

AEC 35 North-West: Luddenham Road, Orchard Hills

Audit Number: MP181_5C

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Site Audit Report





Document Information

Site Audit Report

AEC 35 North-West: Luddenham Road, Orchard Hills

Audit Number: MP181_5C

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Appendices

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List of Acronyms

Acronym	Definition		
Measures			
%	per cent		
ha	Hectare		
km	Kilometres		
m	Metre		
mbgl	Metres below ground level		
mg/kg	Milligrams per Kilogram		
ACM	Asbestos Containing Material		
ADE	ADE Consulting Group		
AWC	Areas of Environmental Concern		
ANZECC	Australian and New Zealand Environment and Conservation Council		
ANZG	Australian and New Zealand Guidelines		
ВТЕХ	Benzene, Toluene, Ethylbenzene, Xylenes & Naphthalene		
CLM Act	NSW Contaminated Land Management Act 1997		
Council	Penrith City Council		
CPBUI JV	CPB Contractors Pty Ltd and United Infrastructure Pty Ltd		
CSM	Conceptual Site Model		
DP	Deposited Plan		
DSI	Detailed Site Investigation		
EIS	Environmental Impact Statement		
EPA	Environment Protection Authority (NSW)		
ESL	Ecological Screening Levels		
HIL	Health Investigation Levels		
HSL	Health Screening Level		
IAA	Interim Audit Advice		
Mercury	Inorganic mercury unless noted otherwise		
Metals	As: Arsenic, Cd: Cadmium, Cr: Chromium, Cu: Copper, Ni: Nickel, Pb: Lead, Zn: Zinc, Hg: Mercury		
ML	Management Limits		

Acronym	Definition
NAD	No Asbestos Detected
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
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PFAS	Perfluoroalkyl and Polyfluoroalkyl Substances
PQL	Practical Quantitation Limit
RAP	Remediation Action Plan
RRE	Resource Recovery Exemption
RRO	Resource Recovery Order
SAR	Site Audit Report
SAS	Site Audit Statement
SCAW	Surface & Civil Alignment Works
Sydney Environmental	Sydney Environmental Group Pty Ltd
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 a portion of the site at Luddenham Road, Orchard Hills NSW (known as 'AEC 35 north-west') ('the site'). The site is presented as the remedial area on **Attachment 1, Appendix A**.

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. This audit relates only to AEC 35 north-west with remaining AECs to be considered in separate audit reports.

A Section B Site Audit Statement (MP181_5) was issued for the larger AEC 35, inclusive of AEC 35 south-east and AEC 35 north-west. Remediation was required within AEC 35 north-west and a Remediation Action Plan (RAP) was prepared. The RAP was implemented and now this audit refers to AEC 35 north-west following remediation and validation. A Section A SAS and SAR has previously been issued for AEC 35 south-east (MP181_5B).

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).

Development consent (SSI 10051, issued on 23 July 2021) was granted by the Minister for Planning and Public Spaces for construction and operation of a railway track to the Western Sydney Airport. The consent was subject to a number of requirements of which condition (E96) relates to contamination and requires a Section A Site Audit Statement (SAS) as follows:

E96 A Section A1 or Section A2 Site Audit Statement (accompanied by an Environmental Management Plan) and its accompanying Site Audit Report, which state that the contaminated land disturbed by the work has been made suitable for the intended land use, must be submitted to the Planning Secretary and the Relevant Council(s) after remediation and before the commencement of operation of the CSSI.

As remediation was required for the site, this audit is statutory.

Details of the audit are:

Requested by: on behalf of CPB Contractors Pty Ltd and United

Infrastructure Pty Ltd (CPBUI JV)

Request/Commencement Date: 7 June 2022

Auditor:

Accreditation No.: 0803



The scope of the audit included:

- Review of the following report:
 - 'Site Validation Report, PS105, Luddenham Road, Orchard Hills NSW' dated 26 February 2025 by Sydney Environmental Pty Ltd, received on 28 February 2025 (SVR).
- A site visit by the auditor on 11 August 2022, 21 June 2023 and 8 November 2023.
- Discussions with CPBUI JV and with Douglas Partners who undertook the investigation.
- The previous audits (SAS MP181 5 and MP181 5B) included review of the following reports:
 - 'Environmental Impact Statement' dated October 2020 by Sydney Metro (EIS).
 - 'Sampling and Analysis Quality Plan (SAQP), Surface & Civil Alignment Works (SCAW)
 Package for Sydney Metro Western Sydney Airport (SMWSA), Area of Environmental
 Concern (AEC) 35, 43A Luddenham Road, Orchard Hills' dated 3 August 2022 by Douglas
 Partners.
 - 'Report on Detailed Site Investigation (Contamination) (DSI), Surface & Civil Alignment Works (SCAW) Package for Sydney Metro – Western Sydney Airport (SMWSA), Area of Environmental Concern (AEC) 35, 43A Luddenham Road, Orchard Hills' dated 12 December 2022 by Douglas Partners (DSI).
 - 'Remediation Action Plan, Surface & Civil Alignment Works (SCAW) Package for Sydney Metro – Western Sydney Airport (SMWSA), Area of Environmental Concern (AEC) 35, 43A Luddenham Road, Orchard Hills' dated 16 March 2023 by Douglas Partners (RAP).

The SVR details the remediation and validation activities undertaken for AECs 35 (the site), 36 and 43, as well as Permanent Stockpile (PS) 105. The AECs have identified asbestos contaminated soil that requires remediation by removal and cap and contain. PS105 is a large mound constructed within the SCAW corridor to encapsulate asbestos contaminated material sourced from these AECs, as well as any uncontaminated surplus material deemed geotechnically unsuitable from within the alignment. This Site Audit Report refers to remediation and validation for AEC 35 only, separate Section A Site Audit Statements and Site Audit Reports will be issued for AECs 36 and 43, as well as PS105.

Several Interim Audit Advice (IAA) have been issued for the site providing comments on the validation report and are 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: Luddenham Road, Orchard Hills NSW 2748

Identifier: Part Lot 10 Deposited Plan (DP) 12580205

Local Government: Penrith City Council

Site Area: Approximately 0.41 ha

The boundaries of the site are not well defined by streets or adjoining properties. A survey plan of the site (shown as the extent of remedial area) has been provided (**Attachment 2**, **Appendix A**).

2.2 Zoning

The current zoning of the site as provided by Douglas Partners is RU2: Rural Landscape.

2.3 Adjacent Uses

The site is located within an area of rural grazing land. Patons Lane Landfill is located to the southwest and cross gradient of the site.

Blaxland Creek is approximately 340 m northwest of the site. A number of dams are located near to the site, with the closest located immediately to the south. Douglas Partners reported that surface from the site is likely to flow to the west and northwest towards Blaxland Creek.

2.4 Site Condition

Douglas Partners noted the following at the site during the DSI:

- The site is used for grazing purposes.
- Slopes are generally to the north and west.
- Stockpiles of soil and scattered waste material were noted within the west part of the site.

The following was noted by the auditor during the site visit on 11 August 2022:

- The site is rural land used for grazing purposes.
- Stockpiles of soil and piles of waste material were visible in the west part of the site.
- The waste material included pieces of metal, timber, white goods, wire and tyres.

The following was noted by the auditor during the site visit on 21 June 2023:

- The former waste burial put had been excavated and all material removed.
- The residual material appeared to be natural clay.

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

The site had been levelled with placed imported sandstone tunnel spoil.



2.5 Proposed Development

It is understood that the site is to be redeveloped by CPBUI JV as a part of a stabling yard associated with the railway corridor for the Sydney Metro – Western Sydney Airport line. The Sydney Metro – Western Sydney Airport line development includes approximately 10km 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 site history from the EIS based on aerial photographs, site photographs, NSW EPA records. The site has been rural land for pastoral use since at least 1955. The EIS noted there appeared to be potential farm tip waste burial area within the site.

The auditor considered (SAS MP181_5) that the site history provided an adequate indication of past activities and that there is no evidence of past uses that have significant potential to contaminate the site



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 Potentia		Potential Contaminants
Entire site	Potential farm tip waste burial area	Metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethyl benzene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), organophosphate pesticides (OPPs), polychlorinated biphenyls (PCBs), phenols, asbestos and volatile organic compounds (VOCs).

The auditor considered (SAS MP181_5) that the analyte list used by Douglas Partners adequately reflected 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 - 0.2 (one location to	Fill (silty clay, sandy clay, clayey sand and silty sand).
depths of 4 mbgl)	Trace pieces of glass were identified at two locations.
	A waste burial pit was identified within the western part of the site during a pervious investigation by Golder/Douglas Partners. The burial pit included metal cans, metal wire, fishing wire, plastic jerry can, glass fragments and white fibres.
0.2 – 5	Clay and silty clay.
5 to depth	Siltstone.

Mbgl - metres below ground level

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

The auditor considered (SAS MP181_5) 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 is approximately 0.5 mbgl to 2 mbgl. Groundwater is considered likely to flow to the northwest. There are no registered bores within a 500 m radius of the site.

The auditor considered (SAS MP181_5) that the hydrogeology has been adequately characterised for the purposes of the audit.



6.0 Evaluation of Quality Assurance and Quality Control

The auditor assessed (SAS MP181_5) the overall quality of the data by review of the information presented in the referenced reports, supplemented by field observations.

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

- The data is likely to be representative of the overall conditions of the site.
- The data is complete.
- The primary laboratory provided sufficient information to conclude that data is of sufficient precision.
- The data is likely to be accurate however no decontamination was undertaken in between hand auger soil sampling events and a rinsate sample was not collected for the hand auger soil sampling. This may have resulted in unknown cross-contamination. Given soil sampling from the excavator bucket returns and the hand auger reported similar analytical results and that the soil results do not indicate widespread contamination this does not appear to have affected the overall accuracy of the data.



7.0 Environmental Quality Criteria

The auditor has assessed the validation 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). Based on a proposed land use of a stabling yard as part of a rail corridor, the criteria for 'commercial/industrial' land 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:
 - 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.
 - Asbestos Health Screening Levels (HSL D).
- Ecological Assessment
 - Ecological Screening Levels (ESL Commercial/Industrial) assuming coarse/fine soil.
- 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).



8.0 Evaluation of Soil Analytical Results

Soil samples were analysed for a variety of contaminants including petroleum hydrocarbons, PAHs, asbestos, OCPs, OPPs, PCBs and heavy metals. The analytical results are summarised in SAS MP181_5.

The auditor concluded (SAS MP181_5) that soil at AEC 35 has been adequately characterised and the soil analytical results are consistent with the site history and field observations. A waste burial pit had been identified within AEC 35 north-west which required remediation, refer to Section 11.0.



9.0 Evaluation of Groundwater Analytical Results

Groundwater samples were collected from two wells on-site. These were submitted for metals, TRH, BTEX, PAHs, OCPs, OPPs, PCBs, phenols and VOCs. The analytical results are provided in SAS MP 181 5.

The auditor concluded (MP181_5) that groundwater had been adequately characterised and the results are consistent with the site history, field observations and soil results indicating previous rural uses with some localised waste dumping. TRH impacts to soil associated with the waste pit appear to have impacted the groundwater locally. These impacts to groundwater are addressed by remedial works, as discussed in Section 11.0.



10.0 Evaluation of Conceptual Site Model

A conceptual site model (CSM) is a representation of the source, pathway and receptor linkages at a site. Douglas Partners developed a CSM and used it iteratively throughout the site assessment to inform decisions around investigation and remediation. The CSM has been updated following remediation and validation by Sydney Environmental. The updated CSM is summarised in **Table 10.1** below, alongside the auditors review to conclude on site suitability.

Table 10.1: Review of the CSM

Element of CSM	Consultant (Douglas Partners and Sydney Environmental)	Auditor Opinion	
Contaminant source and mechanism	Fill with buried waste material. Contaminants of concern include petroleum hydrocarbons and asbestos.	Appropriate. Following remediation, this source is no longer present.	
Affected media	Prior to remediation, affected media included soil and groundwater.	Appropriate. Following remediation, the affected soil is no longer present. Removing the source means groundwater will no longer be impacted.	
Receptor identification	Site users. Surface water bodies. Groundwater. Terrestrial ecosystems. In ground structures.	Appropriate.	
Exposure pathways	Douglas Partners considered the exposure pathways were ingestion, inhalation of vapours, inhalation of dust, direct contact, surface water runoff and leaching of contaminants into groundwater. Following remediation, Sydney Environmental consider that no complete pathways are present.	Appropriate.	



11.0 Evaluation of Remediation

11.1 Remediation Required

Based on the investigations completed by Douglas Partners, the contaminants of concern that have been targeted by a RAP, remediation and validation have been summarised in **Table 11.1**.

The auditor has assessed the RAP by comparison with the checklist included in NSW EPA (2020) *Consultants Reporting on Contaminated Land Contaminated Land Guidelines*. The RAP was found to address the required information.

Remediation was undertaken by Spot-On Asbestos Removal Pty Ltd with environmental consulting provided by Sydney Environmental between 16 June 2023 and 19 June 2023.

Table 11.1: Remediation Undertaken

Description	Extent of Remediation	Remediation Undertaken
Waste burial pit.	Within the central area of AEC	Excavation and off-site removal.
Elevated concentrations of petroleum hydrocarbons and potential for BTEX,	35 'north-west'. The extent of remediation was confirmed during excavation.	The excavated material up to approximately 1 m was described by Sydney Environmental as 'heavy impacted' and stockpiled off-site approximately 500 m to the northwest for waste classification and off-site disposal.
metals, PAHs, OCP/OPP, PCB and asbestos.		The material located beneath this was described by Sydney Environmental as 'lightly impacted' and subsequently excavated and stockpiled off-site approximately 500 m to the northwest for further assessment for on-site reuse/containment.
		Refer to Section \square for further information on validation.
Waste on surface.	Lateral: western part of the site.	Off-site disposal.
	Vertical: ground surface.	This included collection of waste items scattered across the western part of the site and disposal to an appropriately licenced landfill.
Cap and contain of asbestos impacted soil within PS105.	PS105 (off-site to AEC35).	PS105 is a permanent stockpile constructed within the SCAW corridor to encapsulate asbestos contaminated material and geotechnically unsuitable material sourced from SCAW. An EPL exists for the project (EPL No. 21695) which allows the movement of material within the SCAW footprint per condition O5.6 of the EPL:
		O5.6 Excavated material suitable for re-use within the premises may be transported to another part of the premises or from the Sydney Metro Western Sydney Airport Project including on-airport sites, to the premises by road.
		The material sourced from AEC35 that is deemed to be suitable has been placed within PS105. This will be discussed in the site audit report for PS105 and is not discussed in this site audit report.

In the auditor's opinion, remediation works undertaken were appropriate and in accordance with the RAP. Validation results and testing are discussed in **Section 11.2.2.**

The sequence of remedial works was as follows:

- Excavation to approximately 1 mbgl to remove heavily impacted material. This material was stockpiled separately to the rest of the material for off-site disposal.
- The excavation continued an additional 0.5 m and the material was removed and stockpiled for further assessment for placement within PS105.



11.2 Validation Activities

Validation activities are summarised in **Table 11.2.**

Table 11.2: Validation Activities

Works Undertaken **Element** Verification Waste burial Excavation and removal of impacted fill Excavation material. The excavation was pit Excavation of the waste material including 0.1 m into natural approximately 20 m x 5 m x 1.5 m in size. material. Visual inspection by Sydney Environmental of the The 'heavily impacted' material between residual natural soil within the excavation. The material was the surface and approximately 1.0 mbgl described as clay with no evidence of residual contamination was stockpiled for further waste including foreign materials, asbestos or hydrocarbon staining classification assessment for off-site observed. Photographs of the excavation were provided. disposal to a licensed receiving facility. In accordance with the RAP, 8 validation samples were The 'lightly impacted' material located collected from the base of the excavation and 10 validation samples were collected from the walls and analysed for between approximately 1.0 mbgl and quantitative asbestos and TRH laboratory analysis. Validation 1.5 mbgl was transported to a temporary stockpiling area approximately 500 m to sample results are discussed in Section 11.2.2. the northwest. The material was put in 'Heavy impacted' material disposal three stockpiles and was sampled for The material was described as silty clay with foreign materials further assessment for on-site reuse. including potential asbestos containing material (ACM) fragments, plastics, metals, concrete, bricks and tiles. The material was stockpiled on geofabric at a temporary stockpiling area located approximately 500 m to the northwest. The material was sampled for waste classification and disposed offsite to Bingo Waste Services. Refer to Section 14.2 for waste disposal details. 'Lightly impacted' material reuse The material was stockpiled on geofabric at a location not within the site but within the SCAW footprint (and covered by the EPL). The material was placed into three stockpiles of 75 m³ (SP01) and 200 m³ (SP02 and SP03) in size. The material was described as fill material comprising silty clay with sandstone, gravels, metals, plastics, glass, potential ACM fragments and organic matter. A total of 11 samples were collected across the three stockpiles between 0.0 m and 0.3 m depth to be assessed for on-site reuse for placement within PS105. The samples were analysed for metals, PAHs, petroleum hydrocarbons (BTEX and TRH), OCP, PCBs and asbestos. The results will be discussed in the SAR for the PS105 site. Waste on Lateral: western part of the site. Off-site disposal. surface This included collection of waste items scattered across the Vertical: ground surface. western part of the site and disposal to an appropriately licenced landfill

In the auditor's opinion, remediation works undertaken were appropriate and in accordance with the RAP.

11.2.1 Evaluation of Quality Assurance and Quality Control

The auditor has assessed the overall quality of the data in **Table 11.3** by review of the information presented in the validation report.



Table 11.3: QA/QC Summary

QAQC Consultant Reports Auditor Comments Sampling and Data quality indicators were predetermined by Douglas Partners Overall, the sampling and analysis **Analysis** and adopted by Sydney Environmental for the validation methodology assessment was Methodology adequate. assessment **Assessment** Validation samples: Samples were collected across the base and walls of the excavation. Density was in accordance with the RAP. The base of the excavation was described as clay with no foreign material. Individual sample descriptions were not provided; however overall soil descriptions of the base and walls of the remedial excavation were provided. Importation samples: Samples were collected from sandstone tunnel spoil and submitted for laboratory analysis. Sydney Environmental stated sample collected was via hand tools or from the middle of the excavator bucket. Disposable gloves were generally reported as being used for each sample event. No reusable equipment was reported as being sued and therefore decontamination of equipment was not required. Samples were reported to have been placed in laboratory supplied sample jars and transferred in a chilled esky or placed within zip lock plastic bags for asbestos samples. A PID was not used as evidence of hydrocarbon contamination was noted. NATA accredited laboratories Eurofins | mgt and SGS were used. Field and Lab Overall, in the context of the Quality Sample receipt notifications were not provided for two laboratory remediation and validation undertaken and field observations Assurance and batches that consisted of a triplicate sample and stockpile waste **Quality Control** provided, the field and lab quality classification samples. One sample receipt for samples analysed for petroleum hydrocarbons did not report a sample temperature. assurance and quality control was The holding times for TRH and volatile petroleum hydrocarbons adequate. were exceeded by 6 days in a secondary laboratory batch. One intra- and one interlaboratory samples collected with results acceptable. A trip spike and trip blank sample was collected and results were acceptable. Laboratory quality control sampling was conducted. Two laboratory batches reported elevated RPDs for laboratory duplicates for metals (cadmium, chromium, copper, lead, nickel and zinc), however, the RPDs passed Eurofins QC acceptance criteria. All other results were acceptable.

Overall, the auditor considers the quality assurance and quality control acceptable for the validation undertaken.

11.2.2 Evaluation of Soil Validation Analytical Results

A summary of the results from the samples collected from the residual soils within remediation excavation have been tabulated in **Table 11.4**. Validation sample locations are shown in **Attachment 2**, **Appendix A**.



Table 11.4: Evaluation of Validation Analytical Results for AEC35- Summary Table (mg/kg)

Analyte	N	Detections	Maximum	n > Human Health Screening Criteria (NEPM, 2013)	n > Terrestrial Ecological Screening Criteria (NEPM, 2013)
TPH C6-C9	18	0	<20	0 above ML (commercial and industrial) (fine) of 800 mg/kg	-
TPH C10-C14	18	1	37	0 above ML (commercial and industrial) (coarse/fine) of 1,000 mg/kg	-
F1 (TPH C6–C10 minus BTEX)	18	0	<20	0 above HSL D 0-1 m, clay of 310 mg/kg	0 above ESL (commercial and industrial) (coarse / fine) of 215 mg/kg
F2 (TPH >C10-C16 minus naphthalene)	18	0	<50	HSL D, NL	0 above ESL (commercial and industrial) (coarse/fine) of 170 mg/kg
F3 (TPH >C16-C34)	18	0	<100	0 above ML (commercial and industrial) (fine) of 3,500 mg/kg	0 above ESL (commercial and industrial) (fine) of 2,500 mg/kg
F4 (TPH >C34-C40)	18	0	<100	0 above ML (commercial and industrial) (coarse/fine) of 10,000 mg/kg	0 above ESL (commercial and industrial) (fine) of 6,600 mg/kg
Naphthalene	18	0	<0.5	HSL D, NL	0 above ESL (commercial and industrial) of 370 mg/kg
Asbestos	18	0	NAD	-	-

n number of samples

NL Non-limiting

NAD No asbestos detected

One validation sample reported a low detection of TPH C10-C14 but below criteria. All other validation samples reported concentrations below PQLs and adopted criteria. The auditor considers that the excavation of asbestos and petroleum hydrocarbon impacted material within AEC35 has been adequately validated.

11.2.3 Material Disposed Off-Site

Approximately 150 m³ of material was estimated as being disposed off-site to a facility that can lawfully receive that material. Further discussion of disposal and classification is provided in Section 14.0.

11.2.4 Imported Material

Approximately 730 m³ of crushed sandstone (tunnel spoil) was estimated to be imported to the site for haul road construction and associated infrastructure. The supporting documentation that was provided is summarised in Table 11.5 below.

It is noted that the material was imported for the broader SCAW alignment which includes about 6.7 km of earthworks for track formation, temporary and permanent access roads, and bulk earthworks for the stabling and maintenance facility site. It is understood that due to the large nature

No criteria available/used



of the project and quantity of imported material, individual tracking per AEC was not undertaken. The auditor has considered all imported material documentation from the broader project in relation to the site.

Table 11.5: Imported Material

Source Site	Material Description (Consultant)	Site History/ Supplier Information	Summary of Validation Data	Auditor Comments
M6 Stage 1	Silty, clayey sand and crushed sandstone (ADE Consulting Group (ADE)).	Spoil from tunnelling activities within M7 Arncliffe.	The material is under a site specific Resource Recovery Order (RRO) and Resource Recovery Exemption (RRE). The RRO and RRE were provided. A certificate from the supplier was provided which stated that the material is consistent with tunnel spoil as defined in the RRO. ADE inspected the stockpiled material at the source site and collected 20 samples for heavy metals, PFAS, and foreign materials analysis. All results were below site assessment criteria and compliant with the RRO. Photographs of the material were provided. An import material tracking spreadsheet was provided which shows the quantity of material received per day across the broader SCAW alignment. A total of approximately 847.233 tonnes of material was imported to the broader SCAW alignment from M6 Stage 1. Sydney Environmental reviewed the imported material documentation and confirmed that the materials described in the compliance reports, and that the imported materials and the site, are suitable'.	It is noted that the RAP requirements for validation of imported material were not fully met, including providing transport records. Sydney Environmental state that the material and site are suitable. The auditor has considered the available information and notes that the samples collected by ADE at the source site reported concentrations less than the PQL with the exception of heavy metals, which were generally low, and did not exceed the adopted assessment criteria. The auditor also notes that an Imported Material Register was maintained and provided which outlines quantity of material received from the source site per day. In the context of the material source (tunnel spoil), material use and site setting, the auditor is satisfied that the material is suitable for use on-site.
Sydney Metro West Central Tunnelling Package	Gravelly sand (ADE)	Spoil from tunnelling activities within Sydney Metro West.	The material is under a site specific RRO and RRE. The RRO and RRE were provided. A letter was provided from CPBUI JV stating that the SCAW project is legally able to accept the tunnel spoil from the source site. A Section 143 approved notice was provided stating that the site can receive the tunnel spoil from the source site. A Routine Tunnel Spoil Compliance Report from ADE was provided. ADE inspected the stockpiled material at the source site and collected 10 samples per compliance report for heavy metals, PAH, TRH, BTEX, PCB, OCP, OPP, PFAS and foreign materials analysis. All results were below site assessment criteria and compliant with the RRO. Photographs of the material were provided. A import material tracking spreadsheet was provided which shows the quantity of material received per day across the broader SCAW alignment. A total of	It is noted that the RAP requirements for validation of imported material were not fully met, including providing transport records. Sydney Environmental state that the material and site are suitable. The auditor has considered the available information and notes the samples collected by ADE at the source site reported concentrations less than the PQL with the exception of heavy metals, which were generally low, and did not exceed the adopted assessment criteria. The auditor also notes that a Imported Material Register was maintained and provided which outlines quantity of material received from the source site per day.

broader SCAW alignment. A total of

approximately 139,234 tonnes of material

source (tunnel spoil), material use

and site setting, the auditor is



Source Site	Material Description (Consultant)	Site History/ Supplier Information	Summary of Validation Data	Auditor Comments
			was imported to the broader SCAW alignment. Sydney Environmental reviewed the imported material documentation and confirmed that the material imported is 'consistent with the materials described in the compliance reports, and that the imported materials and the site, are suitable'.	satisfied that the material is suitable for use on-site.
Sydney Metro West Eastern Tunnelling Package	Sand and sandstone (ADE)	Spoil from tunnelling activities within Sydney Metro West.	The material is under a site specific RRO and RRE. The RRO and RRE were provided. A letter was provided from CPBUI JV stating that the SCAW project is legally able to accept the tunnel spoil from the source site. A Section 143 approved notice was provided stating that the site can receive the tunnel spoil from the source site. Five Routine Tunnel Spoil Compliance Reports from December 2023 to December 2024 by ADE were provided. ADE inspected the stockpiled material at the source site and collected 10 samples per compliance report for heavy metals, PAH, TRH, BTEX, PFAS and foreign materials analysis. All results were below site assessment criteria and compliant with the RRO. Photographs of the material were provided. A import material tracking spreadsheet was provided which shows the quantity of material received per day across the broader SCAW alignment. A total of approximately 14,351 tonnes of material was imported to the broader SCAW alignment. Sydney Environmental reviewed the imported material documentation and confirmed that the materials described in the compliance reports, and that the imported materials and the site, are suitable'.	It is noted that the RAP requirements for validation of imported material were not fully met, including providing transpor records. Sydney Environmental state that the material and site are suitable. The auditor has considered the available information and notes the samples collected by ADE at the source site reported concentrations less than the PQL with the exception of heavy metals, which were generally low and did not exceed the adopted assessment criteria. The auditor also notes that a Imported Material Register was maintained and provided which outlines quantity of material received from the source site per day. In the context of the material source (tunnel spoil), material us and site setting, the auditor is satisfied that the material is suitable for use on-site



Source Site	Material Description (Consultant)	Site History/ Supplier Information	Summary of Validation Data	Auditor Comments
Warringah Freeway	Sandstone VENM (JBS&G)	The site was the Cammeray Golf Course since 1906 until the current development works.	A VENM Classification letter was provided by JBS&G. They undertook a desktop review of the site which included review of previous environmental investigations undertaken at the site, and a search of historical aerial imagery and NSW EPA public registers. The site or immediately surrounding area have not been listed on the NSW EPA's public register. Analytical results from previous environmental investigations were provided which included 24 samples collected and some analysed for metals, TPH, PAH, BTEX, asbestos, OCPs and OPP. Some minor detections were reported for PAHs in two samples. Results were generally low for metals and below PQLs for other analytes. JBS&G undertook test-pitting at the site. The material was described as natural sandstone bedrock and was in-situ beneath fill material. No asbestos was observed. Three samples were collected from the natural material and submitted for metals, TPH, BTEX and PAH laboratory analysis, and nine samples were collected and submitted for asbestos analysis. Samples reported low level detects of metals, and below PQL detects for other analytes. A letter was provided by CPBUI JV certifying that they can legally accept the VENM from this site. A Section 143 approved notice was provided stating that the site can receive the tunnel spoil from the source site. A import material tracking spreadsheet was provided which shows the quantity of material received per day across the broader SCAW alignment. A total of approximately 7,708 tonnes of material was imported to the broader SCAW alignment. Sydney Environmental reviewed the	It is noted that the RAP requirements for validation of imported material were not fully met, including providing transport records. Sydney Environmental state that the material and site are suitable. The auditor has considered the available information and notes the samples collected by JBS&G at the source site reported concentrations less than the PQL with the exception of heavy metals, which were generally low, and did not exceed the adopted assessment criteria. The auditor also notes that a Imported Material Register was maintained and provided which outlines quantity of material received from the source site per day. In the context of the material source (tunnel spoil), material use and site setting, the auditor is satisfied that the material is suitable for use on-site.
			imported material documentation and confirmed that the material imported is	

'consistent with the materials described in the compliance reports, and that the imported materials and the site, are

. suitable'.



Source	Material Description (Consultant)	Site History/ Supplier Information	Summary of Validation Data	It is noted that the RAP requirements for validation of imported material were not fully met, including providing transport records. Sydney Environmental state that the material and site are suitable. The auditor has considered the available information and notes the samples collected by ADE at the source site reported concentrations less than the PQL with the exception of heavy metals, which were generally low, and did not exceed the adopted assessment criteria. The auditor also notes that a Imported Material Register was maintained and provided which outlines quantity of material received from the source site per day. In the context of the material source (tunnel spoil), material use and site setting, the auditor is satisfied that the material is suitable for use on-site
Site				
Western Harbour Tunnel Stage 2	Sand (ADE)	Spoil from tunnelling activities within Western Harbour Tunnel excavations	The material is under a site specific RRO and RRE. The RRO and RRE were provided. A Routine Tunnelling Material Compliance assessment from December 2023 by ADE was provided. ADE inspected the stockpiled material at the source site and collected 10 samples per compliance report for heavy metals, PAH, PCB, OCP, OPP, TRH, BTEX, PFAS and foreign materials. No asbestos was observed. Two samples reported low level detects of PAHs which were above the screening criteria (VENM background ranges). 10 additional samples were collected from the material and analysed for PAHs. All samples reported low level detects of metals. All other concentrations were below PQLs. ADE considered the material was compliant under the RRO. Photographs of the material were provided. A letter was provided by CPBUI JV certifying that they can legally accept the VENM from this site. A Section 143 approved notice was provided stating that the site can receive the tunnel spoil from the source site.	
			A import material tracking spreadsheet was provided which shows the quantity of material received per day across the broader SCAW alignment. A total of approximately 735,925 tonnes of material was imported from Western Harbour Tunnel (Stage 2 and Southern Tunnel Package) to the broader SCAW alignment. Sydney Environmental reviewed the imported material documentation and confirmed that the material imported is 'consistent with the materials described in the compliance reports, and that the imported materials and the site, are	

suitable'.



Source Site	Material Description (Consultant)	Site History/ Supplier Information	Summary of Validation Data	Auditor Comments
Western Harbour Tunnel Southern Tunnel Package	Sand (ADE)	Spoil from tunnelling activities within Western Harbour Tunnel excavations	The material is under a site specific RRO and RRE. The RRO and RRE were provided. A Routine Tunnelling Material Compliance assessment from January 2024 by ADE was provided. ADE inspected the stockpiled material at the source site and collected 10 samples per compliance report for heavy metals, PAH, PCB, OCP, OPP, phenols, TRH, BTEX, PFAS and foreign materials. No asbestos was observed. All samples reported low level detects of metals. All other concentrations were below PQLs. ADE considered the material was compliant under the RRO. Photographs of the material were provided. A letter was provided by CPBUI JV certifying that they can legally accept the VENM from this site. A Section 143 approved notice was provided stating that the site can receive the tunnel spoil from the source site. A Spoil Acceptance Checklist was completed by CPBUI JV and provided. A import material tracking spreadsheet was provided which shows the quantity of material received per day across the broader SCAW alignment. A total of approximately 735,925 tonnes of material was imported from Western Harbour Tunnel (Stage 2 and Southern Tunnel Package) to the broader SCAW alignment. Sydney Environmental reviewed the imported material documentation and confirmed that the material imported is 'consistent with the material imported is 'consistent with the material described in the compliance reports, and that the imported materials and the site, are suitable'.	It is noted that the RAP requirements for validation of imported material were not fully met, including providing transport records. Sydney Environmental state that the material and site are suitable. The auditor has considered the available information and notes the samples collected by ADE at the source site reported concentrations less than the PQL with the exception of heavy metals, which were generally low, and did not exceed the adopted assessment criteria. The auditor also notes that a Imported Material Register was maintained and provided which outlines quantity of material received from the source site per day. In the context of the material source (tunnel spoil), material use and site setting, the auditor is satisfied that the material is suitable for use on-site.

Overall, given the proposed future land use (railway corridor), importation of crushed sandstone (tunnel spoil) and the processes in place (to review, accept and manage imported material), the auditor is generally satisfied that imported material is largely suitable for use on-site.



12.0 Contamination Migration Potential

Following removal of ACM impacted fill, the auditor considers that there would be little or no potential for migration of contamination form the site in surface water or dust. In the auditors' opinion, there is no evidence of significant migration of contamination and little potential for future migration given the remedial works undertaken.



13.0 Assessment of Risk

Based on assessment of results against relevant guidelines and consideration of the overall investigation, it is the auditor's opinion that the risks to human health and the environment are low.



14.0 Compliance with Regulatory Guidelines and Directions

The auditor has used guidelines currently approved by the EPA under Section 105 of the NSW Contaminated Land Management Act 1997 (Appendix C).

14.1 Development Approvals

Development consent (SSI 10051, issued on 23 July 2021) was granted by the Minister for Planning and Public Spaces for construction and operation of a railway track to the Western Sydney Airport. The consent was subject to a number of requirements of which condition (E96) relates to contamination and requires a Section A Site Audit Statement (SAS) as follows:

E96 A Section A1 or Section A2 Site Audit Statement (accompanied by an Environmental Management Plan) and its accompanying Site Audit Report, which state that the contaminated land disturbed by the work has been made suitable for the intended land use, must be submitted to the Planning Secretary and the Relevant Council(s) after remediation and before the commencement of operation of the CSSI.

The above condition has been interpreted to require a SAS commenting on site suitability for use as a railway track, embankments/ noise barriers, a stabling yard and maintenance facility, station and passive open space adjacent to the rail corridor. This SAR and accompanying SAS has been completed in order to comply with this condition.

Works were undertaken in accordance with the development consent.

14.2 Waste Disposal

The auditor has assessed the overall waste management process by review of the information presented in the referenced reports, supplemented by field observations. The key documents provided relating to waste include:

- Ex-situ waste classification assessments prepared following excavation by Sydney Environmental in July 2023.
- A material movement register which includes dates and locations of material movement, truck
 register, receiving facility, volume and classification. It is noted that the material from the site was
 not segregated from material from an adjacent site (AEC 36 subject of a separate audit), and they
 have been reported and disposed of together. This has not affected the classification or disposal
 of waste from the site.
- Weighbridge receipt dockets.
- EPA asbestos tracking consignment numbers were provided.

An assessment of the waste classification process in consideration of Waste Classification Guidelines, Part 1: Classifying Waste (EPA 2014) was undertaken. The consultant indicated wastes were classified and managed in accordance with the Waste Classification Guidelines, Part 1: Classifying Waste (EPA 2014).

Based on the information provided in the validation report the auditor is satisfied:

- With the classification of the waste.
- That the waste was moved off-site.
- That the waste was taken to lawful facilities.



14.3 Imported Material

Based on the information in Section 11.0 and the site visit on 8 November 2023, the auditor is of the opinion that the material imported to the site is consistent with crushed sandstone (tunnel spoil).

14.4 Licences

Sydney Environmental confirmed that the remediation works were undertaken by Spot-On Asbestos Removal, a Class A licence contractor (AD214060).

Asbestos clearance inspections were undertaken on the remedial excavation with a clearance inspection report provided in the validation report. The clearance was undertaken by Mitchell Kirby (LAA002039).

The auditor checked the NSW Government register of licenced tradespeople on 9 January 2025 and confirmed that the licences listed are current and active.



15.0 Conclusions and Recommendations

Sydney Environmental considers that "The remedial goal for AEC35 has been achieved as per the RAP (DP 2023b) and the land is suitable for proposed land-use". Based on the information presented in Sydney Environmental's 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 railway track, embankments/ noise barriers, a stabling yard and maintenance facility, station and passive open space adjacent to the rail corridor.



16.0 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)). The audit report has been prepared to satisfy a requirement for the redevelopment the site.

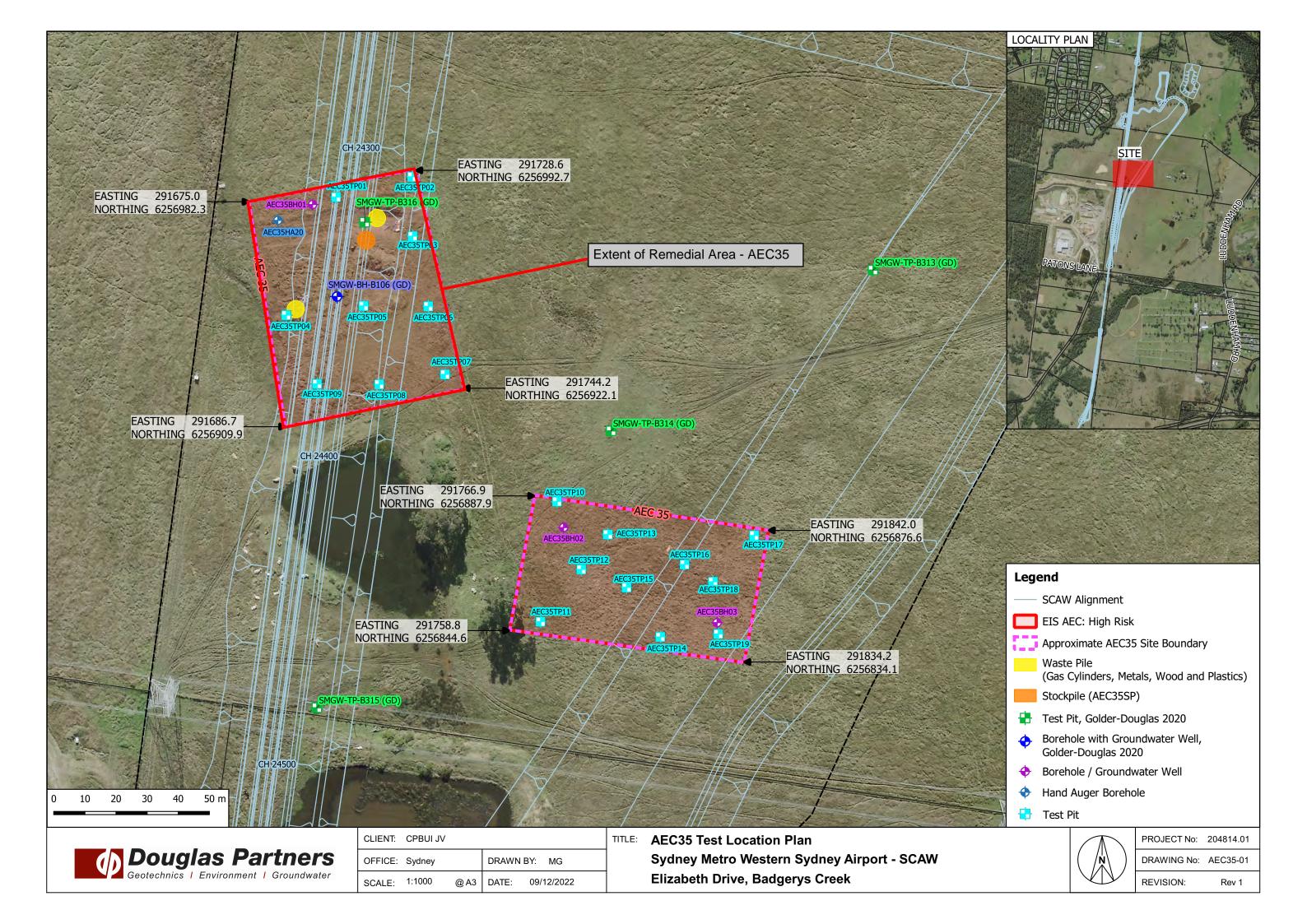
This summary report may not be suitable for other uses. Sydney Environmental included limitations in their report. The audit must also be subject to those limitations. The auditor has prepared this document in good faith, but is unable to provide certification outside of areas over which the auditor 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





Sydney Environmental Group

Client Name: CPB Contractors and Universal Infrastructure Joint Venture

Project Name: Site Validation Report - PS105 (AEC35) N

Figure Number: 2

Figure Date: 20 June 2023

Project Location: 43B Luddenham Road, Orchard Hills NSW

Report Number: 1870-ASBCLR-01-220623.v1f

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





16 December 2024

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

Dear

Re: Interim Audit Advice #7: Sydney Metro Western Sydney Airport Surface and Civil Alignment Works

Review of Validation Report

1.0 Introduction and Background

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.

It is understood that asbestos impacted soil from areas of environmental concern (known as AEC 35, 36 and 43) are to be removed and encapsulated within PS105. The asbestos encapsulation cell is to be capped with material sourced from within SCAW considered surplus to the requirements of construction and also verified as suitable. An asbestos management plan has been prepared to outline requirements for asbestos handling and stockpiling. Remediation and validation have been undertaken at the AECs and PS105, and the environmental consultant has produced the following report which was forwarded to the site auditor for review:

• 'Site Validation Report, SCAW PS105 – Luddenham Road, Orchard Hills NSW' dated 3 December 2024 by Sydney Environmental Group.

This interim audit advice (IAA) details the review of the validation report.



2.0 Review Comments

The Site Auditor has undertaken a review of the validation report 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).

It is expected that each of the comments below will each be responded to in a response register (provided as an attachment). Comments are provided herein.

General Validation Report Comments

- As requested, the auditor has only reviewed the validation report in relation to the AECs (35, 36 and 43). Comments regarding PS105 will be provided in a future IAA.
- There appears to be duplication between the text and the appendices. The information from the attached interim validation reports (Appendix E) are captured in the report text. Remove letters from the attachments. The laboratory reports also appear to be duplicated between Appendix A and the attached letters.
- Confirm the dates that remediation/validation was undertaken for each of the AECs and PS105.
- Provide updated CSMs for each of the sites (AECs and PS105) after remediation/validation.
- Provide stockpile tracking registers for material moved from all AECs to the temporary stockpile area, and then either off-site or placement within PS105. It isn't clear where excavated material was stockpiled, and how the material was segregated and tracked.
- Where it is stated that asbestos material was assessed to be suitable for reuse on-site, specify that this is for placement within the containment cell in PS105.
- Section 6.3. Table 6.1.
 - Update to specify the site adopted criteria for PS105 (public open space) and the AECs (commercial industrial).
 - Ecological exposure pathway. Confirm why 'urban residential' land use setting has been adopted.
- Sections 7 and 8. Provide descriptions of the soil composition of all material encountered (samples, excavated/removed material and underlying natural material).
- Section 8.6. Table 8.6.2. The Site Audit Report will need to discuss and close out the waste disposal for each AEC. To satisfy audit requirements, please separate the waste disposal details per AEC/site.
- Section 8.7. To satisfy audit requirements, evidence will need to be provided about quantities and types of material imported to each site (each AEC and PS105). The environmental consultant will need to be satisfied that the material imported to site was lawful and that the site is suitable for the proposed land uses.
- Section 8. Confirm all remediation and validation work was undertaken in compliance with regulatory requirements set out by the EPA, SafeWork NSW, council and the development consent.
- Section 9.0.
 - Table 9.1.1, last row, 'Refer comments'. Refer to what comments?
 - Table 9.4.1.
 - Confirm all duplicate/triplicate samples are listed here as it appears some are missing (e.g., VAL-DUP01, AEC35-DUP01, AEC35-Dup01a, VAL-DUP01a).
 - Include number of primary, duplicate and triplicate samples for each AEC and PS105 to verify target % was met.
- Figures. Provide survey plans for the site/remedial extent for all AECs.
- Appendix A. Laboratory Documentation.
 - Some laboratory documentation appear to be missing. Refer to details below and update to include all missing documentation. The below list is not exhaustive.
 - COC and SRN: 1000256
 - SRN: 1000175, 999776, 1000624, 1014177, 1018222
 - SRN and laboratory QA/QC results: 249367, SE249526



AEC 35

- Section 6.5.2. It is stated that trip spikes and trip blanks are required where volatile contaminants of concern analysis is being undertaken, but then states AEC35 does not require trip spikes/blanks, despite TRH being the primary contaminants of concern for validation. It doesn't appear trip spikes/blanks were collected for AEC35 validation sampling. Close out why they weren't taken and if applicable, that the data isn't affected.
- Section 7.1.
 - Include descriptions of the soil composition (and foreign inclusions) of the excavated material for the 'heavy impacted' material.
 - The RAP states fill material was encountered at SMGW-BH-B106 to 4.0 mbgl and the remedial excavation was expected to extend to at least this depth (noting the drilling methodology for this location was auger which is not likely to be overly accurate of the stratigraphy layers). Justify why the remedial excavation was terminated at 1.5 mbgl and not extended to the expected depth listed in the RAP.
 - The RAP states 'Validation samples will be analysed by a NATA accredited laboratory for the relevant contaminant of concern relevant to the remediation area.' Justify why validation samples for the excavation were only analysed for TRH and asbestos. Exceedances of benzo(a)pyrene were also reported in SMGW-BH-BH106. Considering metals were identified in the fill material, justify why metals analysis was not undertaken.
 - Update to close out the remediation required for waste material scattered across the western part
 of the site. Confirm the waste material was removed from the site and disposed of to an
 appropriately licensed landfill.
- Section 8.1.
 - The number of base and wall samples listed here (12 and 7 respectively) do not match the figures and analytical tables. Please update to reflect only the samples that were analysed.
 - Confirm the depth excavated into natural material. Section 7.1 of the report states 'impacted soil materials were exhumed until inferred natural soil materials were reached', however, the RAP states 'The excavation depth should be extended (at least) to 0.1 m into underlying natural soil'.
 - Confirm the depth of the wall samples collected.
 - Temporary Stockpiling Area. Confirm if both the 'heavily' and 'lightly' impacted material were stockpiled at this location.
 - Include sampling methodology for excavation validation samples. Confirm if a PID was used during sample collected. If so, provide PID readings and calibration certificates. If not, justify why this was not undertaken.
- Waste Classification. Laboratory batch 1000624. The sample collection date listed is 16 May 2023 but received by the laboratory 16 June 2023. Confirm when the samples were collected and if they were labelled with the wrong date, otherwise, comment on holding time exceedances and sample integrity.

AEC 36

- Section 7.2. Specify whether material from Area 2 and 3 were 'lightly' or 'heavily impacted soil' (i.e., whether they were to be placed within PS105 or disposed off-site).
- Section 8.2.
 - Confirm the depth excavated into natural material for all areas, the RAP stated 0.1 m into natural material. Include a description of the natural material.
 - Confirm depth of wall samples.
 - Confirm if all material (not just 'heavily impacted') was stockpiled at the location provided on the figure in the waste classification report in Appendix C.
 - Confirm the waste classification assessment report provided in Appendix C is for the 'heavily impacted' material.
 - Clarify if delineation test pitting was conducted before the excavation of impacted material?
- Figures. Figure 6. The legend refers to 'Area 2' but title refers 'Area 1'. Please update.

Interim Audit Advice #7: Sydney Metro Western Sydney Airport Surface and Civil Alignment Works Review of Validation Report



AEC 43

- Section 7.3. Area 2. Confirm depth of the excavation below the asbestos conduit.
- Section 8.3.
 - Confirm depth excavated into natural material.
 - Confirm the depth of wall samples.
 - Paragraph under Table 8.3.1. Confirm where the suspected asbestos material was observed. Confirm where on the site the additional excavation occurred. Does this include the failed validation sample 'R3-V1-W01'?
- Figures. Confirm if the figures represent the final excavations after some validation samples failed criteria. It doesn't appear that sample 'R3-V1-W01a' is presented on the figures.

3.0 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**

NSW EPA Accredited Site Auditor (0803)

KR/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.

Reliance – This document has been prepared solely for the use of CPBUIJV. No responsibility or liability to any third party is accepted for any damages arising out of the use of this document by any third party.

Copyright and Intellectual Property – This document is commercial in confidence. No portion of this document may be removed, extracted, copied, electronically stored or disseminated in any form without the prior written permission of Senversa. Intellectual property in relation to the methodology undertaken during the creation of this document remains the property of Senversa.

Item	Description
Site Name	PS105 and AEC's 35, 36, 43.
Site Address	Luddenham Road, Orchard Hills NSW
Client	CPBUI JV
Consultant	Svdnev Environmental
Auditor	
Document Name	Site Validation Report
Document Date	3 December 2024

Document Date 3 December 2024			
Item	Section / Topic	Auditor Comment (16 December 2024)	Consultant Response
Item		Auditor Comment (16 December 2024)	Consultant Response
1	General Validation Report Comments		
		As requested, the auditor has only reviewed the validation report in relation to the AECs (35, 36 and 43). Comments regarding PS105 will	
2	-	be provided in a future IAA.	
		There appears to be duplication between the text and the appendices. The information from the attached interim validation reports	
		(Appendix E) are captured in the report text. Remove letters from the attachments. The laboratory reports also appear to be duplicated	
3	-	between Appendix A and the attached letters.	
4	-	Confirm the dates that remediation/validation was undertaken for each of the AECs and PS105.	
5	-	Provide updated CSMs for each of the sites (AECs and PS105) after remediation/validation.	
		Provide stockpile tracking registers for material moved from all AECs to the temporary stockpile area, and then either off-site or	
6	-	placement within PS105. It isn't clear where excavated material was stockpiled, and how the material was segregated and tracked.	
		Where it is stated that asbestos material was assessed to be suitable for reuse on-site, specify that this is for placement within the	
7	-	containment cell in PS105.	
		Update to specify the site adopted criteria for PS105 (public open space) and the AECs (commercial industrial).	
8	Section 6.3, Table 6.1	Ecological exposure pathway. Confirm why 'urban residential' land use setting has been adopted.	
		Provide descriptions of the soil composition of all material encountered (samples, excavated/removed material and underlying natural	
9	Sections 7 and 8	material).	
		The Site Audit Report will need to discuss and close out the waste disposal for each AEC. To satisfy audit requirements, please separate	
10	Section 8.6, Table 8.6.2	the waste disposal details per AEC/site.	
		To satisfy audit requirements, evidence will need to be provided about quantities and types of material imported to each site (each AEC	
		and PS105). The environmental consultant will need to be satisfied that the material imported to site was lawful and that the site is	
11	Section 8.7	suitable for the proposed land uses.	
		Confirm all remediation and validation work was undertaken in compliance with regulatory requirements set out by the EPA, SafeWork	
12	Section 8	NSW, council and the development consent.	
13	Section 9, Table 9.1.1	Last row, 'Refer comments'. Refer to what comments?	
		Confirm all duplicate/triplicate samples are listed here as it appears some are missing (e.g., VAL-DUP01, AEC35-DUP01, AEC35-	
		Dup01a, VAL-DUP01a).	
14	Section 9, Table 9.4.1	Include number of primary, duplicate and triplicate samples for each AEC and PS105 to verify target % was met.	
15	Figures	Provide survey plans for the site/remedial extent for all AECs.	
10	rigates	Some laboratory documentation appear to be missing. Refer to details below and update to include all missing documentation. The	
		below list is not exhaustive.	
		- COC and SRN: 1000256	
		- SRN: 1000175, 999776, 1000624, 1014177, 1018222	
16	Appendix A	- SRN and laboratory QA/QC results: 249367, SE249526	
17	AEC 35		
		It is stated that trip spikes and trip blanks are required where volatile contaminants of concern analysis is being undertaken, but then	
		states AEC35 does not require trip spikes/blanks, despite TRH being the primary contaminants of concern for validation. It doesn't	
		appear trip spikes/blanks were collected for AEC35 validation sampling. Close out why they weren't taken and if applicable, that the	
18	Section 6.5.2	data isn't affected.	
		Include descriptions of the soil composition (and foreign inclusions) of the excavated material for the 'heavy impacted' material.	
		The RAP states fill material was encountered at SMGW-BH-B106 to 4.0 mbgl and the remedial excavation was expected to extend to at	
		least this depth (noting the drilling methodology for this location was auger which is not likely to be overly accurate of the stratigraphy	
		layers). Justify why the remedial excavation was terminated at 1.5 mbgl and not extended to the expected depth listed in the RAP.	
		The RAP states 'Validation samples will be analysed by a NATA accredited laboratory for the relevant contaminant of concern relevant to	
		the remediation area.' Justify why validation samples for the excavation were only analysed for TRH and asbestos. Exceedances of	
		benzo(a)pyrene were also reported in SMGW-BH-BH106. Considering metals were identified in the fill material, justify why metals	
		analysis was not undertaken.	
		Update to close out the remediation required for waste material scattered across the western part of the site. Confirm the waste	
19	Section 7.1	material was removed from the site and disposed of to an appropriately licensed landfill.	
10	occuon 7.1	material was removed from the site and disposed of to an appropriately deemsed tandida.	
		The number of base and wall samples listed here (12 and 7 respectively) do not match the figures and analytical tables. Please update to	
		reflect only the samples that were analysed. Confirm the depth excepted into natural material. Section 7.1 of the report states 'impacted soil materials were exhumed until inferred.	
		Confirm the depth excavated into natural material. Section 7.1 of the report states 'impacted soil materials were exhumed until inferred	
		natural soil materials were reached', however, the RAP states 'The excavation depth should be extended (at least) to 0.1 m into	
1		underlying natural soil'.	
		Confirm the depth of the wall samples collected.	
1		Temporary Stockpiling Area. Confirm if both the 'heavily' and 'lightly' impacted material were stockpiled at this location.	
		Include sampling methodology for excavation validation samples. Confirm if a PID was used during sample collected. If so, provide PID	
20	Section 8.1	readings and calibration certificates. If not, justify why this was not undertaken.	
1		Laboratory batch 1000624. The sample collection date listed is 16 May 2023 but received by the laboratory 16 June 2023. Confirm when	
1		the samples were collected and if they were labelled with the wrong date, otherwise, comment on holding time exceedances and	
21	Waste Classification	sample integrity.	
22	AEC 36		
		Specify whether material from Area 2 and 3 were 'lightly' or 'heavily impacted soil' (i.e., whether they were to be placed within PS105 or	
23	Section 7.2	disposed off-site).	
		Confirm the depth excavated into natural material for all areas, the RAP stated 0.1 m into natural material. Include a description of the	
		natural material.	
		Confirm depth of wall samples.	
		Confirm if all material (not just 'heavily impacted') was stockpiled at the location provided on the figure in the waste classification report	
		in Appendix C.	
		Confirm the waste classification assessment report provided in Appendix C is for the 'heavily impacted' material.	
24	Section 8.2	Clarify if delineation test pitting was conducted before the excavation of impacted material?	
25	Figures	Figure 6. The legend refers to 'Area 2' but title refers 'Area 1'. Please update.	
26	AEC 43	O	
27	Section 7.3	Area 2. Confirm depth of the excavation below the asbestos conduit.	
21	Occident 7.3	·	
1		Confirm the depth excavated into natural material.	
1		Confirm the depth of wall samples.	
20	Section 9.2	Paragraph under Table 8.3.1. Confirm where the suspected asbestos material was observed. Confirm where on the site the additional	
28	Section 8.3	excavation occurred. Does this include the failed validation sample 'R3-V1-W01'?	
	5	Confirm if the figures represent the final excavations after some validation samples failed criteria. It doesn't appear that sample 'R3-V1-	
29	Figures	W01a' is presented on the figures.	
1]		





13 January 2025

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

Dear

Re: Interim Audit Advice #8: Sydney Metro Western Sydney Airport Surface and Civil Alignment Works

Review of Validation Report

1.0 Introduction and Background

(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.

It is understood that asbestos impacted soil from areas of environmental concern (known as AEC 35, 36 and 43) are to be removed and encapsulated within PS105. The asbestos encapsulation cell is to be capped with material sourced from within SCAW considered surplus to the requirements of construction and also verified as suitable. An asbestos management plan has been prepared to outline requirements for asbestos handling and stockpiling. Remediation and validation have been undertaken at the AECs and PS105, and the environmental consultant has produced the following report which was forwarded to the site auditor for review:

• 'Site Validation Report, SCAW PS105 – Luddenham Road, Orchard Hills NSW' dated 20 December 2024 by Sydney Environmental Group.

A previous version of the Site Validation Report was provided with auditor comments provided in interim audit advice (IAA) No. 7 dated 16 December 2024. This (IAA) details the review of the updated validation report.



2.0 Review Comments

The Site Auditor has undertaken a review of the validation report 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).

It is expected that each of the comments below will each be responded to in a response register (provided as an attachment). Please provide an excel version of the comments register in return. Comments are provided herein.

General Validation Report Comments

- As requested, the auditor has only reviewed the validation report in relation to the AECs (35, 36 and 43). Comments regarding PS105 will be provided in a future IAA.
- Section 7.
 - The auditor notes the table added to Section 7, however, this is not a stockpile tracking register. It is not clear how the material was segregated or tracked. Provide documentation that tracks the material from 'cradle to grave'. To satisfy DA conditions, the auditor is required to complete a Section A SAS to confirm site suitability. The auditor needs to be satisfied with the documentation provided that the material was removed from the AECs, tracked and stockpiled appropriately, and then placed within PS105 or disposed off-site to a suitable facility. Further assessment may be warranted to prove the sites are suitable if sufficient evidence is not provided.
 - Include units for the volume.
 - The quantities do not match up between this table, Tables 8.6.1 and 8.6.2 and waste dockets.
 - Confirm asbestos Class A licenced asbestos removal contractor and number. It appears Spot-On Asbestos Removal number is AD214060.
 - Confirm if Spot-On were also engaged for off-site disposal of material.
- Section 7 and 8.
 - The auditor notes that soil descriptions have been provided for the removed impacted material and underlying natural material, however sample descriptions were not.
 - Please provide sample descriptions (potentially in the form of a summary sample register) and test pit logs.
- Section 8.6, Table 8.6.2.
 - The auditor must be satisfied with evidence provided by the environmental consultant that the impacted material was removed from the AECs and disposed off-site to a suitable facility. This will include material tracking between the AEC, temporary stockpiling area and off-site disposal. If adequate proof is not provided, the auditor is required to note this in the Site Audit Report and notify the EPA.
 - Confirm if the asbestos waste was tracked and provide EPA consignment numbers.
 - Confirm if the tracking dockets and quantities provided include asbestos containing material (for example asbestos conduits from AEC 43).
- Section 8.7. The auditor notes the environmental consultant have included comments on site
 suitability, however, no proof has been provided documenting the types and quantities of material
 imported to the site. The auditor must be satisfied that the material imported to the site was lawful
 and that the site is suitable for the proposed land uses based on documentation provided. Further
 assessment may be warranted to prove the sites are suitable if sufficient evidence is not provided.
- Confirm if the stockpile referenced as Blaxlands Creek (BC-01), the 'Remediation Works at Elizabeth Drive' and the diesel spill (SP01 and SP02 on page 1787 of the PDF) relate to any of the AECs or PS105 (were either located within or material encapsulated within PS105).
- Figures. The auditor notes survey plans for remedial areas were provided for AEC's 35 and 36. A survey plan for the entire AEC 43 was provided. Please confirm if the audit is to cover the whole AEC rather than remedial areas.



Appendix A.

- Laboratory reports from page 354 of the PDF document appear to be duplicates.
- There appear to be reports included in Appendix A. It is not clear if these are related to the rest of the report.
- Some COCs and SRNs are still missing (for example, batches 1024753, 1023751, 1024479, 1012751, 1012931, 1013428, 1014168, 249367, 1000624, 1014177, 1044137).

AEC 35

Section 7.1. The following comment from the previous IAA was not addressed: Update to close out
the remediation required for waste material scattered across the western part of the site. Confirm the
waste material was removed from the site and disposed of to an appropriately licensed landfill.

AEC 43

- Section 8.3.1, page 58 of the PDF. The further excavation for V1 and V2 in Remediation Area 3 is still not clear. It doesn't seem any of the sample numbers match up, including for V3:
 - V1: The report text says 1 base sample and 4 wall samples were collected, then during bulk earthworks an additional 1 base sample and 3 wall samples were collected. The figures show 1 base sample and four wall samples. The laboratory reports have 1 base sample and 4 wall samples collected on 8 September 2023, an additional wall sample (W01a) collected on 12 September 2023, and an additional three wall samples collected on 13 November 2023. The tables show 1 base sample and five wall samples (including W01a) from 8 and 12 September 2023.
 - V2: The report text says 2 base samples and 6 wall samples were collected, then during bulk earthworks an additional 2 base samples and 6 wall samples were collected. The figures show 3 base samples and 6 wall samples. The laboratory reports have 2 base and 6 wall samples collected on 13 November 2023. The tables show 1 base and 6 wall samples from 8 September 2023.
 - V3: The report text says 2 base samples and 6 wall samples were collected. The figures show 2 base samples and 6 wall samples. The laboratory reports show 3 base and 6 wall samples were collected on 8 September 2023. The tables show 3 base and 6 wall samples from 8 September 2023.
- Update the report text so it is clear the sequence of remediation and validation works undertaken, including where validation samples failed, and when PACM was encountered and further excavation and sampling undertaken. Include the dimensions of the excavations before and after failed samples, and further excavation during bulk earthworks. Comment whether sample density for the further excavation during bulk earthworks was in accordance with the RAP. Confirm if the samples collected on 13 November 2023 are validation samples following further excavation during bulk earthworks.
- Update the figures to show the final validation samples collected (that passed validation criteria) and final excavation extents.
- Update the analytical tables so that all samples are presented. Make sure it is clear which samples were the final validation samples and which ones were subsequently removed to due failed validation samples or identified PACM during bulk earthworks.
- AEC43. Area 2. Samples RA2-V-W27-B and RA2-V-W28-B are included in the laboratory reports but nowhere else. Confirm what these samples are. As mentioned in the comment above for Area 3, clearly outline the sequence of remediation and validation work undertaken and include all samples in the analytical tables. Please also confirm the information for Area 1 is correct.



3.0 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**

NSW EPA Accredited Site Auditor (0803)

KR/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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25 February 2025

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

Dear

Re: Interim Audit Advice #9: Sydney Metro Western Sydney Airport Surface and Civil Alignment Works

Review of Validation Report

1.0 Introduction and Background

(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.

It is understood that asbestos impacted soil from areas of environmental concern (known as AEC 35, 36 and 43) are to be removed and encapsulated within PS105. The asbestos encapsulation cell is to be capped with material sourced from within SCAW considered surplus to the requirements of construction and also verified as suitable. An asbestos management plan has been prepared to outline requirements for asbestos handling and stockpiling. Remediation and validation have been undertaken at the AECs and PS105, and the environmental consultant has produced the following report which was forwarded to the site auditor for review:

• 'Site Validation Report, SCAW PS105 – Luddenham Road, Orchard Hills NSW' dated 13 February 2025 (Report No. 1870-SVR-03-211124.v3f) by Sydney Environmental Group.

Previous versions of the Site Validation Report were provided with auditor comments provided in previous interim audit advice (IAA). This IAA details the review of the updated validation report.

2.0 Review Comments

The Site Auditor has undertaken a review of the validation report 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).

General Validation Report Comments

 As requested, the auditor has only reviewed the validation report in relation to the AECs (35, 36 and 43). Comments regarding PS105 will be provided in a future IAA.



- As per previous IAA, confirm if asbestos waste was tracked and provide EPA consignment numbers. If so, these will need to be included in the validation report. If not, clarify why.
- Please include if council were notified of the remediation works. Confirm if the remedial works are 'Category 1' or 'Category 2'.
- Section 2. Table 2.1 Include site details (address, Lot/DP) for AECs too.
- Section 8.7. Based on imported material documentation provided by CPBUI JV, material also appeared to be imported from Warringah Freeway, Western Harbour Tunnel Stage 2 and Western Harbour Tunnel STP. Please confirm if the material imported to the AEC's and PS105 was only from the suppliers listed in Table 8.7.1, or please update this table.
- Section 12. Conclusions need to be separated for each AEC and PS105, as it is understood that the AECs do not require a LTEMP.
- Please confirm when the auditor will receive the LTEMP.
- Appendix F.
 - As previously mentioned, all imported material documentation needs to be attached to the validation report. This includes the material tracking spreadsheet, RRO/RRE documents, material classification / compliance reports, and other letters certifying the material is lawfully able to be imported to the site. Please ensure documentation is only for relevant source sites (refer to above comment seeking clarification on which sites imported material was sourced from).

AEC 35

- Figures. Page 155 of the PDF. Update survey plan so that it shows only the relevant site (the northwest part).
- Please include in the report the details from response to IAA No. 8 regarding the removal of waste.

3.0 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**

NSW EPA Accredited Site Auditor (0803)

KR/MP

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- 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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