SMWSASCA-CPU-1NL-NL000-CT-RPT-000038

AEC 30: 22-26 & 28-32 Lansdowne Road, Orchard Hills

Audit Number: MP181_8

15 February 2024

Site Audit Report

Document Information

Site Audit Report
AEC 30: 22-26 & 28-32 Lansdowne Road, Orchard Hills
Audit Number: MP181_8

Prepared by:

Senversa Pty Ltd
ABN: 89 132 231 380
Level 24, 1 Market St, Sydney, NSW 2000
tel:+61 2 8252 0000
www.senversa.com.au

Prepared for:

CPBUI JV
Level 5, 60 Miller Street
North Sydney NSW

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. MP181_8

This site audit is a:

☐ ~~statutory audit~~

☑ non-statutory audit

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

Site auditor details

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

Name: [redacted]

Company: Senversa Pty Ltd

Address: Level 24, 1 Market Street

Sydney NSW Postcode: 2000

Phone: 02 8252 0000

Email: [redacted]@senversa.com.au

Site details

Address: 22-26 & 28-32 Lansdowne Road, Orchard Hills, NSW

Postcode: 2748

Property description

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

Part Lot 82 Deposited Plan 29388

Part Lot 83 Deposited Plan 29388

(Attachment 1)

Local government area: Penrith City Council

Area of site (include units, e.g. hectares): 0.75 hectares

Current zoning: RU4: Primary Production Small Lots and an area not zoned

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

[redacted]

Company: CPB Contractors Pty Ltd and United Infrastructure Pty Ltd (CPBUI JV)

Address: Level 5, 60 Miller Street, North Sydney NSW

Postcode: 2060

Phone: 02 9035 5007

Email: [redacted]@cpbuijv.com.au

Contact details for contact person (if different from above)

Name: [redacted]

Phone: 02 9035 5007

Email: [redacted]@cpbbuijv.com.au

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)~~

☐ ~~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: Rail corridor which will include the rail line, embankments / noise barries, a stabling yard and maintenance facility and Luddenham station and passive open space adjacent to the rail corridor.

~~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 (Douglas Partners)

Titles of reports reviewed:

Draft ‘Sampling and Analysis Quality Plan (SAQP), Surface & Civil Alignment Works (SCAW) Package for Sydney Metro – Western Sydney Airport (SMWSA), Area of Environmental Concern (AEC) 30, 22-26 Lansdowne Road, Orchard Hills, dated 19 August 2022 by Douglas Partners.

‘Report on Detailed Site Investigation (Contamination), Surface & Civil Alignment Works (SCAW) Package for Sydney Metro – Western Sydney Airport (SWMSA) Area of Environmental Concern (AEC) 30, 22-26 Lansdowne Road, Orchard Hills’ dated 24 May 2023 by Douglas Partners.

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

Site audit report details

Title Site Audit Report, AEC 30: 22-26 & 28-32 Lansdowne Road, Orchard Hills

Report no. MP181_8 (Senversa Ref 19824) Date 15 February 2024

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):

Rail corridor which will include the rail line, embankments / noise barries, a stabling yard and maintenance facility and Luddenham station and passive open space adjacent to the rail corridor.

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 site has been used for rural residential land since at least 1980. An investigation of soil and groundwater reported analytical results and field observations consistent with no widespread contamination at the site.

Section A2

I certify that, in my opinion:

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

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

☐ Residential, including substantial vegetable garden and poultry

☐ Residential, including substantial vegetable garden, excluding poultry

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

☐ Day care centre, preschool, primary school

☐ Residential with minimal opportunity for soil access, including units

☐ Secondary school

☐ Park, recreational open space, playing field

☐ Commercial/industrial

☐ Other (please specify):

_____

EMP details

Title _____

Author _____

Date _____ No. of pages _____

EMP summary

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

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

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

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

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

~~Purpose of the EMP:~~

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

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

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

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

~~Overall comments:~~

Section B

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

_____

_____

_____

I certify that, in my opinion:

(B1)

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

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

AND/OR (B2)

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

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

AND/OR (B3)

☐ The site testing plan:

☐ **is** appropriate to determine

☐ **is not** appropriate to determine

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

AND/OR (B4)

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

☐ **have** been complied with

☐ **have not** been complied with.

*voluntary management proposal no. _____

**management order no. _____

AND/OR (B5)

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

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

☐ Residential, including substantial vegetable garden and poultry

☐ Residential, including substantial vegetable garden, excluding poultry

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

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

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

*Strike out as appropriate

Plan title:

Plan author:

Plan date: No. of pages:

SUBJECT to compliance with the following condition(s):

Overall comments:

Part III: Auditor's declaration

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

Accreditation no. MP_0803

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: 15 February 2024

Part IV: Explanatory notes

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

How to complete this form

Part I

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

Part II

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

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

Section A1

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

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

Section A2

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

Environmental management plan

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

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

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

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

Active or passive control systems

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

Auditor's comments

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

Section B

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

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

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

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

Part III

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

Where to send completed forms

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

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

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

EASTING 291949.67
NORTHING 6258647.0

EASTING 291959.14
NORTHING 6258645.72

EASTING 291942.38
NORTHING 6258601.19

EASTING 291887.34
NORTHING 6258598.68

EASTING 291882.52
NORTHING 6258563.24

EASTING 291860.42
NORTHING 625866.24

EASTING 291857.869
NORTHING 6258537.782

EASTING 291853.986
NORTHING 6258534.416

EASTING 291851.930
NORTHING 6258504.814

EASTING 291949.794
NORTHING 6258584.291

EASTING 291931.79
NORTHING 6258550.46

EASTING 291926.33
NORTHING 6258529.70

EASTING 291935.69
NORTHING 6258491.65

AEC30TP21
AEC30TP20
AEC30TP17
AEC30BH01
AEC30TP16
AEC30TP12
AEC30TP13
AEC30TP14
AEC30TP10
AEC30TP11
AEC30TP08
AEC30TP09
AEC30TP07
AEC30TP04
AEC30TP06
AEC30TP05
AEC30TP01
AEC30TP02
AEC30TP03
AEC30BH03
AEC30BH02

STOCKPILE AEC30SP2
STOCKPILE AEC30SP1

SP1
SP1A
SP1B
SP2

AEC 30

AEC 31a

0 10 20 30 40 50 m

LOCALITY PLAN

SITE

Shed for vehicle storage

PATONS LANE

LUDDENHAM RD

Legend

- SCAW Alignment
- EIS AEC: High Risk
- EIS AEC: Medium
- Site Boundary
- Approximate Location of Stockpiles
- Circular depression
- Former Shed Footprint
- Some Scattered Building Rubble
- Borehole / Groundwater Well Location
- Test Pit Location

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	CPBUI JV		
OFFICE:	Sydney	DRAWN BY:	MG/MN
SCALE:	1:900 @ A3	DATE:	17/05/2023

TITLE: **AEC30 Test Location Plan**
Sydney Metro Western Sydney Airport - SCAW
22-26 Landsdowne Road, Orchard Hills

N

PROJECT No:	204814.01
DRAWING No:	AEC30-01
REVISION:	0

Contents

Tables in Text

Appendices

List of Acronyms

Acronym	Definition
Measures	
%	per cent
µg/L	Micrograms per Litre
ha	Hectare
km	Kilometres
m	Metre
mbgl	Metres below ground level
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Litre
mm	Millimetre
ppm	Parts Per Million
ACL	Added Contaminant Limit
ADWG	Australian Drinking Water Guidelines
AEC	Area of Environmental Concern
AF	Asbestos Fines
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZG	Australian and New Zealand Guidelines
BaP	Benzo(a)pyrene
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes & Naphthalene
CLM Act	NSW Contaminated Land Management Act 1997
COC	Chain of Custody
Council	Penrith City Council
CPBUI JV	CPB Contractors Pty Ltd and United Infrastructure Pty Ltd
DGV	Default Guideline Value

Acronym	Definition
DP	Deposited Plan
DQI	Data Quality Indicator
DQO	Data Quality Objective
DSI	Detailed Site Investigation
EIL	Ecological Investigation Level
EIS	Environmental Impact Statement
Envirolab	Envirolab Services Pty Ltd
EPA	Environment Protection Authority (NSW)
ESL	Ecological Screening Level
FA	Fibrous Asbestos
GIL	Groundwater Investigation Level
HIL	Health Investigation Level
HSL	Health Screening Level
IAA	Interim Audit Advice
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
NEPM	National Environment Protection Measure
NHMRC	National Health and Medical Research Council
NL	Non-Limiting
n	Number of Samples
OCPs	Organochlorine Pesticides
OPPs	Organophosphorus Pesticides

Acronym	Definition
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PFAS	Perfluoroalkyl and Polyfluoroalkyl Substances
pH	A measure of acidity, hydrogen ion activity
PID	Photoionisation Detector
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RPD	Relative Percent Difference
SAR	Site Audit Report
SAS	Site Audit Statement
SAQP	Sampling and Analysis Quality Plan
SCAW	Surface & Civil Alignment Works
SMWSA	Sydney Metro – Western Sydney Airport
SWL	Standing Water Level
TCLP	Toxicity Characteristic Leaching Procedure
TPHs	Total Petroleum Hydrocarbons
TRHs	Total Recoverable Hydrocarbons
VOCs	Volatile Organic Compounds
-	On tables is "not calculated", "no criteria" or "not applicable"

1.0 Introduction

A site contamination audit has been conducted in relation to the site at 22-26 & 28-32 Lansdowne Road, Orchard Hills NSW (known as 'AEC 30').

The site is part of the Sydney Metro – Western Sydney Airport (SMWSA) rail line that will extend approximately 23 km from St Marys to the Western Sydney Aerotropolis. The Surface & Civil Alignment Works (SCAW) package is between Orchard Hills and Western Sydney Airport.

Areas of environmental concern (AECs) have been identified along the SCAW corridor requiring investigation. The current site is known as AEC 30. The remaining AECs will be subject to separate audits.

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).

Details of the audit are:

Requested by: [redacted] on behalf of CPB Contractors Pty Ltd and United Infrastructure Pty Ltd (CPBUI JV)

Request/Commencement Date: 7 June 2022

Auditor: [redacted]

Accreditation No.: 0803

The scope of the audit included:

- Review of the following reports:
  - Draft 'Sampling and Analysis Quality Plan (SAQP), Surface & Civil Alignment Works (SCAW) Package for Sydney Metro – Western Sydney Airport (SMWSA), Area of Environmental Concern (AEC) 30, 22-26 Lansdowne Road, Orchard Hills' dated 19 August 2022 by Douglas Partners.
  - 'Report on Detailed Site Investigation (Contamination), Surface & Civil Alignment Works (SCAW) Package for Sydney Metro – Western Sydney Airport (SWMSA) Area of Environmental Concern (AEC) 30, 22-26 Lansdowne Road, Orchard Hills' dated 24 May 2023 by Douglas Partners (DSI).
- A site visit by the auditor on 8 November 2023.
- Discussions with CPBUI JV, and with Douglas Partners who undertook the investigation.

The SAQP was previously reviewed, and comments provided by the auditor in Interim Audit Advice (IAA) No.1 dated 1 September 2022, and IAA No.2 dated 11 May 2023. IAA No. 3 issued on 5 June 2023 confirmed that the DSI could be finalised. IAA have been provided in **Appendix C**.

2.0 Site Details

2.1 Location

The site locality is shown on **Attachment 1, Appendix A**.

The site details are as follows:

Street address:	22-26 & 28-32 Lansdowne Road, Orchard Hills, NSW
Identifier:	Part Lot 82 and Part Lot 83 DP 29388 (**Attachment 1, Appendix A**)
Local Government:	Penrith City Council
Owner:	Sydney Metro
Site Area:	Approximately 0.75 ha

The boundaries of the site are not well defined by streets/adjoining properties. A survey plan of the site has been provided (**Attachment 1, Appendix A**).

2.2 Zoning

The current zoning of the site is RU4: Primary Production Small Lots and an area not zoned along the proposed rail line.

2.3 Adjacent Uses

The site is located within an area of rural/residential land, with sheds, dams and hobby farms present. AEC 30 had a potential workshop and laydown/stockpile area for waste and hazardous material.

A dam is located adjacent to the west of the site. A drainage channel from the dam runs through the southern portion of the site to an unnamed creek adjacent to the south of the site. The unnamed creek flows into Blaxland Creek approximately 380 m to the east of the site.

2.4 Site Condition

Douglas Partners noted the following during the site investigations on 15 December 2022, 17 January 2023, and 8, 9, and 15 February 2023:

- The site was grassed with some mature trees present.
- Two small stockpiles (approximately 11 m^3 and 2 m^3) were present in the south-central portion of the site and contained sand with rootlets and gravel. One stockpile also contained tiles. The origins of the stockpiles are unknown.
- Evidence of earthworks are present to the northern portion of the site, as well as stockpiling adjacent to the north.
- The former shed footprint is located to the northeast of the site, and the circular depression is apparent to the southeast corner of the site.
- Building rubble was present along the southern and eastern boundaries and the western fence line.

The following was noted by the auditor during the site visit on 8 November 2023:

- The site appeared similar to Douglas Partner's description except the stockpiles and mature trees were no longer present.
- The site was cleared and vacant with some grass.

2.5 Proposed Development

It is understood that the site is to be redeveloped by CPBUI JV as part of the proposed development of the SMWSA line. The SMWSA line development includes approximately 10 km of railway track from Orchards Hills to the Western Sydney Airport, embankments/noise barriers, a stabling yard and maintenance facility, station and passive open space adjacent to the rail corridor.

For the purposes of this audit, the 'commercial/industrial' land use scenario will be assumed.

3.0 Site History

Douglas Partners provided a summary of the site history based on the Environmental Impact Statement (EIS) review of aerial photographs, site photographs and NSW EPA records. Consistent with the current condition, the site has been rural land for residential use since at least 1980.

In the auditor's opinion, the site history does provide an adequate indication of past activities. The auditor is satisfied that there is no evidence of past uses that have significant potential to contaminate the site.

Previous site uses identified in the EIS with the most significant potential to cause contamination included a potential former workshop, minor storage and on-site disposal of waste, and the use or storage of hazardous building materials. Douglas Partners noted that there was no evidence of the potential former workshop on-site, but did note building rubble present to the east, south and west, as well as two stockpiles and a circular depression to the southeast.

4.0 Contaminants of Concern

Douglas Partners provided a list of the contaminants of concern and potentially contaminating activities. These have been tabulated in **Table 4.1**.

Table 4.1: Contaminants of Concern

Area	Activity	Potential Contaminants
Within the site	Potential workshops	Soil and groundwater: Heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAH), and phenols. Groundwater: volatile organic compounds (VOC).
Area within the site to the southern and western boundaries	Minor waste storage / on-site disposal	Soil: Heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), TRH, BTEX, PAH, phenols, OCP, OPP, PCB, and asbestos.
Area within the site on the eastern boundary	Use or storage of hazardous building materials	Soil: Lead, PCB, and asbestos.

Given that no cropping was evident historically at the site, Douglas Partners considered that perfluoroalkyl and polyfluoroalkyl substances (PFAS) impacts were unlikely.

The auditor considers that the analyte list used by Douglas Partners adequately reflects the site history and condition.

5.0 Stratigraphy and Hydrogeology

Following a review of the reports provided, a summary of the site stratigraphy and hydrogeology was compiled as follows.

5.1 Stratigraphy

The sub-surface profile of the site is summarised in **Table 5.1**.

Table 5.1: Stratigraphy

Depth (mbgl)	Subsurface Profile
0.0 – 0.3	Fill: silty clay or silty sand. The thickness of this layer varies from 0.05 to 0.8 m. Wire and timber fragments were identified from 0.0 to 0.35 m at one location.
0.3 – 4.0	Silty clay, containing ironstone gravel.
4.0 (maximum of 15.0) to depth	Siltstone of very low to low strength.

mbgl – metres below ground level

The auditor considers that adequate information has been provided to provide context for the audit.

The site is not within an area of associated with a risk of acid sulfate soil.

The auditor considers that the depth of fill and underlying stratigraphy have been adequately characterised.

5.2 Hydrogeology

Groundwater investigations have been undertaken at the site. Depth to groundwater over the site is between approximately 3.7 mbgl and 6.3 mbgl (prior to sampling). It is noted that the depth to groundwater prior to well development was approximately 0.9 mbgl and 10.9 mbgl). Based on the field observations, groundwater is considered likely to flow to the southwest. However, Douglas Partners notes that based on topography, groundwater flow direction is to the southeast. There are no registered groundwater bores within a 500 m radius of the site.

The nearest surface water receptor is an unnamed creek flowing approximately 40 m adjacent to the south of the site, which flows into Blaxland Creek approximately 380 m to the east. A dam is located adjacent to the site, approximately 30 m to the west, and two dams are located approximately 150 m to the north. Surface water across the site is expected to flow to the south and south-east.

The auditor considers that the hydrogeology has been adequately characterised.

6.0 Evaluation of Quality Assurance and Quality Control

The auditor has assessed the overall quality of the data by review of the information presented in the referenced reports, supplemented by field observations. The auditor's assessment follows in **Tables 6.1** and **6.2**.

Table 6.1: QA/QC – Sampling and Analysis Methodology Assessment

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
Data Quality Objectives (DQO) Douglas Partners defined specific DQOs in accordance with the seven step process outlined in EPA (2017) Guidelines for the NSW Site Auditor Scheme.	These were considered appropriate for the investigations conducted.
Sampling pattern, locations, and sampling density Soil: Investigation locations were spaced to gain coverage of the majority of the site. The two stockpiles, former shed footprint and circular depression were targeted for sampling. Douglas Partners did not observe any evidence of the former potential workshop or storage or hazardous material on-site as noted in the EIS. Groundwater: Three monitoring wells were located across the site, with one up-gradient (northern, south-western and south-eastern ends of the site). **Sampling density** Soil: The sampling density of 18 test pit locations over approximately 0.75 ha exceeds the minimum recommended by EPA (2022) Sampling Design Guidelines. Two samples were taken from each stockpile, which exceeds the minimum number recommended by the EPA (2022) Sampling Design Guidelines. Samples analysed for asbestos were generally not collected as outlined in NEPM (2013) (Schedule B1). However, 500ml samples were collected for analysis of fibrous asbestos from all test pit locations., and one bulk (10 kg) sample was taken from each stockpile and sieved for potential asbestos containing materials. Groundwater: A total of three groundwater wells were installed at the site and sampled on 15 February 2023.	These investigation locations adequately target the main areas of concern. With regards to asbestos, given that no widespread anthropogenic materials were identified at the site, the auditor is satisfied that the sampling was appropriate.
Sample depths Samples were collected and analysed from a range of depths, with the primary intervals being within the shallow fill (0.0-0.3 mbgl) and at and around the natural silty clay interface (around 0.3-0.6 mbgl). Stockpile samples were collected and analysed from depths of 0.0 m to 0.3 m.	This sampling strategy was appropriate and adequate to characterise the primary material types present on site.
Well construction Groundwater: The monitoring wells were installed to depths of 9.0 mbgl, 12 mbgl, and 15 mbgl, with screen intervals of 3 m, 9 m and 12 m placed in gravel. Wells were constructed of 50 mm uPVC. A bentonite seal of 0.5 m thickness was placed above the screen and the well backfilled with cement grout to the ground surface. The SWL intersects the screen interval in two of the three wells installed at the site.	As light non-aqueous phase liquids were not of concern, the screen depth being below the SWL is not considered to affect the results.

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
Sample collection method Soil: Sample collected was by hand directly from the excavator bucket. Groundwater: Wells were installed by solid flight augers and wash bore drilling, developed with a pump and samples were collected 5 days after development using low flow peristaltic with dedicated sample tubing.	Overall, the sample collection method was found to be acceptable.
Decontamination procedures Soil: No equipment was used that required decontamination. New gloves were reportedly used for each new sample. Groundwater: Equipment was decontaminated between monitoring well by rinsing in a diluted Liquinox solution and then rinsing with demineralised water. Dedicated tubing was used for each well. New gloves were reportedly used for each new sample.	Acceptable.
Sample handling and containers Samples were placed into prepared and preserved sampling containers provided by the laboratory and chilled during storage and subsequent transport to the labs. Samples for asbestos analysis were placed in plastic zip-lock bags. Groundwater samples to be analysed for heavy metals were not field filtered. The metals concentrations reported may therefore be over- or under-estimated depending on the groundwater pH.	Overall, the sample handling was found to be acceptable.
Chain of Custody (COC) Completed chain of custody forms were provided in the report.	Acceptable.
Detailed description of field screening protocols Soil: Field screening for volatiles was undertaken using a PID. Soil sub-samples were placed in ziplock plastic bags and the headspace measured for VOCs. Groundwater: Field parameters were measured during well sampling and development.	Acceptable.
Calibration of field equipment The reports indicated that calibration had been undertaken prior to use. Calibration certificates from the equipment supplier were provided for the water quality meter and PID.	Acceptable.
Sampling logs Soil logs are provided within the report, indicating sample depth, PID readings and lithology. Groundwater field sampling records were provided, indicating pre-purge and post sample SWL, field parameters, methodology and observations.	Acceptable.

Table 6.2: QA/QC – Field and Lab Quality Assurance and Quality Control

Field and Lab QA/QC	Auditor's Opinion
Field quality control samples Field quality control samples including trip blanks trip spikes (for the soil batch), a rinsate blank (for the groundwater batch), and field intra-laboratory and inter-laboratory duplicates were undertaken. The frequency of intra- and inter- laboratory samples for soil and groundwater, trip spikes and trip blanks for soil, and the rinsate blank for groundwater met the acceptance criteria.	Acceptable.

Field and Lab QA/QC	Auditor's Opinion
Field quality control results The results of field quality control samples were generally within appropriate limits. The following exceptions were noted: Relative Percent Difference (RPDs) for the inter- and intra-laboratory soil duplicate samples for two metals ranged from 32% to 104%. RPDs for the inter- and intra- laboratory groundwater duplicate samples for two metals ranged from 61% to 67%, and for naphthalene ranged from 50% to 120%. The highest of the check laboratory result and the project laboratory result was used in the assessment.	Overall, in the context of the dataset reported, the elevated RPD results are not considered significant, and the field quality control results are acceptable.
NATA registered laboratory and NATA endorsed methods Laboratories used included: Envirolab and Eurofins | mgt. Laboratory certificates were NATA stamped.	Acceptable
Analytical methods Analytical methods were included in the laboratory test certificates. Analytical methods were included in the laboratory test certificates. Both Envirolab and Eurofins provided brief method summaries of in-house NATA accredited methods used based on USEPA and/or APHA methods (excluding asbestos) for extraction and analysis in accordance with the NEPM (2013). Asbestos identification was conducted by Envirolab using polarised light microscopy with dispersion staining by method AS4964-2004 Method for the Qualitative Identification of Asbestos Bulk Samples.	The analytical methods are considered acceptable for the purposes of the site audit, noting that the AS4964-2004 is currently the only available method in Australia for analysing asbestos. DOH (2009) and enHealth (2005) state that "until an alternative analytical technique is developed and validated the AS4964-2004 is recommended for use".
Holding times Review of the COCs and laboratory certificates indicate that the holding times had been met with the exception of analysis for the soil and groundwater inter-laboratory samples. Douglas Partners reported that holding times have been met.	Given the holding time exceedances are only in the intra- and inter-laboratory duplicate samples, the analysis outside of holding times does not detract from the overall quality and completeness of the data.
Practical Quantitation Limits (PQLs) Soil: PQLs (except asbestos) were less than the threshold criteria for the contaminants of concern. Asbestos: The limit of detection for asbestos in soil was 0.01% w/w. Groundwater: The following trigger value was less than the PQL for chromium (0.001 mg/L, trigger value 0.0002 mg/L).	Soil (except asbestos): Overall the soil PQLs are acceptable. Asbestos: In the absence of any other validated analytical method, the detection limit for asbestos is considered acceptable. A positive result would be considered to exceed the "no asbestos detected in soil" criteria, providing this is applied within a weight of evidence approach to assess the significance of the exceedance, accounting for the history of the site and frequency of the occurrence. Groundwater: The elevated PQLs were only marginally elevated above the trigger values and in the context of the results reported and the site history, overall, these discrepancies do not materially affect the outcome of the audit.
Laboratory quality control samples Laboratory quality control samples including laboratory control samples, matrix spikes, surrogate spikes, blanks, internal standards and duplicates were undertaken by the laboratory. Envirolab did not undertake duplicates or matrix spikes on the sample in the TCLP batch.	The TCLP batch is for a preliminary waste classification and is not considered in the site suitability assessment and as such, sufficient quality control samples have been analysed to assess laboratory accuracy.
Laboratory quality control results The results of laboratory quality control samples were generally within appropriate limits, except for a slightly elevated matrix spike recovery for PFAS in a sample not considered in this report.	The slightly elevated spike recovery is not considered to affect the usability of the data as this sample is not considered in this report, and PFAS is not a COPC for this site, therefore the laboratory quality control results are acceptable.

Field and Lab QA/QC	Auditor's Opinion
Data Quality Indicators (DQI) and Data Evaluation (completeness, comparability, representativeness, precision, accuracy) Predetermined DQIs were set for laboratory analyses including blanks, replicates, duplicates, laboratory control samples, matrix spikes, surrogate spikes and internal standards. These were discussed with regard to the five category areas. There was limited discussion regarding actions required if data do not meet the expected objectives.	An assessment of the data quality with respect to the five category areas has been undertaken by the auditor and is summarised below.

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

- The data is likely to be representative of the overall conditions of the site.
- The data is complete.
- There is a high degree of confidence that data is comparable.
- The primary laboratory provided sufficient information to conclude that data is of sufficient precision.
- The data is accurate.

7.0 Environmental Quality Criteria

The auditor has assessed the results against Tier 1 criteria from National Environmental Protection Council (NEPC) National Environmental Protection (Assessment of Site Contamination) Measure 1999, as Amended 2013 (NEPM, 2013). Other guidance has been adopted where NEPM (2013) is not applicable, or criteria are not provided. Based on the proposed site use for SCAW activities, the criteria for 'commercial/industrial' and use has been referred to.

The auditor has assessed the **soil** data provided with reference to Tier 1 (screening) criteria from the following:

- Human Health Assessment
  - Health Based Investigation Levels (HIL D)
  - Soil Health Screening Levels (HSL D) for Vapour Intrusion. The most conservative criteria were adopted i.e. assumed depth to source < 1 m and sand.
  - CRC CARE (2011) Direct Contact (HSL D and intrusive maintenance worker).
  - Asbestos Health Screening Levels (HSL D).
- Ecological Assessment
  - Ecological Screening Levels (ESL commercial/industrial) assuming coarse soil.
  - Ecological Investigation Levels (EIL commercial/industrial). In the absence of site specific soil data on pH, clay content, cation exchange capacity and background concentrations, the published range of the added contaminant values have been applied as an initial screen.
- Management Limits (ML commercial/industrial) assuming coarse soil.
- Aesthetics
  - The auditor has considered the need for remediation based on the 'aesthetic' contamination as outlined in the NEPM (2013).

The auditor has assessed the **groundwater** data provided with reference to Tier 1 (screening) criteria from the following:

- Human Health Assessment
  - NEPM (2013) Groundwater Health Screening Levels (HSL D) for vapour intrusion (sand, 2 to <4 m) (applied for screening purposes).
  - NHMRC and NRMMC (2011) Australian Drinking Water Guidelines (ADWG).
  - WHO (2008) Petroleum Products in Drinking-water. applicable where HSLs are not applicable.
  - WHO (2011) Guidelines for drinking-water quality, fourth edition, applicable where the ADWG are not available.
- Ecological Assessment
  - Groundwater Investigation Levels (GILs) listed in NEPM (2013) for protection of aquatic ecosystems referenced in ANZECC (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality. The ANZECC 2000 guidelines have been updated in ANZG (2022) Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia. (Available at www.waterquality.gov.au/anz-guidelines). The Default Guideline Values (DGV) provided are concentrations of toxicants that should have no significant adverse effects on the aquatic ecosystem. The marine/fresh water 95% level of protection was adopted. Some have been modified based on bioaccumulation or acute-toxicity or potential toxicity to particular species.

Groundwater monitoring wells were screened across silty clay and siltstone. Groundwater identified in the wells may therefore relate to perched groundwater in silty clay or deeper groundwater related to fractures in siltstone. The yield in the wells is low and as there is a reticulated water supply for the area, extraction and use of groundwater as a resource is unlikely. Therefore, assessment of direct contact and consumption of groundwater is not required

8.0 Evaluation of Soil Analytical Results

Soil samples were analysed for a variety of contaminants including petroleum hydrocarbons, PAHs, phenols, OCPs, OPPs, PCBs, asbestos and heavy metals. The analytical results are summarised below in **Table 8.1**.

The results have been assessed against the environmental quality criteria. Soil sampling locations are shown as **Attachment 1, Appendix A**.

Table 8.1: Evaluation of Soil Analytical Results – Summary Table (mg/kg)

Analyte	N	Detections	Maximum	n > Human Health Screening Criteria (NEPM, 2013)	n > Terrestrial Ecological Screening Criteria (NEPM, 2013)
Lead	30	30	25	0 above HIL D of 1500 mg/kg	0 above generic ACL of 1800 mg/kg
Benzene	30	0	<PQL	0 above HSL D 0-1 m, sand of 3 mg/kg	0 above ESL (commercial/industrial) (coarse) of 75 mg/kg
Toluene	30	0	<PQL	HSL D, non-limiting	0 above ESL (commercial/industrial) (coarse) of 135 mg/kg
Ethyl benzene	30	0	<PQL	HSL D, non-limiting	0 above ESL (commercial/industrial) (coarse) of 165 mg/kg
Total Xylenes	30	0	<PQL	HSL D, non-limiting	0 above ESL (commercial/industrial) (fine) of 95 mg/kg
TRH C6-C10	30	0	<PQL	0 above ML (commercial/ industrial) of 800 mg/kg	-
TRH C10-C16	30	0	<PQL	0 above ML (commercial/ industrial) of 1000 mg/kg	-
F1 (TPH C6–C10 minus BTEX)	30	0	<PQL	0 above HSL D 0-1 m, sand of 260 mg/kg	0 above ESL (commercial/industrial) (coarse/fine) of 215 mg/kg
F2 (TPH >C10–C16 minus naphthalene)	30	0	<PQL	HSL D, Non limiting	0 above ESL (commercial/industrial) (coarse/fine) of 170 mg/kg
F3 (TRH C16-C34)	30	0	<PQL	0 above ML (commercial/ industrial) of 3500 mg/kg	0 above ESL (commercial/industrial) (coarse) of 1700 mg/kg
F4 (TRH C34-C40)	30	0	<PQL	0 above ML (commercial/ industrial) of 10,000 mg/kg	0 above ESL (commercial/industrial) (coarse) of 3300 mg/kg
Naphthalene	30	0	<PQL	HSL D, Non limiting	0 above generic EIL (commercial/industrial) of 370 mg/kg
Benzo(a)pyrene	30	0	<PQL	-	0 above ESL (commercial/industrial) (coarse/fine) of 1.4 mg/kg
BaP TEQ	30	0	<PQL	0 above HIL D 40 mg/kg	-
Total PAHs	30	0	<PQL	0 above HIL D 4000 mg/kg	-

Analyte	N	Detections	Maximum	n > Human Health Screening Criteria (NEPM, 2013)	n > Terrestrial Ecological Screening Criteria (NEPM, 2013)
Total Phenols	30	0	<PQL	0 above HIL D 240000 mg/kg	-
Arsenic	30	25	**300**	0 above HIL D 3000 mg/kg	**1 above generic EIL (commercial/ industrial) of 160 mg/kg**
Cadmium	30	0	<PQL	0 above HIL D 900 mg/kg	-
Chromium	30	30	130	0 above HIL D 3600 mg/kg	0 above most conservative ACL for commercial/industrial of 310 mg/kg
Copper	30	30	**370**	0 above HIL D 240000 mg/kg	**1 above most conservative ACL for commercial/industrial of 85 mg/kg**
Mercury	30	0	<PQL	0 above HIL D 730 mg/kg	-
Nickel	30	30	9	0 above HIL D 6000 mg/kg	0 above most conservative ACL for commercial/industrial of 55 mg/kg
Zinc	30	30	**220**	0 above HIL D 400000 mg/kg	**1 above most conservative ACL for commercial/industrial of 110 mg/kg**
Total OCPs	30	0	<PQL	0 above HIL D	-
Total OPPs	30	0	<PQL	-	0 above EIL (commercial/industrial)
PCBs	30	0	<PQL	0 above HIL D 7 mg/kg	-
Asbestos (FA/AF)	25	0	<PQL	0 above HSL D 0.07%	-
Asbestos (presence/absence)	25	0	<PQL	-	-

n number of samples

- No criteria available/used

<PQL Less than the practical quantitation limit

*Note: The numbers presented in the above table have been complied and transcribed manually from data tabulated by the consultants and thus some errors may be present. Any such errors are not considered by the auditor to be significant in the overall context and amount of data reviewed and conclusions drawn regarding the site during the audit.

The site is characterised by low level detection of metals in both fill and natural soil. No samples collected from test pits reported concentrations above the human health or ecological criteria. Arsenic, copper and zinc detected in one stockpile sample were reported above the ecological criteria. Leachability tests for arsenic and chromium were conducted on the stockpile sample, with results showing leachable arsenic in the stockpile. Douglas Partners recommended the stockpile material be disposed off-site, or reused in areas of limited ecological value (for example, under slabs or roads) with further consideration given to the leachability of the stockpile material. The remaining analytes were not reported above detection.

PID results were less than 5 ppm. No odours, staining or potential asbestos containing material were observed during sampling. This is consistent with the soil results indicating no widespread contamination at the site. No signs of contamination were visible within the test locations at the former shed, potential workshop, laydown and stockpile areas, and circular depression area noted in the EIS.

In the auditor's opinion the soil has been adequately characterised. The auditor is satisfied that no further investigations are needed and that the site criteria for commercial/industrial land uses have been met.

9.0 Evaluation of Groundwater Analytical Results

Three groundwater samples were collected from wells installed at the site, one was located up-gradient, and two were located down-gradient. The sample were analysed for a variety of contaminants including dissolved metals, petroleum hydrocarbons, PAHs, PCB, phenols, pesticides, VOCs, inorganics and ionic balance. The analytical results are summarised below in **Table 9.1**.

The results have been assessed against the environmental quality criteria. Sample locations are presented in **Attachment 1, Appendix A**.

Table 9.1: Summary of Maximum Groundwater Investigation Analytical Results (µg/L)

Analyte	n	Detections	Maximum	n > ANZG (2018)	n > HSL D (<2-4 mbgl)	n > DWG (ADWG 2011, WHO 2008, WHO 2011)
TRH C6-C10 less BTEX (F1)	3	0	<PQL	-	0 above 6000 µg/L	0 above 90 µg/L
TRH >C_{10}-C_{16} less naphthalene (F2)	3	0	<PQL	-	NL	0 above 900 µg/L
TRH >C16-C34 (F3)	3	0	<PQL	-	-	0 above 900 µg/L
TRH >C34-C40 (F4)	3	0	<PQL	-	-	0 above 900 µg/L
Benzene	3	0	<PQL	0 above 950 µg/L	0 above 5000 µg/L	0 above 1 µg/L
Toluene	3	0	<PQL	-	NL	0 above 800 µg/L
Ethyl benzene	3	0	<PQL	-	NL	0 above 300 µg/L
Xylene	3	0	<PQL	0 above 200 µg/L	NL	0 above 600 µg/L
Naphthalene	3	2	0.08	0 above 16 µg/L	NL	-
Benzo(a)pyrene	3	0	<PQL	-	-	-
Anthracene	3	0	<PQL	0 above 0.01 µg/L	-	-
Fluoranthene	3	0	<PQL	0 above 1 µg/L	-	-
Phenanthrene	3	0	<PQL	0 above 0.6 µg/L	-	-
Arsenic	3	3	2	0 above 13 µg/L	-	0 above 10 µg/L
Cadmium	3	1	**0.7**	**1 above 0.2 µg/L**	-	0 above 2 µg/L
Chromium	3	0	<PQL	0 above 0.2 µg/L	-	0 above 50 µg/L

Analyte	n	Detections	Maximum	n > ANZG (2018)	n > HSL D (<2-4 mbgl)	n > DWG (ADWG 2011, WHO 2008, WHO 2011)
Copper	3	0	<PQL	0 above 1.4 µg/L	-	0 above 2000 µg/L
Lead	3	0	<PQL	0 above 3.4 µg/L	-	0 above 10 µg/L
Mercury	3	2	0.06	0 above 0.06 µg/L	-	0 above 1 µg/L
Nickel	3	3	**59**	**1 above 11 µg/L**	-	**1 above 20 µg/L**
Zinc	3	3	**44**	**2 above 8 µg/L**	-	0 above 3000 µg/L
VOCs	3	0	<PQL	-	-	-

n number of samples

- No criteria available/used

NL Non-limiting

<PQL Less than the practical quantitation limit

*Note: The numbers presented in the above table have been complied and transcribed manually from data tabulated by the consultants and thus some errors may be present. Any such errors are not considered by the auditor to be significant in the overall context and amount of data reviewed and conclusions drawn regarding the site during the audit.

The groundwater is characterised by low level detections of metals including arsenic, cadmium, mercury, nickel and zinc. Cadmium and zinc reported above the ecological criteria, and nickel reported above the ecological and drinking water guidelines. Levels of metals are generally consistent in all groundwater wells at the site, indicating these concentrations are likely representative of background concentrations. Two samples located down-gradient had low level detections of naphthalene but did not exceed any criteria. The remaining analytes were reported below detection.

No hydrocarbon odours, oil sheen or phase separated hydrocarbons were observed. This is consistent with site history and soil results indicating no widespread contamination at the site. Any potential impacts from offsite sources do not appear to have migrated onto the site through groundwater.

In the auditor's opinion, groundwater has been adequately characterised. The auditor is satisfied that no further investigations are needed.

10.0 Conclusions and Recommendations

Douglas Partners considers that the site is "*suitable for the proposed development*". Based on the information presented in Douglas Partners reports 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, the auditor concludes that the site is suitable for the purposes of a "*a railway track, embankments/ noise barriers, a stabling yard and maintenance facility, station and passive open space adjacent to the rail corridor*".

11.0 Other Relevant Information

This audit was conducted on the behalf of CPBUI JV for the purpose of assessing whether the land is suitable for the proposed commercial/industrial uses i.e. a “Site Audit” as defined in Section 4 (definition of a ‘site audit’ (b)(iii)).

This summary report may not be suitable for other uses. Douglas Partners included limitations in their report. 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.

In drawing conclusions, the auditor used reasonable care to avoid reliance upon data and information that may be inaccurate, however a degree of uncertainty is inherent in all subsurface investigations and there remains the possibility that variations may occur between sample locations. The audit and this report are limited by and rely upon the scope of the review, and the information provided by the Client and their consultants and representatives through documents provided to the auditor. The audit is based on a review of the subsurface condition of the site at the time of assessment, as described in the assessment reports attached to the audit report and site inspections conducted by the auditor and their representatives. The auditor’s conclusions presented in this report are therefore based on the information made available to them and arising from their own observations conducted during the audit. 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.

In reaching their conclusions about the site, the Client and NSW EPA may use this audit report and site audit statement. The scope of work performed as part of the audit process may not be appropriate to satisfy the needs of any other person. Any other person’s use of, or reliance on, the audit document and report, or the findings, conclusions, recommendations or any other material presented or made available to them, is at that person’s sole risk.

Appendix A: Attachments

EASTING 291949.67
NORTHING 6258647.0

EASTING 291959.14
NORTHING 6258645.72

EASTING 291942.38
NORTHING 6258601.19

EASTING 291887.34
NORTHING 6258598.68

EASTING 291882.52
NORTHING 6258563.24

EASTING 291860.42
NORTHING 625866.24

EASTING 291857.869
NORTHING 6258537.782

EASTING 291853.986
NORTHING 6258534.416

EASTING 291851.930
NORTHING 6258504.814

EASTING 291949.794
NORTHING 6258584.291

EASTING 291931.79
NORTHING 6258550.46

EASTING 291926.33
NORTHING 6258529.70

EASTING 291935.69
NORTHING 6258491.65

AEC30TP21
AEC30TP20
AEC30TP17
AEC30BH01
AEC30TP16
AEC30TP12
AEC30TP13
AEC30TP14
AEC30TP10
AEC30TP11
AEC30TP08
AEC30TP09
AEC30TP07
AEC30TP04
AEC30TP06
AEC30TP05
AEC30TP01
AEC30TP02
AEC30TP03
AEC30BH03
AEC30BH02

STOCKPILE AEC30SP2
STOCKPILE AEC30SP1

SP1
SP1A
SP1B
SP2

AEC 30

AEC 31a

0 10 20 30 40 50 m

LOCALITY PLAN

SITE

Shed for vehicle storage

PATONS LANE

LUDDENHAM RD

Legend

- SCAW Alignment
- EIS AEC: High Risk
- EIS AEC: Medium
- Site Boundary
- Approximate Location of Stockpiles
- Circular depression
- Former Shed Footprint
- Some Scattered Building Rubble
- Borehole / Groundwater Well Location
- Test Pit Location

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	CPBUI JV		
OFFICE:	Sydney	DRAWN BY:	MG/MN
SCALE:	1:900 @ A3	DATE:	17/05/2023

TITLE: **AEC30 Test Location Plan**
Sydney Metro Western Sydney Airport - SCAW
22-26 Landsdowne Road, Orchard Hills

N

PROJECT No:	204814.01
DRAWING No:	AEC30-01
REVISION:	0

Appendix B: EPA Guidelines

Guidelines made or approved by the EPA under section 105 of the *Contaminated Land Management Act 1997*

(as of: 12 August 2022)

Section 105 of the CLM Act allows the EPA to make or approve guidelines for purposes connected with the objects of the Act. The EPA must consider these guidelines whenever they are relevant. Other people must also consider the guidelines, namely, accredited site auditors when conducting a site audit; contaminated land consultants when investigating, remediating, validating and reporting on contaminated sites; and those responsible for land contamination with a duty to notify the EPA.

A current list of guidelines made or approved by the EPA under the CLM Act appears below.

Guidelines made by the EPA

- Assessment and management of hazardous ground gases: Contaminated land guidelines (PDF 4MB)
- Guidelines for the vertical mixing of soil on former broad-acre agricultural land (PDF 148KB)
- Contaminated land sampling design guidelines part 1 – application (PDF 3.3MB)
- Contaminated land sampling design guidelines part 2 – interpretation (PDF 1MB)
- Guidelines for assessing banana plantation sites (PDF 586KB)
- Consultants reporting on contaminated land: Contaminated land guidelines (PDF 1MB)
- Guidelines for assessing former orchards and market gardens (PDF 172KB)
- Guidelines for the NSW Site Auditor Scheme, 3rd edition (PDF 999KB)
- Guidelines for the assessment and management of groundwater contamination (PDF 604KB)
- Guidelines on the duty to report contamination under the Contaminated Land Management Act 1997 (PDF 412KB)

Guidelines that refer to the:

- Australian Water Quality Guidelines for Fresh and Marine Waters (ANZECC, October 2000), are replaced as of 29 August 2018 by the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, August 2018), with the exception of the water quality for primary industries component, which still refer to the ANZECC & ARMCANZ (2000) guidelines
- National Environment Protection (Assessment of Site Contamination) Measure 1999 are replaced as of 16 May 2013 by the National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013).

Guidelines approved by the EPA

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality, ANZG (August 2018)
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Volume 3, Primary Industries - Rationale and Background Information (ANZECC & ARMCANZ (October 2000)
- Composite sampling, Lock, W. H., National Environmental Health Forum Monographs, Soil Series No.3, 1996, SA Health Commission, Adelaide. Email enHealth.Secretariat@health.gov.au for a copy of this publication.
- Environmental health risk assessment: Guidelines for assessing human health risks from environmental hazards, Department of Health and Ageing and EnHealth Council, Commonwealth of Australia (June 2012)
- National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)* (ASC NEPM)
- Guidelines for the Assessment and Clean Up of Cattle Tick Dip Sites for Residential Purposes, NSW Agriculture and CMPS&F Environmental (February 1996)
- Australian Drinking Water Guidelines, NHMRC and Natural Resource Management Ministerial Council of Australia and New Zealand (2011)

*The ASC NEPM was amended on 16 May 2013.

Appendix C: Interim Audit Advice

Senversa Pty Ltd
Level 24, 1 Market St, Sydney 2000
ABN 89 132 231 380 www.senversa.com.au

1 September 2022

[redacted]
CPBUI JV
Level 5, 60 Miller Street
North Sydney NSW 2060

Dear [redacted]

Re: Interim Audit Advice No. 1: AEC30, 22-26 Lansdowne Road, Orchard Hills

Review of Sampling and Analysis Quality Plan

1. Introduction and Background

[redacted] (the Site Auditor) of Senversa Pty Ltd (Senversa) has been engaged by CPB Contractors Pty Ltd and United Infrastructure Pty Ltd (CPBUI JV) on behalf of Sydney Metro as a NSW Environment Protection Authority (EPA) Accredited Contaminated Sites Auditor for the proposed development of the Sydney Metro to Western Sydney Airport line. The site is part of the proposed Sydney Metro line and is located at 22-26 Lansdowne Road, Orchard Hills (hereafter referred to as 'the site').

The site is currently occupied by small lots potentially used for hobby farms or rural purposes and part of a small commercial business. The site is potentially impacted from a possible workshop, minor waste storage/ on-site disposal and use or storage of hazardous materials. It is understood that the development of the site will likely include stripping of the topsoil and placement of soil to raise ground level up to approximately 6 m above current levels for the rail lines. Areas alongside the proposed rail lines will be used by contractors for staging and maintenance for the Metro and then passive open space. Douglas Partners Pty Ltd (Douglas Partners), engaged as the environmental consultant to assess the contamination status of the site, produced the following report, which was forwarded to the Site Auditor for review:

- 'Sampling and Analysis Quality Plan (SAQP), Surface & Civil Alignment Works (SCAW) Package for Sydney Metro – Western Sydney Airport (SMWSA), Area of Environmental Concern (AEC) 30, 22-26 Lansdowne Road, Orchard Hills' dated 19 August 2022 by Douglas Partners (DRAFT).

This interim audit advice details the review of the SAQP for a detailed site investigation in relation to the contamination status of the site.

2. Review Comments

The Site Auditor has undertaken a review of the SAQP against the requirements specified in the *Guidelines for the NSW Site Auditor Scheme (3rd edition)* (NSW EPA, 2017) and the *Guidelines for Consultants Reporting on Contaminated Sites* (NSW Office of Environment and Heritage, 2011). Review comments are detailed herein.

- Please clarify whether the small commercial business comprises the potential workshop/laydown and stockpile areas noted in Section 4 (Table 2) and that this corresponds to the demolition waste/former shed and stockpile area shown in Drawing 2. Please check that labels in Drawing 2 can clearly be referenced back to Section 4.
- Section 1. Please consider the NSW EPA Sampling Design Guidelines (2022), implement appropriate and compliant densities where feasible or provide justification for reduced sampling densities i.e., consistently low results and consistent with the known site history.
- Section 6. Please confirm review of Appendix B in the NEMP regarding the potential for PFAS contamination for the historical and current land use.
- Section 7. Site Assessment Criteria in Appendix B over a wide range of analytes, depths and two separate land uses. The actual criteria to be applied at the site should be outlined in Section 7 if auditor review is required.
- Section 9. An unnamed drainage channel appears to run through the southern portion of the site into the unnamed creek south of the site (from Drawing 1 in Appendix A), however no sampling of surface water or sediment has been allowed for (if present).
- Appendix A.
  - Please add label for AEC to the south of the site.
  - Add a line around the site boundary (and add key to legend) as the shading is somewhat unclear.
  - Please include outline showing extent of targeted areas i.e. former shed, circular depression etc.

It is noted that the SAQP states that ‘soil to raise ground levels is likely to be sourced from off-site’. The sampling regime to be applied are not specified in the SAQP and cannot be commented upon by the auditor. It is understood that material reuse criteria in the SAQP was derived from the Human Health and Ecological Risk Assessment (HHERA) prepared to facilitate the re-use of spoil along the Sydney Metro alignment. At this stage we cannot comment on the material reuse criteria stated in the SAQP until approval to the HHERA has been received (if required).

3. Close

We look forward to receiving a response to the comments above and trust this meets your current requirements. Should you have any queries or require further information, please do not hesitate to contact the undersigned.

Yours sincerely,
On behalf of **Senversa Pty Ltd**

[redacted]

[redacted]
NSW EPA Accredited Site Auditor (0803)

MC/MP

Technical Limitations and Uncertainty – *This Interim Advice is not a Site Audit Report or a Site Audit Statement, as defined in the Contaminated Land Management Act 1997, but forms part of the Site Audit process*. It is intended that a Site Audit Statement and report will be issued at the completion of the site audit.
Consistent with NSW EPA requirements for staged "sign-off" of sites that are the subject of progressive assessment, remediation and validation, the Auditor is required to advise that:

- *This site audit advice does not constitute a site audit report or statement.*
- *This letter is considered by the Auditor to be consistent with NSW EPA guidelines and policies.*
- *This letter will be documented in the final Site Audit Statement and associated documentation.*
- *At the completion of the site audit, a Site Audit Statement will be prepared, for the consent agency to include the Site's property information, held by the local council.*

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Senversa Pty Ltd
Level 24, 1 Market St, Sydney 2000
ABN 89 132 231 380 www.senversa.com.au

11 May 2023

[redacted]
CPBUI JV
Level 5, 60 Miller Street
North Sydney NSW 2060

Dear [redacted]

Re: Interim Audit Advice No. 2: AEC30, 22-26 Lansdowne Road, Orchard Hills

Review of Detailed Site Investigation

1. Introduction and Background

[redacted] (the Site Auditor) of Senversa Pty Ltd (Senversa) has been engaged by CPB Contractors Pty Ltd and United Infrastructure Pty Ltd (CPBUI JV) on behalf of Sydney Metro as a NSW Environment Protection Authority (EPA) Accredited Contaminated Sites Auditor for the proposed development of the Sydney Metro to Western Sydney Airport line. The site is part of the proposed Sydney Metro line and is located at 22-26 Lansdowne Road, Orchard Hills (hereafter referred to as 'the site').

The site is currently occupied by small lots potentially used for hobby farms or rural purposes and part of a small commercial business. The site is potentially impacted from a possible workshop, minor waste storage / on-site disposal and use or storage of hazardous materials. It is understood that the development of the site will likely include stripping of the topsoil and placement of soil to raise ground level up to approximately 6 m above current levels for the rail lines. Areas alongside the proposed rail lines will be used by contractors for staging and maintenance for the Metro and then passive open space. Douglas Partners Pty Ltd (Douglas Partners), engaged as the environmental consultant to assess the contamination status of the site, produced the following reports, which were forwarded to the Site Auditor for review:

- 'Sampling and Analysis Quality Plan (SAQP), Surface & Civil Alignment Works (SCAW) Package for Sydney Metro – Western Sydney Airport (SMWSA), Area of Environmental Concern (AEC) 30, 22-26 Lansdowne Road, Orchard Hills' dated 19 August 2022 by Douglas Partners (DRAFT).
- 'Report on Detailed Site Investigation (Contamination), Surface & Civil Alignment Works (SCAW) Package for Sydney Metro – Western Sydney Airport (SWMSA) Area of Environmental Concern (AEC) 30, 22-26 Lansdowne Road, Orchard Hills' dated 16 March 2023 by Douglas Partners (DRAFT).

This interim audit advice (IAA) details the review of a detailed site investigation in relation to the contamination status of the site. IAA No.1 issued 2 May 2023 was previously prepared following review of the SAQP.

2. Review Comments

The Site Auditor has undertaken a review of the DSI against the requirements specified in the *Guidelines for the NSW Site Auditor Scheme (3rd edition)* (NSW EPA, 2017) and the *Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA, 2020). Review comments are detailed herein.

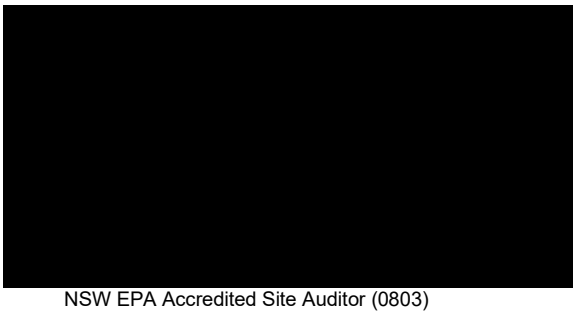
- Section 2. Confirm the site owner.
- Section 4.
  - Discuss surface water flow across the site and likely flow offsite.
  - Please confirm if the drainage channel through the southern portion of the site was present during the walkover (as shown in Drawing 1 of the SAQP), and if any sampling locations targeted this channel.
  - Discuss in detail the current site condition, including former shed, potential workshop, circular depression, and laydown and demolition waste storage areas, and confirm potential sources of contamination within the site or off-site at AEC 30.
- Section 6.3
  - Stockpile samples referred to as AEC30SP1A and AEC30SP2A here, but in the analytical tables they are AEC30SP1A and AEC30SP1B. Please confirm sample IDs of the stockpile samples and update this section or the analytical tables in Appendix I.
- Section 9
  - Please close out any potential impacts within the drainage channel.
  - Provide comment on very different depth to groundwater between well development and sampling events.
- Section 9.2
  - Please include numbers and depths of samples taken from the stockpiles.
  - Confirm no potential asbestos containing material was observed.
  - If known, confirm the likely sources of the stockpiles.
- Appendix A
  - Provide a survey plan of the site boundary.
  - Include an outline showing the extent of targeted areas i.e., the former shed, potential workshop, circular depression, and laydown and demolition waste areas.
  - Please also include outline of the drainage channel and the unnamed creek.
  - Include locations of samples taken from the stockpiles.
  - Remove investigation locations not included in this site investigation (located at AEC 31a).
- Appendix I
  - Groundwater results for AEC30BH01 on page 2 are partially hidden, please update.

It is noted that the DSI states that ‘soil to raise ground levels is likely to be sourced from off-site’. The sampling regime to be applied are not specified in the SAQP and cannot be commented upon by the auditor. It is understood that material reuse criteria in the SAQP was derived from the Human Health and Ecological Risk Assessment (HHERA) prepared to facilitate the re-use of spoil along the Sydney Metro alignment. At this stage we cannot comment on the material reuse criteria stated in the SAQP until approval to the HHERA has been received (if required).

3. Close

We look forward to receiving a response to the comments above and trust this meets your current requirements. Should you have any queries or require further information, please do not hesitate to contact the undersigned.

Yours sincerely,



NSW EPA Accredited Site Auditor (0803)

KR/MP

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Consistent with NSW EPA requirements for staged "sign-off" of sites that are the subject of progressive assessment, remediation and validation, the Auditor is required to advise that:

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- *This letter is considered by the Auditor to be consistent with NSW EPA guidelines and policies.*
- *This letter will be documented in the final Site Audit Statement and associated documentation.*
- *At the completion of the site audit, a Site Audit Statement will be prepared, for the consent agency to include the Site's property information, held by the local council.*

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Senversa Pty Ltd
Level 24, 1 Market St, Sydney 2000
ABN 89 132 231 380 www.senversa.com.au

5 June 2023

[redacted]
CPBUI JV
Level 5, 60 Miller Street
North Sydney NSW 2060

Dear [redacted]

Re: Interim Audit Advice No. 3: AEC30, 22-26 Lansdowne Road, Orchard Hills

Review of updated Detailed Site Investigation

1. Introduction and Background

[redacted] (the Site Auditor) of Senversa Pty Ltd (Senversa) has been engaged by CPB Contractors Pty Ltd and United Infrastructure Pty Ltd (CPBUI JV) on behalf of Sydney Metro as a NSW Environment Protection Authority (EPA) Accredited Contaminated Sites Auditor for the proposed development of the Sydney Metro to Western Sydney Airport line. The site is part of the proposed Sydney Metro line and is located at 22-26 Lansdowne Road, Orchard Hills (hereafter referred to as 'the site').

The site is currently occupied by small lots potentially used for hobby farms or rural purposes and part of a small commercial business. The site is potentially impacted from a possible workshop, minor waste storage / on-site disposal and use or storage of hazardous materials. It is understood that the development of the site will likely include stripping of the topsoil and placement of soil to raise ground level up to approximately 6 m above current levels for the rail lines. Areas alongside the proposed rail lines will be used by contractors for staging and maintenance for the Metro and then passive open space. Douglas Partners Pty Ltd (Douglas Partners), engaged as the environmental consultant to assess the contamination status of the site, produced the following reports, which were forwarded to the Site Auditor for review:

- 'Sampling and Analysis Quality Plan (SAQP), Surface & Civil Alignment Works (SCAW) Package for Sydney Metro – Western Sydney Airport (SMWSA), Area of Environmental Concern (AEC) 30, 22-26 Lansdowne Road, Orchard Hills' dated 19 August 2022 by Douglas Partners (DRAFT).
- 'Report on Detailed Site Investigation (Contamination), Surface & Civil Alignment Works (SCAW) Package for Sydney Metro – Western Sydney Airport (SWMSA) Area of Environmental Concern (AEC) 30, 22-26 Lansdowne Road, Orchard Hills' dated 24 May 2023 by Douglas Partners.

The SAQP was previously reviewed, and comments provided by the auditor in interim audit advice (IAA) No.1 dated 1 September 2022. A previous version of the DSI was also reviewed and comments provided by the auditor in IAA No. 2 dated 11 May 2023.

This interim audit advice (IAA) details the review of the updated detailed site investigation in relation to the contamination status of the site.

2. Review Comments

The Site Auditor has undertaken a review of the DSI against the requirements specified in the *Guidelines for the NSW Site Auditor Scheme (3rd edition)* (NSW EPA, 2017) and the *Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA, 2020).

The auditor considers that the DSI addresses the comments provided in IAA No.2 and the DSI can be finalised.

3. Close

We look forward to receiving a response to the comments above and trust this meets your current requirements. Should you have any queries or require further information, please do not hesitate to contact the undersigned.

Yours sincerely,
On behalf of **Senversa Pty Ltd**

[redacted]

NSW EPA Accredited Site Auditor (0803)

KR/MP

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Consistent with NSW EPA requirements for staged "sign-off" of sites that are the subject of progressive assessment, remediation and validation, the Auditor is required to advise that:

- *This site audit advice does not constitute a site audit report or statement.*
- *This letter is considered by the Auditor to be consistent with NSW EPA guidelines and policies.*
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Senversa Pty Ltd

ABN 89 132 231 380
www.senversa.com.au
enquiries@senversa.com.au
LinkedIn: Senversa
Facebook: Senversa