 above ESL (open space) (coarse) 2800 mg/kg
Naphthalene	34	0	<PQL	0 above HSL C NL	0 above EIL (open space) 170 mg/kg
Benzo(a)pyrene	34	0	<PQL	-	0 above ESL (open space) 0.7 mg/kg
Benzo(a)pyrene TEQ	34	0	<PQL	0 above HIL C 3 mg/kg	-
Total PAHs	34	0	<PQL	0 above HIL C 300 mg/kg	-
Pentachlorophenol	24	0	<PQL	0 above HIL C 120 mg/kg	-
Total Phenols	24	0	<PQL	0 above HIL C 40,000 mg/kg	-
Arsenic	34	1	5.3	0 above HIL C 300 mg/kg	0 above EIL (open space) 100 mg/kg
Cadmium	34	0	<PQL	0 above HIL C 90 mg/kg	-
Chromium	34	9	6	0 above HIL C 300 mg/kg	0 above most conservative ACL (open space) 190 mg/kg
Copper	34	1	6	0 above HIL C 17,000 mg/kg	0 above most conservative ACL (open space) 60 mg/kg
Lead	34	3	16	0 above HIL C 600 mg/kg	0 above generic ACL (open space) 1100 mg/kg
Mercury	34	0	<PQL	0 above HIL C 80 mg/kg	-
Nickel	34	1	5.7	0 above HIL C 1200 mg/kg	0 above most conservative ACL (open space) 30 mg/kg
Zinc	34	18	29	0 above HIL C 30,000 mg/kg	0 above most conservative ACL (open space) 70 mg/kg
PCB	34	0	<PQL	0 above HIL C 1 mg/kg	-
OCP	34	0	<PQL	0 above HIL C	0 above EIL
OPP	34	0	<PQL	0 above HIL C	-

n number of samples
- No criteria available/used
NL Non-limiting
<PQL Less than the practical quantitation limit

8.2 Evaluation of Analytical Results Against the Resource Recovery Order

Based on Table 8.1, the Auditor considers that the sampled tunnel spoils met the definition as described in *The Rozelle Interchange tunnel spoil order 2019* for the following reasons:

- Non-detect for organics.
- Inorganic compound concentrations were within the background concentration ranges.
- The material did not contain or comprise actual or potential acid sulphate soil and contained no more than 0.4% w/w shotcrete based on the information presented in the ADE 2021 sampling reports.

8.3 'Aesthetic' Contamination Potential

ADE conducted visual inspections on the spoils during their sampling works and noted that "*No foreign materials (with the exception of trace shotcrete), ACM, indicators of PASS, hydrocarbon staining/odours or paint chips were observed within the materials inspected*".

ADE's visual inspection outcomes are considered to be consistent with the nature of the soils (natural soil/bedrock) and therefore, the 'aesthetic' contamination potential related to the tunnel spoil is considered to be low.

EES inspected and sampled the topsoil and did not identify any aesthetic issues.

8.4 Auditor's Opinion

In the Auditor's opinion, the analytical results are considered to be consistent with the nature of the tunnel spoils (natural soil/bedrock) and have met the definition as specified under *The Rozelle Interchange tunnel spoil order 2019*. The analytical results also indicate that the topsoil does not include concentrations of contaminants above the adopted assessment criteria. The Auditor is satisfied that the tunnel spoils and topsoil imported to site are suitable for use as backfilling materials and use of the site as public open space/recreational land.

9. CONTAMINATION MIGRATION POTENTIAL AND ASSESSMENT OF RISK

The site has been remediated and validated prior to backfilling, and the analytical results of the imported tunnel spoil and topsoil meet the adopted environmental quality criteria. On this basis, the Auditor considers the potential risk to site users or the environment from contamination under the proposed land use scenario is negligible.

10. COMPLIANCE WITH REGULATORY GUIDELINES AND DIRECTIONS

10.1 General

The Auditor has used guidelines currently made and approved by the EPA under section 105 of the NSW *Contaminated Land Management Act 1997*.

The investigation was generally conducted in accordance with 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 (2008) 'Managing Land Contamination, Planning Guidelines SEPP 55 - Remediation of Land' and were reported in accordance with the NSW EPA (2020) *Consultants Reporting on Contaminated Land*.

10.2 Development Approvals

A State Significant Infrastructure (SSI) development application (SSI 15_7400) was approved by the NSW Minister for Planning on 9 January 2017 for the construction and operation of the Sydney Metro C2S rail infrastructure project. Condition E67 of the SSI development approval relates to contamination and requires a site audit as outlined in Section 1.1 of this SAR.

This SAR and accompanying SAS has been completed in order to comply with Condition E67.

10.3 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.

10.4 Imported Materials

Based on the information in Section 8 and the site visit on 9 May 2022, the Auditor is of the opinion that the material imported to the site is suitable for use.

10.5 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 NSW 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.

11. CONCLUSIONS AND RECOMMENDATIONS

EES conclude in the Validation Report that:

- "*Material was lawfully imported to site in accordance with the Rozelle Interchange Tunnel Spoil Exemption 2019 and associated Receiving Requirements….*
- *Imported topsoil was assessed and determined to be suitable for public open space/recreational use.*
- *Importation of materials was undertaken in broad accordance with DP (2018).*
- *The overall risk posed to human health, environment and other people's property from importation of the subject natural material is considered to be low based upon reported observations and corresponding laboratory data*."

Based on the information presented in the EES report 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 the purposes of 'public open space/recreational use'.

12. OTHER RELEVANT INFORMATION

This Audit was conducted on behalf of CPB Contractors Pty Ltd and UGL Engineering Pty Ltd for the purpose of assessing whether the land is suitable for the proposed public open space/recreational use, i.e. a "Site Audit" as defined in Section 4 (definition of a 'site audit' (b)(iii)) of the CLM Act.

This summary report may not be suitable for other uses. EES and ADE 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 Boundary
Attachment 2: Site Survey
Attachment 3: Topsoil Sample Locations

Attachment 1: Site Boundary

Legend

Access shaft extent
Construction Site boundary
Former Site sheds
Monitoring bore gatic

0 5 10 15 20 m

ENVIRONMENTAL EARTH SCIENCES
CONTAMINATION RESOLVED

Title: Site layout and features

Client: Systems Connect

Location: Sydney Metro Shaft Site, Blues Point Road, McMahons Point NSW

Project Manager: SG

Scale: As Shown

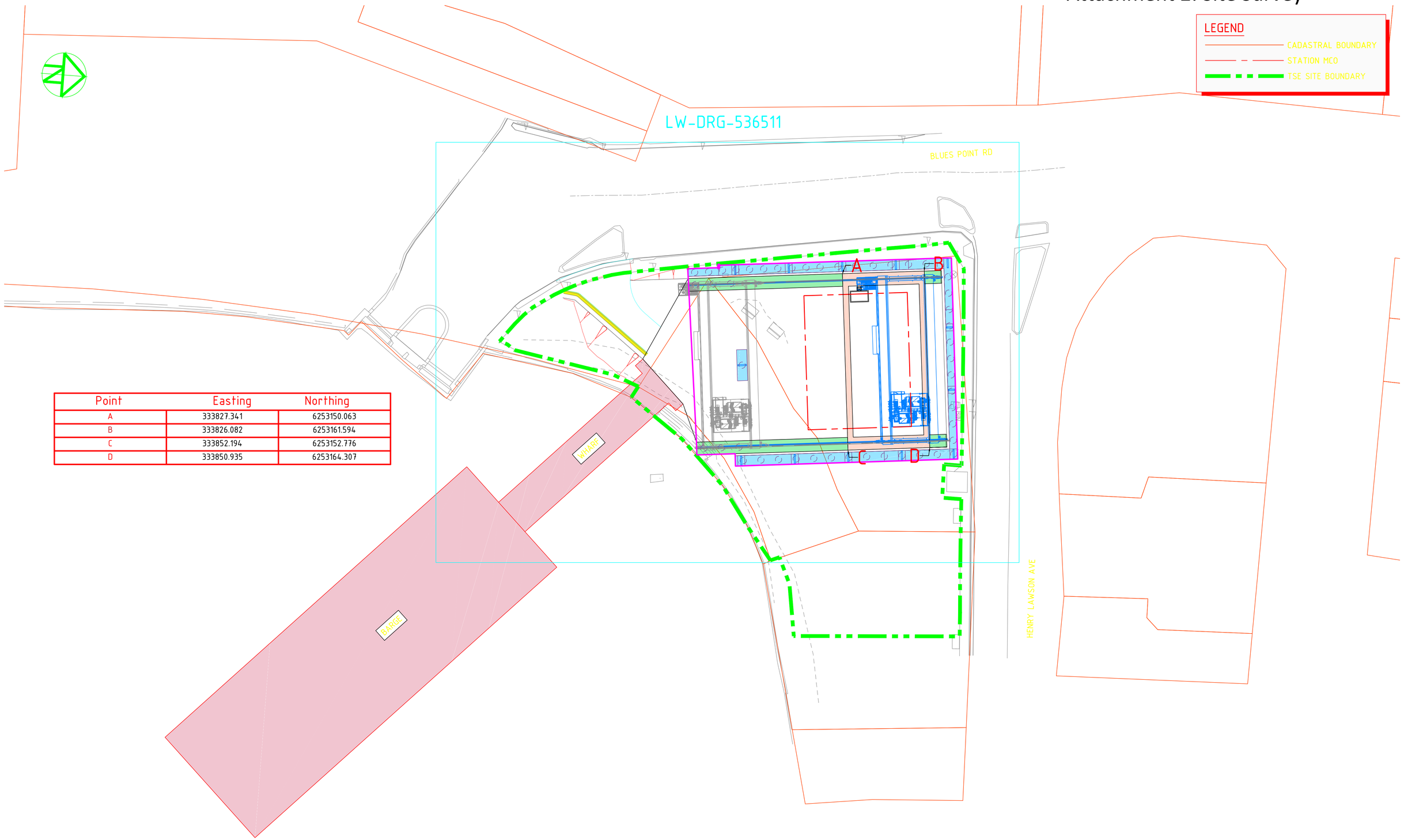
Job No: 121068

Figure 2

Drawn By: NE/ SG

Date: May 2022

Attachment 2: Site Survey



Point	Easting	Northing
A	333827.341	6253150.063
B	333826.082	6253161.594
C	333852.194	6253152.776
D	333850.935	6253164.307

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FOR INFORMATION

AMD	DESCRIPTION	DESIGNER SIGN./DATE	VERIFIED SIGN./DATE	APPROVED SIGN./DATE
00	ASSURED FOR CONSTRUCTION	CH/01.08.18	DT/01.08.18	DR/01.08.18

REVISION IN PROGRESS

CO-ORDINATE SYSTEM: MGA | HEIGHT DATUM: AHD | SCALE: 1:250

SCALES
0 2.5 5.0 7.5 10 12.5 15m
SCALE 1:250 A1 A1 SIZE

IC CERTIFIED - IC CERTIFICATE SMCSWTSE-IC-CER-B2-079-A

CLIENT
NSW GOVERNMENT Transport for NSW

SERVICE	INITIAL	DATE
CHECKS PRINT		
ENGINEER CHECK		
ARCADIS DRAFTING CHECK		
BACKDRAFTED/CORRECTED		
CONFIRMED/VERIFIED		

DRAWN	E. ESTORES JR.	01.08.18
DESIGNED	C. HIGGIN	01.08.18
DRG CHECK	F. BATHAN	01.08.18
DESIGN CHECK	R. VO	01.08.18
APPROVED	D. ROBERTSON	01.08.18

SYDNEY METRO CITY & SOUTHWEST

BLUES POINT SHAFT AND PRECINCT

LOCAL AREA WORKS OVERVIEW PLAN

FILE No. | SHEET: 5 OF 30 | A1

STATUS: FOR CONSTRUCTION | ©

DRG No. SMCSWTSE-JAB-BPS-LW-DRG-536510 | 00 | EDMS No.

DF 801*554

File Plotted C:\SMCSW-TSE-Export\

Plot Date & Time 11/27/2020 3:23 PM

Plotted by OLI

Attachment 3: Topsoil Sample Locations

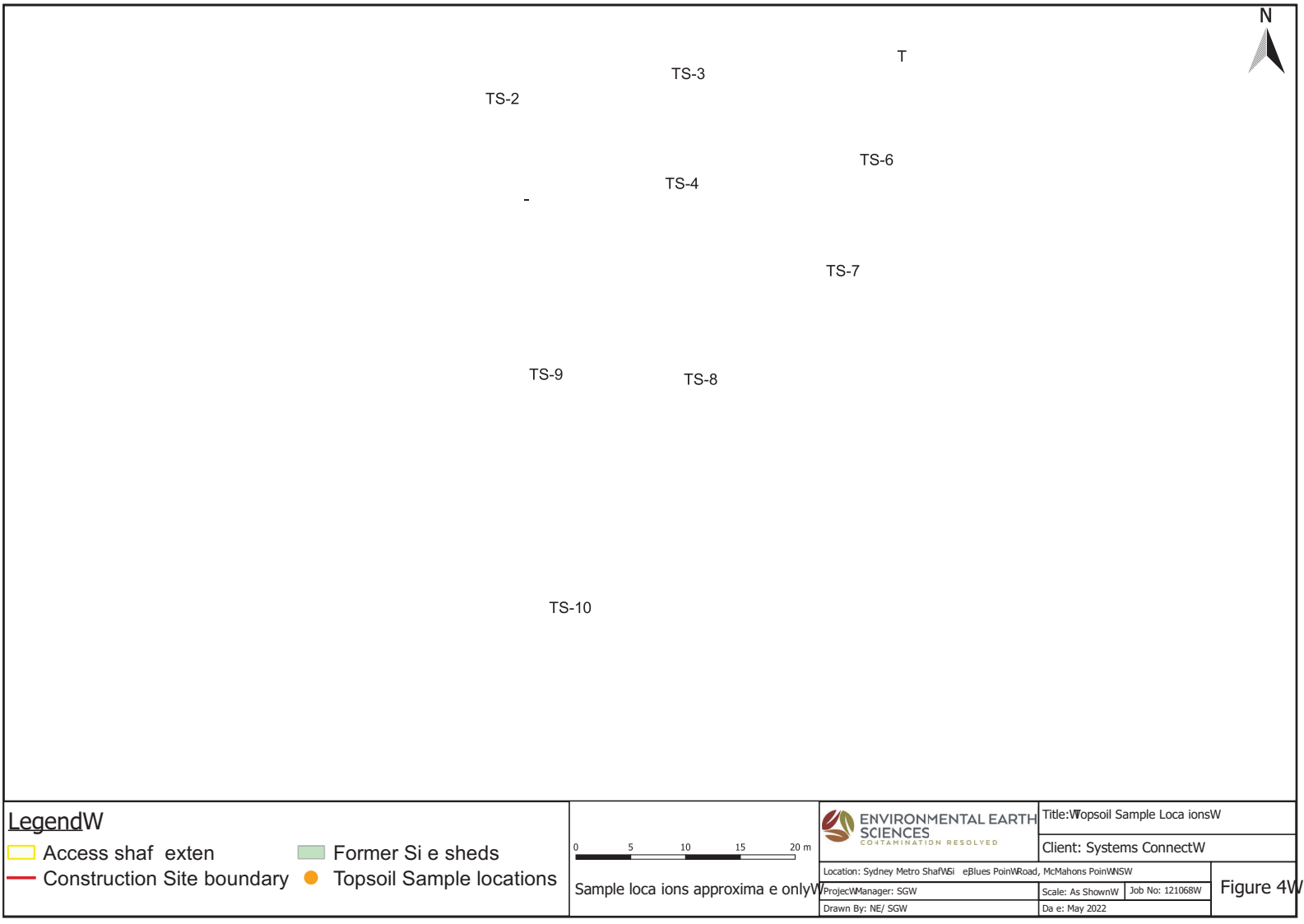


Figure 4W

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. LW-018

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	Louise Walkden
Company	Ramboll Australia Pty Ltd
Address	Level 3, 100 Pacific Highway, North Sydney
	Postcode 2060
Phone	02 9954 8100
Email	lwalkden@ramboll.com

Site details

Address: Blues Point Road, McMahons Point, NSW

Postcode: 2060

Property description

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

Part of Lot 1 DP902933 (shown as points A to D in the figure at end of Part I of this statement).

Local government area: North Sydney Council

Area of site (include units, e.g. hectares): approximately 220 m^2

Current zoning: RE1 Public Recreation under North Sydney Local Environment Plan 2013

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: Mathew Billings

Company: CPB Contractors Pty Ltd & UGL Engineers Pty Ltd

Address: Level 3, 116 Miller Street, North Sydney

Postcode: 2060

Phone: 0428 781 599

Email: Mathew.Billings@sclww.com.au

Contact details for contact person (if different from above)

Name: N/A

Phone:

Email:

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)

Condition E67 of Infrastructure Approval, application SSI 15_7400, approved by the Minister for Planning on 9 January 2017

☐ 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: Public open space

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:

Douglas Partners Pty Ltd (DP)

ADE Consulting Group Pty Ltd (ADE)

Environmental Earth Sciences Pty Ltd (EES)

Titles of reports reviewed:

- 'Report on Preliminary Site Investigation, Sydney Metro City and South West, Tunnel and Station Excavation Works Package, Proposed Blues Point Road Access Shaft, McMahons Point, NSW, prepared for John Holland CPB Ghella JV, Project 85608.07, May 2018', report reference: 85608.07.R.001.Rev0, dated 4 December 2018 prepared by DP.

- ‘Report on Detailed Site Investigation, Sydney Metro City and South West, Tunnel and Station Excavation Works Package, Proposed Blues Point Road Access Shaft, Blues Point Road, McMahons Point, prepared for John Holland CPB Ghella JV, Project 85608.07, November 2018’, report reference: 85608.07.R002.Rev1.DSI, dated 27 November 2018 prepared by DP.
- ‘Remediation Action Plan Sydney Metro & South West – Tunnel and Station Excavation Works Package, Proposed Blues Point Access Shaft, Blues Point Road, McMahons Point’, report reference: 85608.07, dated September 2018 prepared by DP.
- ‘Waste Analysis and Classification Report - Tunnel Site A, Westconnex Stage 3B, Rozelle Interchange Site, Rozelle NSW’, dated 27 July 2021 prepared by ADE Consulting Group Pty Ltd (ADE)
- ‘Waste Analysis and Classification Report - Tunnel Site B, Westconnex Stage 3B, Rozelle Interchange Site,Rozelle NSW’, dated 27 July 2021 prepared by ADE
- ‘Waste Analysis and Classification Report - Tunnel Site C, Westconnex Stage 3B, Rozelle Interchange Site, Rozelle NSW’, dated 27 July 2021 prepared by ADE
- ‘Validation of Natural Material for Backfilling of Sydney Metro Tunnel Access Shaft – Blues Point Road, McMahons Point NSW’, dated 16 May 2022 prepared by EES.

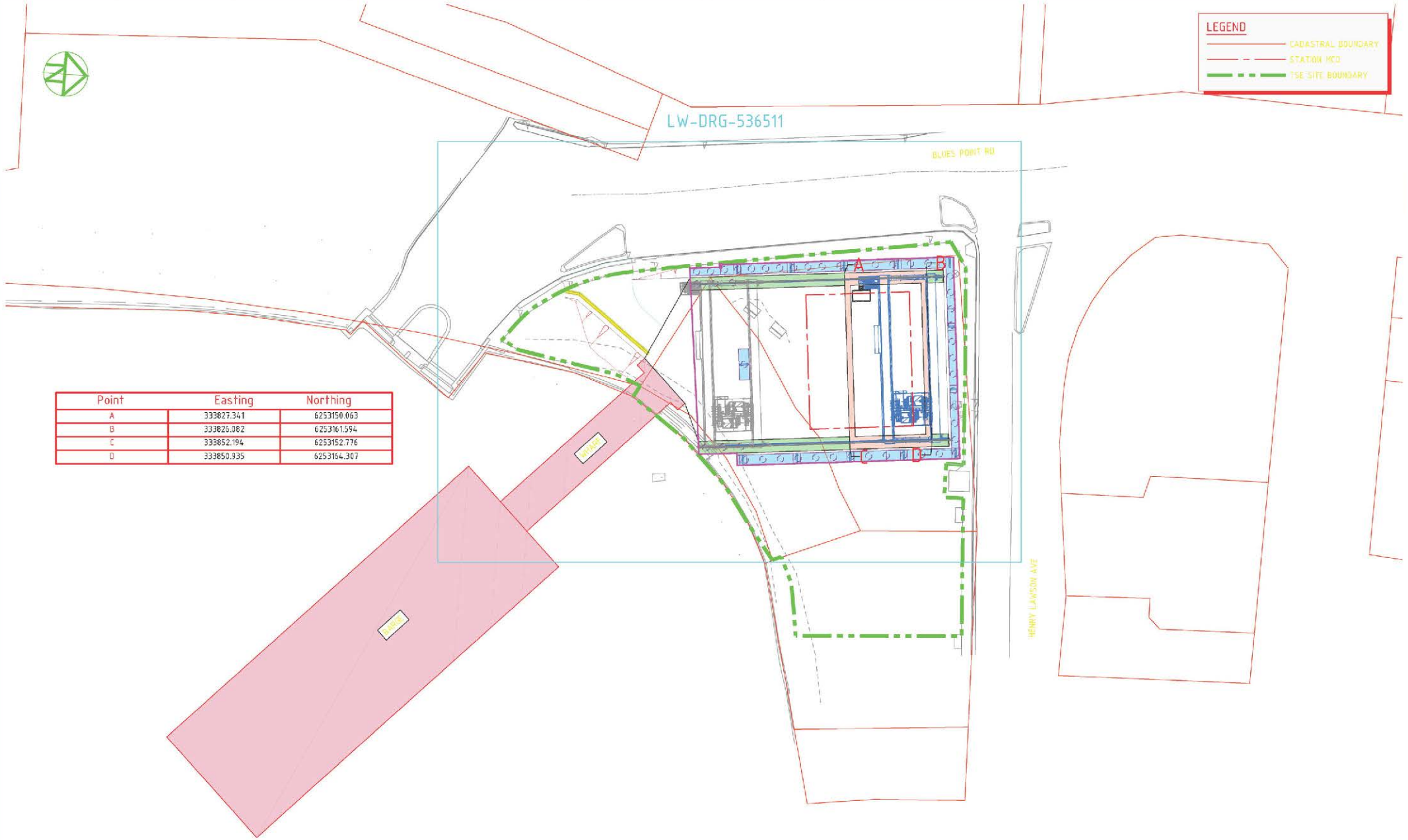
Other information reviewed, including previous site audit reports and statements relating to the site:

‘Site Audit Report – Sydney Metro Blues Point Access Shaft, Blues Point Road, McMahons Point NSW’ and Site Audit Statement TO-024-6, dated 27 November 2020 prepared by Tom Onus of Ramboll Australia Pty Ltd

Site audit report details

Title Site Audit Report – Sydney Metro Blues Point Access Shaft Reinstatement, Blues Point Road, McMahons Point NSW

Report no. LW-018 (Ramboll Ref: 318001281) 23 May 2022



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FOR INFORMATION

REVISION IN PROGRESS

00	ASSURED FOR CONSTRUCTION	CH/01.08.18	DT/01.08.18	DR/01.08.18
AMD	DESCRIPTION	DESIGNER SIGN/DATE	VERIFIED SIGN/DATE	APPROVED SIGN/DATE

CO-ORDINATE SYSTEM: MGA HEIGHT DATUM: AHD SCALE: 1:250

SCALES
0 2.5 5.0 7.5 10 12.5 15m
SCALE 1:250 AT A1 SIZE

IC CERTIFIED - IC CERTIFICATE SMCSWTSE-IC-CER-B2-079-A

CLIENT
NSW GOVERNMENT Transport for NSW

CHECK PRINT PRELIM FINAL

	INITIAL	DATE
ENGINEER CHECK		
DRAFTING CHECK		
BACKCHECK+CORRECTED		
CONFIRMED/VERIFIED		

DRAWN	E. ESTORES JR.	01.08.18
DESIGNED	C. HIGGIN	01.08.18
DRG CHECK	F. BATHAN	01.08.18
DESIGN CHECK	R. VO	01.08.18
APPROVED	D. ROBERTSON	01.08.18

SYDNEY METRO CITY & SOUTHWEST

BLUES POINT SHAFT AND PRECINCT
LOCAL AREA WORKS
OVERVIEW PLAN

FILE No. SHEET: 5 OF 30 A1
STATUS: FOR CONSTRUCTION (C)
DRG No. SMCSWTSE-JAB-BPS-LW-DRG-536510 EDMS No. 00

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):~~

~~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 access shaft was constructed to provide temporary access to the underground tunnels for construction of the Sydney Metro Chatswood to Sydenham (C2S) rail infrastructure. Following the cessation of the construction activities, the shaft was backfilled and is scheduled to be handed back to North Sydney Council for the proposed future use as an open space/recreational area.

Remediation and validation of the site was undertaken during shaft construction through excavation and off-site disposal of fill material and was the subject of a previous Section B Site Audit Statement (SAS) and supporting Site Audit Report (SAR) prepared by Tom Onus of Ramboll dated 27 November 2020 (TO-024-6). This Audit has been prepared to certify the site suitability following backfilling and resurfacing of the site, as required by the previous Section B SAS.

The access shaft was backfilled with flowable fill cementitious material, tunnel spoil imported from the WestConnex Rozelle Interchange Site under the Rozelle Interchange tunnel spoil order 2019 and validated topsoil. The access shaft and wider area that formed the construction work compound is now surfaced with turf. Based on the information presented in the EES report and observations made on site, the Auditor concludes that the site is suitable for the purposes of ‘public open space/recreational use’.

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

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

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

☐ ~~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. 1903

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: 23 May 2022

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.

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