RAMBOLL

ENVIRONMENT
& HEALTH

4 April 2025

Icon Oceania Kemps Development Pty Ltd
C/ RP Infrastructure
Attn: Ben Prior
Suite 901, Level 9, 66 Goulburn Street
Sydney NSW 2000

By email: ben.prior@rpinfrastructure.com.au

Dear Ben,

RE: INTERIM AUDIT ADVICE LETTER NO. 1 - SSD-23480429 - REMEDIAL ACTION PLAN, WESTGATE INDUSTRIAL ESTATE AT 253-267 ALDINGTON ROAD, KEMPS CREEK

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Ref: 318002190

Audit Number: LW-069

1. INTRODUCTION

As a NSW Environment Protection Authority (EPA) accredited Contaminated Sites Auditor, I am conducting an Audit (LW-069) under the NSW *Contaminated Land Management Act 1997* (CLM Act) in relation to the development of Westgate Industrial Estate at 253-267 Aldington Road, Kemps Creek, NSW 2178 (the site) (**Attachment 1**).

State Significant Development (SSD) application (SSD-23480429) has been prepared for the construction and operation of three warehouse buildings with a total floor area of 45,530 m^2. Site preparation works include demolition, bulk earthworks, road construction, site servicing, on-site detention, landscaping and subdivision. The application is currently under assessment.

Icon Oceania Kemps Developments Pty Ltd (Icon Oceania) commissioned Interim Audit Advice (IAA #1) reviewing the adequacy of the contaminated land investigations and the Remediation Action Plan (RAP) to support the application process. The Planning Secretary's Environmental Assessment Requirements (SEARs) require *"an assessment of site suitability under the provisions of SEPP 55."*[1]. The SEARs do not specially request an Audit, therefore the Audit is currently a non-statutory audit. The Audit would become statutory if required by future consent conditions. The Audit will ultimately be completed for the purpose of certifying the suitability of the site for its intended use for warehousing.

IAA #1 is based on a review of the documents listed below as well as discussions with RP Infrastructure Pty Ltd (RPI), the project manager for the

[1] Chapter 4 Remediation of Land in the Resilience and Hazards State Environment Planning Policy (SEPP) (2021) (SEPP R&H, formerly known as SEPP 55) and NSW Department of Urban Affairs and Planning and NSW EPA (1998) 'Managing Land Contamination, Planning Guidelines SEPP 55 – Remediation of Land'

project, and Douglas Partners Pty Ltd (DP) who undertook the investigations and prepared the RAP. The reports reviewed were:

- 'Report on Preliminary Geotechnical Investigation, Proposed Industrial Development, 253-267 Aldington Road, Kemps Creek, NSW', 27 October 2023, DP.
- 'Report on Preliminary Site Investigation with Limited Sampling (Contamination), Proposed Industrial Development, 253-267 Aldington Road, Kemps Creek', 31 October 2023, DP (**the PSI**).
- 'Report on Limited Detailed Site Investigation (Contamination), Proposed Industrial Development, 253-267 Aldington Road, Kemps Creek', 31 October 2023, DP (**the DSI**).
- 'Report on Remediation Action Plan, Proposed Industrial Development, 253-267 Aldington Road, Kemps Creek, NSW', 21 February 2025 (and draft dated 31 October 2024), DP (**the RAP**).

The PSI and the DSI were originally prepare din 2021 and were updated with I have reviewed the key documents against the requirements of guidelines made or approved under Section 105 of the CLM Act, including the following:

- ANZECC & ARMCANZ (October 2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Volume 3, Primary Industries - Rationale and Background Information*
- NSW Department of Environment and Conservation (NSW DECC) (2005) *'Guidelines for Assessing Former Orchards and Market Gardens'*
- NHMRC (2008) *Guidelines for Managing Risks in Recreational Water* (GMRRW)
- NHMRC (2011) *National Water Quality Management Strategy, Australian Drinking-Water Guidelines* (ADWG)
- National Environment Protection Council (NEPC) *'National Environment Protection (Assessment of Site Contamination) Measure 1999'*, as Amended 2013 (NEPM 2013)
- NSW EPA (2015) *'Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997'*
- NSW EPA (2017) *'Guidelines for the NSW Site Auditor Scheme (3rd Edition)'*
- Australian and New Zealand Guidelines (ANZG) (2018) *'Guidelines for Fresh and Marine Water Quality'*
- ANZECC & ARMCANZ (October 2000) *'Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Volume 3, Primary Industries - Rationale and Background Information'*
- Australia and New Zealand Heads of EPAs (HEPA 2020) *'PFAS National Environmental Management Plan, Version 2.0'*
- NSW EPA (2020) *'Contaminated Land Guidelines, Consultants Reporting on Contaminated Land'*
- Chapter 4 Remediation of Land in the Resilience and Hazards State Environment Planning Policy (SEPP) (2021) (SEPP R&H, formerly known as SEPP 55) and NSW Department of Urban Affairs and Planning and NSW EPA (1998) *'Managing Land Contamination, Planning Guidelines SEPP 55 – Remediation of Land'*
- Western Australia Department of Health (2021) *'Guidelines for the assessment, remediation and management of asbestos contaminated sites'*
- NSW EPA (2022) *'Contaminated Land Guidelines, Sampling design part 1 – application'* and *'Contaminated Land Guidelines, Sampling design part 2 – interpretation'*

2. SITE DETAILS

2.1. Location

The site details are as follows:

Street address:	253-267 Aldington Road, Kemps Creek, NSW 2178 (**Attachment 1**)
Identifier:	Lot 9 DP 253503
Local Government:	Penrith City Council
Owner:	Icon Oceania Kemps Development Pty Ltd
Site Area:	Approximately 10.15 ha
Zoning:	IN1: General Industrial under State Environmental Planning Policy (Industry and Employment) Amendment (Western Sydney Employment Area) 2024 with a strip of land zoned SP2: Infrastructure on the eastern boundary fronting Aldington Road

The site is rectangular in shape and is bound by Aldington Road to the east. Surrounding rural properties bound the site to the north, south and west.

2.2. Adjacent Uses

The site is located within the Western Sydney Employment Area (WSEA) which has been designated by the NSW government for future employment land since 2014. The site is also located within the Mamre Road Precinct (MRP) which was rezoned for commercial/industrial land uses in 2020. The land use immediately surrounding the site is farm and pastoral. Commercial/industrial developments are underway to the north and south within the MRP.

Other than general agriculture within the site and surrounds, none of the adjacent land uses appear likely to have impacted the site from a contamination perspective. Other than rural residential properties, no local sensitive receptors have been identified. Dams are located on the site and adjacent rural properties, with surface water draining into dams and Kemps Creek located approximately 500 m southwest of the site.

2.3. Site Condition

The site is rectangular with dimensions of approximately 160 m by 630 m. The primary frontage is along the eastern boundary with Aldington Road. At the time of the PSI and DSI in 2021, the site was occupied by a residential house, sheds, internal dirt roads, three dams and pastoral and market garden agricultural areas. The site topography is undulating in parts but longitudinally falls slightly from a RL of 54.00 at Aldington Road in the east to a RL of 44.00 at the western boundary. The site also falls north to south. The site contains a 60.96 m wide Transgrid electricity easement which runs north to south through the eastern portion of the site. There is presently no high voltage transmission line infrastructure present within the easement. The features and the topography are shown in the survey provided as **Attachment 2**.

The PSI states the house was constructed of brick with the eaves constructed of potential asbestos containing material (ACM). No fill platform was evident beneath the house. A large metal shed located to the rear of the house was constructed on concrete hardstand and was used to store vehicles and lawn maintenance equipment. A concrete driveway led from Aldington Road to the house but the remainder of the internal roads comprised dirt with gravel and cobbles, graded aggregate or recycled aggregate containing demolition waste including bricks terracotta and porcelain. A septic tank was observed to the

rear of the house, however the associated transpiration pit was not obvious. An underground storage tank (UST) (with unknown contents but likely associated with the septic tank rather than fuel storage) was located approximately 17 m northwest of the septic tank. The top of the tank was observed as open and was covered by a metal grate. A pipe leading from the septic tank to the opening in the underground tank was observed.

The PSI states that two timber power poles were observed adjacent to the eastern dam. A small metal pump house containing an electric powered pump was located adjacent to the eastern dam. Several animal pens, derelict vehicles, caravans, and small metal sheds were located around the market gardens with some appearing derelict. The sheds and caravans still in use were being utilized for the storage of equipment chemicals and amenities for the market garden workers.

The PSI states several chemical mixing areas and chemical application spray packs were located adjacent to market gardens. No signs of spills were evident. Containers in these areas were labeled with the broad acre herbicide Shirquat (paraquat as dichloride). Areas of dead weeds (likely sprayed) were observed along the boundaries of market garden areas. The dams appeared turbid with minor algal growth observed on the surface of the water. Observed fill areas comprised fill platforms between dams, dam walls, with minor areas of fill observed on the surface. Materials such as timber, metal drums, metal beams and other building materials were stored mostly in the southeast. Much of the site was covered with grass or market gardens with other areas inundated with water which prevented access and inspection of the ground surface.

Features identified by the PSI are shown on **Attachment 3.**

2.4. Proposed Development

SSD-23480429 seeks approval for the staged development of the site as an industrial estate (for warehouse and distribution purposes). The proposed development includes demolition and removal of existing rural residential structures including removal of farm dams. Bulk earthworks require importation of 127,250 m³ of fill and construction of retaining walls.

Construction of two internal roads (Access Road 1 and Access Road 2) is proposed and construction/widening of Aldington Road along the entire eastern frontage of the site (in conjunction with surrounding landowners). Subdivision of the site is proposed into two Torrens title allotments along with a road reserve lot for the widening of Aldington Road and provisioning for the road reserve, Access Road 1 and Access Road 2 for dedication to Council as the local road authority.

Ancillary development includes car parking, landscaping, utility infrastructure and services, connection and stormwater management including below ground onsite detention of stormwater.

The landscape master plan showing the proposed site layout is provided as **Attachment 4**.

The proposed development is considered to fall within a ‘commercial/industrial use’ exposure scenario.

3. SITE HISTORY

The PSI provided a summary of the site history based on historical title deeds, aerial photographs, NSW EPA records, SafeWork NSW dangerous goods records, Council records and Planning Certificates. A search of online newspaper articles and Government Gazettes (Trove.nla.gov.au) was also completed by DP and results documented in the PSI. The site history discussed in the RAP also considered any change in site use since 2021 when the summary in the PSI was prepared.

The site appears to have been used for pastoral land use until the 1980s/1990s when the residence was constructed, changing the use to rural residential land combined with pastoral and market garden land use.

The three dams along a drainage line to Kemp's Creek have undergone construction and expansion works since the early 1960s which included the likely filling of areas of the drainage line. DP report in the RAP that a stockpile of refuse was observed within the central dam in 2024 and appeared to have been sourced from the southern site boundary.

Several large ground disturbances are observed in the historical aerial photographs indicating potential fill areas. Several structures including small sheds and large greenhouses have been constructed and since removed in the southeast and centre of the site presenting the potential for impact resulting from stored or applied chemicals and potentially hazardous building materials. The residential building in the southeast was demolished in 2025.

Site history information suggests that the site was acquired by the current owner in 1993.

3.1. Auditor's Opinion

The site history is broadly understood and includes pastoral and market garden uses. Uncertainties include details around specific land use activities, filling of land and demolition of structures. These uncertainties have been addressed by the investigations and the remediation framework.

4. CONTAMINANTS OF CONCERN

The PSI identified sources (S) and contaminants of potential concern (COPC). These are extracted from the PSI and presents as follows:

- S1: Fill: Associated with the construction of dams, levelling, demolition of former buildings and potential burying of waste.
  - COPC include metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene (BTEX), polycyclic aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB), organochlorine pesticides (OCP), phenols and asbestos.
- S2: Current buildings: hazardous building materials.
  - CoPC include asbestos, synthetic mineral fibres (SMF), lead (in paint), and PCB. Zinc and nickel (in metal construction materials) are also a noted potential contaminant with older sheds.
- S3: Pesticide and herbicide application from market garden use:
  - COPC include metals, OCP, organophosphate pesticides (OPP) and paraquat
- S4: Timber Power Poles: Potential contamination related to the leaching of timber treatment chemicals into the surrounding soils.
  - CoPC include metals and PAH.
- S5: Chemical Storage: potential contamination associated with the storage and spills of chemicals and fuels.
  - CoPC include metals, TRH, BTEX, PAH, PCB, OCP, OPP, phenols
- S6: USTs and associated pipework and pump likely associated with the septic system.
  - COPC include lead, zinc, TRH, BTEX, PAH, nutrients, and faecal coliforms.
- S7: Transpiration pits: potential contamination associated with potential asbestos-containing pipes used in transpiration pit, potential nutrient overload from treated septic water and disposal area for wastes.
  - CoPC include metals, TRH, BTEX, PAH, OCP, asbestos and nutrients.
- S8: Dams: Potential receptors of waste and nutrient build up.
  - CoPC include metals, TRH, BTEX, PAH, OCP, paraquat and nutrients.
- S9: Buried asbestos pipes from historical agricultural land use.
  - CoPC include asbestos.

DP note in the RAP that the PSI and DSI were completed prior to PFAS being identified as a COPC for agricultural sites. Due to the relatively small site and the unlikelihood of biosolids being applied to the site, DP consider that there is a low potential for PFAS contamination. However, limited sampling for PFAS as a screen has been included in the data gap assessment in the RAP in areas where chemical mixing occurred (AEC3) and the transpiration pit (AEC5).

4.1. Auditor's Opinion

The COPC are consistent with the site history and observations reported by DP. The analyte list used by DP adequately reflects the COPC. The Auditor agrees that the potential for significant PFAS contamination at the site is low based on the site history.

5. STRATIGRAPHY AND HYDROGEOLOGY

5.1. Stratigraphy

The PSI referenced geological maps and reported that the site is underlain by Bringelly Shale. Intrusive investigations completed during the PSI, DSI and geotechnical investigation encountered topsoil (fill) to depths of between 0.2 to 0.8 m. The topsoil was underlain by fill in most test pit locations investigated for the PSI (noting these were generally positioned to target areas of known or potential fill). The fill ranged in depth from 0.5 m to 3 m across three areas (Fill Areas 1 to 3, **Attachment 5**) and included anthropogenic material (brick, wood, concrete, glass, and tile) at TP1, TP2, TP3 and TP4 (Area 1) which targeted the filled area around the eastern dam (**Attachment 6**). Fragments of ACM were observed at the surface and in subsurface fill in TP4 and on the ground surface of an internal Road at TP7 (**Attachment 6**).

The areas of fill and previously inaccessible area were further assessed for the DSI which identified six different types of fill, within Fill Area 1, generally comprising silty clay with variations in colour, gravel and cobble type and the presence of foreign materials. Asbestos and demolition waste were identified in three of the six types of fill within Fill Area 1. The DSI states there were no signs of foreign materials in Fill Area 2 and Fill Area 3 or the areas that were inaccessible during the PSI. The fill was underlain by residual clay and shale.

5.2. Hydrogeology

A tributary of the upper reaches of Kemps Creek intersects the site (flowing northeast to southwest) with three dams located along the watercourse. The tributary is non-perennial whereas Kemps Creek located approximately 500 m southwest of the site is perennial. Kemps Creek flows generally north towards the confluence of South Creek approximately 2.5 km northwest of the site.

DP completed a search of the publicly available registered groundwater board database in January 2025 which indicated that there are no registered groundwater bores within 1 km of the site. Based on the regional topography and the inferred flow direction of nearby water courses, the anticipated flow direction of groundwater beneath the site is to the southwest towards Kemps Creek which is the likely receiving surface water body for the groundwater flow path. DP state in the PSI that given the local geology (Bringelly shale) the groundwater in the fractured rock beneath the site is anticipated to be saline and very low yield. Accordingly, there would be no significant potential beneficial uses of the groundwater.

Assessment of groundwater conditions at the site has not been completed. The PSI states that groundwater was observed at a depth of between 2 and 3 metres below ground level (mbgl) in four test pits (TP11, TP14, TP17 and TP18) during excavation. Similarly, groundwater was observed in several test pits at depths of between 0.7 mbgl (TP106) and 3 mbgl (TP127) during the DSI.

5.3. Auditor's Opinion

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

The shallow formation underlying the site is of low permeability and therefore the potential for significant groundwater contamination or migration of contamination is low. Given that significant soil contamination with the potential to leach to groundwater has not been identified at the site (see **Section 8**), the Auditor is satisfied that intrusive assessment of groundwater is not required.

6. EVALUATION OF QUALITY ASSURANCE AND QUALITY CONTROL

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

Table 6.1: Summary of Investigations

Investigations	Field Investigations	Analytical Data Obtained
PSI *Fieldwork May 2021*	28 x surface samples from market garden areas (MG1 to MG28) composited into 9 x 3-part composite samples for analyses (Comp 1 to Comp 9) 19 x test pits targeting fill areas and 1 x surface sample (fill platforms, ground disturbances, potential filled creek line, driveways) (TP01-TP18 and TP6A and SS7). Soil sampling completed from 14 test pits and the surface sample (TP1 to TP6, TP6a, TP7, TP10, TP14, TP15, TP16, TP17, TP18, SS7). Test pits TP8, TP9, TP11, TP12 and TP13 completed for geotechnical purposes (untargeted/general site background areas) 2 x surface samples targeting power poles (SS1 and SS5) 4 x surface samples targeting chemical mixing/storge areas (SS2, SS8, SS9 and SS10) 2 x surface samples targeting shed footprints (SS3 and SS4) **Attachment 6** (combined PSI and DSI locations shown on **Attachment 7**)	Soil from test pits: 19 x metals, OCPs and PAH, 11 x TRH, BTEX, 3 x phenols and 23 x asbestos (15 x 50 g samples and 8 x 500 mL samples) Surface soil samples: 10 x metals, PAH, TRH, BTEX, OCPs, OPPs, PCBs, 2 x phenols, 4 x asbestos (50 g samples) Composite soil samples: 9 x metals and OCPs
DSI *Fieldwork November 2021*	40 x test pits targeting the three areas of fill identified by the PSI and data gaps as follows: • Fill Area 1 - 21 x test pits (TP122-TP124, TP126-TP143 • Fill Area 2 – 6 x test pits (TP116-121) • Fill Area 3 – 4 x test pits (TP112-TP115) • Previously inaccessible area (former green house) – 5 x test pits (TP103-TP105, TP144, TP145) • Previously inaccessible area (paddock) – 4 x test pits (TP106-TP108, TP125) Field screening of 10 L bulk soil samples for ACM was completed with 53 samples screened from 31 locations. 3 x surface water samples (one from each of the three dams) (D1-D3) 1 x surface water sample was collected from surface water that has accumulated in the excavation containing the UST near the septic system (D4) **Attachment 5** (combined PSI and DSI locations shown on **Attachment 7**)	Soil: 58 x metals, 31 x TRH, BTEX, 27 x PAHs, 4 x phenols, 29 x OCPs, OPPs, PCBs and 46 x asbestos (32 x 50 g and 14 x 500 mL samples) Surface water: 4 x metals, TRH, BTEX, PAHs, phenols, total phosphorous, total nitrogen, ammonia, turbidity, pH and electrical conductivity and Paraquat.

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 **Table 6.2** and **Table 6.3**.

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

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
Data Quality Objectives (DQO) DP defined specific DQOs in accordance with the seven-step process outlined in Schedule B2 of NEPM (2013). The "Problem" is defined in the PSI and DSI as *"The objective of the investigation is to investigate the contamination status of the site with respect to the proposed land use."* The PSI and DSI define the "Decision" as *"The site history has identified possible contaminating previous uses … The decision is to establish whether or not the results fall below the site assessment criteria or whether or not the 95% upper confidence limit of the sample population falls below the site assessment criteria. On this basis an assessment of the site's suitability from a contamination perspective and whether or not further assessment and or remediation will be derived."*	The DQOs were consistent with the Auditor's understanding of the project objectives and provided an adequate basis to inform the investigation scope of works.
Sampling pattern, locations, density and depth Soil investigation locations targeted areas of concern identified based on the site history and observations during DP's site inspection and also provided general coverage across the site. Surface sampling was undertaken from areas where top-down impacts would be expected. Surface samples were collected for an approximate depth range of 0-0.15 m. Ten samples were collected from former chemical/fuel locations. Nine (3-part) composite samples were collected from across the market gardens from 28 separate grid-based sample locations in accordance with NSW DECC (2005). The PSI states the total area of the market gardens to be approximately 5 hectares. Therefore, the Auditor notes the achieved sample density is approximately half the minimum number of sampling points for a square grid, based on site area recommended by NSW EPA (2022) (as well as the NSW EPA (1995) Sampling Design Guidelines which were valid at the date of the PSI). Test pitting was conducted in areas of fill to a maximum depth of 3 mbgl for the PSI and DSI. Fill was penetrated to natural material in all locations except TP3 (**Attachment 6**). Samples from test pits were collected from the surface (0-0.2 m), 0.2-0.5 m and when fill was encountered from regular depth intervals based on field observations. The sample densities for the PSI and DSI combined were as follows (**Attachment 7**): • Fill Area 1 – 21 x test pits over ~1 ha (equates to the recommended minimum from both NSW EPA (2022) and the former NSW EPA (1995) guidelines) • Fill Area 2 – 6 x test pits over ~0.12 ha (equates to the recommended minimum from the former NSW EPA (1995) guidelines and is slightly lower than NSW EPA (2022) which recommends 8) • Fill Area 3 – 4 x test pits over ~0.23 ha (approximately half the recommended minimum from the former NSW EPA (1995) guidelines and NSW EPA (2022)) One surface water sample was collected from each of the three dams from the top of the water column. One surface water sample was collected from surface water that had accumulated in the excavation containing the UST near the septic system. DP observed a sheen on the surface of the water and a slight hydrocarbon odour.	The sampling pattern, locations, density and depth were adequate based on the site history and observations to characterise the site for the purpose of remedial planning. The Auditor is of the opinion sample density for asbestos across the site was generally not adequate for asbestos quantification in relation to WA DoH (2012) which recommends double the density recommended in NSW EPA (2022). Therefore, asbestos detections were considered on a presence/absence basis within a weight of evidence framework. This is consistent with the proposed remediation framework. The RAP (and DSI) also identifies potential data gaps associated with the area surrounding the caravan near TP7, timber power poles (following decommissioning), chemical storage and mixing areas, the underground tank near the septic system, the transpiration pit and building footprints that will require further assessment during remediation once the structures can be removed. This includes testing of surface soils in the chemical storage areas for paraquat as dichloride based on observations during the PSI that the broadacre herbicide Shirquat (active ingredient paraquat) has been used at the site. The RAP (and DSI) notes that no asbestos pipes were identified at the site. However, due to the rural land use it was considered possible by DP that buried asbestos pipes are present and may become apparent during bulk earthworks or remediation works and would normally require remediation under an unexpected fines protocol. The Auditor agrees and notes that additional areas of fill containing ACM and/or other unexpected finds of ACM may also be encountered during bulk earthworks and/or remediation. The associated uncertainty is to be managed by an unexpected finds protocol (UFP). This is adequate.

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
Sample collection method Soil samples from test pits were collected directly from the excavator bucket. Surface samples were collected using hand tools. Bulk 10 L soil samples were field screened for asbestos through a 7 mm aperture sieve. Each bulk sample was weighed, and the mass of any ACM collected on the sieve were weighed to allow calculation of the percentage of ACM by weight. Soil samples from the market garden were composited by the laboratory which involves thoroughly mixing a sub sample of each of the component samples into one new sample. All composite samples were from the surface strata at a depth of 0.15 m and consisted of adjacent samples with the COPC being not volatile in accordance NSW DECC (2005). Surface water samples were collected using a telescopic pole and sample container, by immersing the sample container at least one metre below the surface with the opening pointing directly down to maintain a volume of air in the container thereby avoiding the collection of any surface films. Once under the surface of the water the sample was turned upright to allow collection of the sample.	The sample collection methodologies were adequate for the COPC.
Decontamination procedures The PSI and DSI indicate new nitrile gloves were used for collection of each sample. Surface water samples were collected using a sample container that was decontaminated between sample locations.	Neither the PSI nor DSI discuss other forms of decontamination. However, soil sampling was from excavator buckets or collected using hand tools and the risk of significant cross contamination is low considering the data set reviewed. Overall adequate.
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. It is not reported in the DSI if surface water samples were field filtered.	Adequate. It is unclear is surface water samples for analysis for metals and ammonia were field fileted. Therefore, there is the potential for over or under reporting of concentrations. This has been considered when interpreting results.
Chain of Custody (COC) Completed chain of custody forms were provided in the PSI and DSI.	Adequate.
Detailed description of field screening protocols Field screening using a photoionisation detector (PID) does not appear to have been undertaken for the PSI or DSI. Field measurement of surface water quality parameters during the DSI does not appear to have been completed.	The absence of PID screening is acceptable based on the low likelihood of volatile contamination based on the site history. Also, the absence of field parameters for surface water is not material in the context of the scope of works and outcomes. Overall adequate.
Calibration of field equipment Not applicable.	As above.
Sampling logs Test pits logs are provided in the PSI and DSI indicating sample depth, lithology and observations. A sample register was not provided for the surface samples collected for the PSI. However, the date and depth of samples are recorded on the COCs and in the analytical results tables. Field records for the surface water sampling were not provided. Representative photographs of field observations and test pits were included in the PSI.	The absence of surface water sampling records is an omission, however, is not material in the context of the scope of works and outcomes. Overall adequate.

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

Field and Lab QA/QC	Auditor's Opinion
Field quality control samples and results Field quality control samples including field intra-laboratory (PSI and DSI) and inter-laboratory (DSI only) duplicates were undertaken. Results were within acceptable control limits except for some slightly elevated RPDs for some metals attributed to low concentrations and heterogeneity in the soil matrix. No trip blanks or wash blanks were analysed.	The absence of trip blanks and wash blanks is acceptable given that volatile contaminants were not likely to be of concern and minimal decontamination was likely to have been required. The absence of inter-laboratory duplicates for the PSI is not ideal. However, overall, in the context of the site history (low potential for significant chemical contamination) and the data set reviewed, is not considered significant. Furthermore, the laboratory (EnviroLab) is NATA accredited to ISO17025 (Accreditation No 2901) and are required to undertake external proficiency testing by NATA to maintain this accreditation. Overall adequate.
NATA registered laboratory and NATA endorsed methods Laboratories used included: Envirolab (primary) for the PSI and DSI, ALS (secondary) for the DSI. The laboratories are NATA accredited for the analysis performed and the certificates were NATA stamped.	Adequate.
Analytical methods Analytical methods were included in the laboratory test certificates. Asbestos identification was conducted using polarised light microscopy with dispersion staining by method AS4964-2004 *Method for the Qualitative Identification of Asbestos Bulk Samples*. Assessment of a 500 mL sample to achieve a lower detection limit (as per NEPM (2013)) is not in accordance with the Australian Standard.	Adequate.
Holding times Review of the COCs and laboratory certificates indicate that the holding times had been met. The PSI and DSI also reported that holding times were met.	Adequate.
Laboratory Limits of Reporting (LORs) LORs were less than the threshold criteria for the key contaminants of concern. It is noted that the limit of detection for asbestos in soil is NATA accredited to 0.01% w/w (50 g samples). The NEPM (2013) methodology of assessing a 500 mL samples to achieve a 0.001% w/w detection limit is not NATA accredited.	Overall, the soil LORs are acceptable. 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.
Laboratory quality control samples Laboratory quality control samples included laboratory control samples, matrix spikes, surrogate spikes, blanks, internal standards and duplicates. Results were within acceptable control limits.	Adequate
Data Quality Indicators (DQI) and Data Evaluation (completeness, comparability, representativeness, precision, accuracy) Predetermined data quality indicators (DQIs) were set for laboratory analysis 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. DP concluded that *"Based on the results of the QA and field and laboratory QC, and evaluation against the DQIs it is concluded that*	An assessment of the data quality with respect to the five category areas has been undertaken by the Auditor and is summarised in **Section 6.1** below.

Field and Lab QA/QC	Auditor's Opinion
the field and laboratory test data attained are reliable and usable for this assessment."	

6.1. Auditor's Opinion

The data is of adequate completeness, comparability, representativeness, precision and accuracy for remediation planning.

The sample density for asbestos across the site was generally not sufficient for asbestos quantification in relation to WA DoH (2021) which recommends double the density recommended in NSW EPA (2022). Therefore, asbestos detections were considered on a presence/absence basis within a weight of evidence framework. This is consistent with the proposed remediation framework.

Due to the rural land use, it was considered possible by DP that unidentified buried asbestos pipes are present and may become apparent during bulk earthworks or remediation works and would normally require remediation under an unexpected fines protocol. The Auditor agrees and notes that additional areas of fill containing ACM and/or other unexpected finds of ACM may also be encountered during bulk earthworks and/or remediation. The associated uncertainty is to be managed by an unexpected finds protocol (UFP) during the development. The Auditor is of the opinion this is adequate.

The DSI also identified potential data gaps associated with the footprints of potential point sources of contamination including the area surrounding the caravan near TP7, timber power poles, chemical storage and mixing areas, the market garden area, the underground tank near the septic system, the transpiration pit and building footprints. These data gaps are proposed to be addressed by the RAP after the structures can be removed.

7. ENVIRONMENTAL QUALITY CRITERIA

Assessment criteria are the concentrations of a contaminant above which further appropriate investigation and evaluation will be required and provide the basis of a Tier 1 risk assessment. As defined in NEPM (2013), a Tier 1 risk assessment is a risk-based analysis comparing site data against generic assessment criteria for various land uses to determine the need for further assessment or development of an appropriate management strategy.

Assessment criteria are developed for the protection of human health and ecological receptors, for a range of media including soil, groundwater (and surface water) and soil vapour. When selecting appropriate criteria for this Audit, a commercial/industrial exposure scenario has been adopted. Based on the stratigraphy reported by DP in the PSI and DSI, a clay soil type has been adopted. Other key assumptions used when selecting appropriate criteria are related to the proposed development (**Section 2.4**) and include:

- All future structures are constructed at grade (i.e., no basements or underground levels)
- Bulk earthworks are to occur during development including a net import of fill
- Groundwater is not a media of concern as discussed in **Section 5.3**
- Surface water was assessed to inform a dam management strategy for decommissioning during development. The dams are not anticipated to remain at the site.

The adopted criteria for soil and surface water are described in **Sections 7.1 to 7.3** and the adopted values are presented in the data summary tables in **Sections 8 to 9** where relevant.

7.1. Soil Assessment Criteria

The Auditor has adopted assessment criteria from the following sources:

- NEPM (2013) Health Investigation Levels (HILs) for 'Commercial/Industrial' (HIL-D) land use. These were divided by three (the number of sub-samples) when assessing the data for composite samples.
- NEPM (2013) Health Screening Levels (HSLs) for 'Commercial/Industrial' (HSL-D) land use. The HSLs assumed a clay soil type. Depth to source adopted was <1 m as an initial screen.
- NEPM (2013) Management Limits (MLs) for petroleum hydrocarbons for 'Commercial/Industrial' land use and assuming fine soil texture. Criteria are relevant for operating sites where significant sub-surface leakage of petroleum hydrocarbons has occurred and when decommissioning industrial and commercial sites. Therefore, these are considered as screen only in the context of the site.
- Asbestos was considered on a presence/absence basis within a weight of evidence framework. NEPM (2013) HSLs for AF/FA have also been considered when samples were collected and analysed in accordance with NEPM (2013).
- NEPM (2013) Ecological Screening Levels (ESLs) for 'Commercial/Industrial' land use, assuming coarse soil.
- NEPM (2013) Ecological Investigation Levels (EILs) for 'Commercial/Industrial' land use. In the absence of site-specific soil data on pH, clay content, cation exchange capacity and background concentrations, the published range of the added contaminant limits have been applied as an initial screen.
- Canadian Council of Ministers of the Environment (CCME) (2010) *Canadian soil quality guidelines: carcinogenic and other polycyclic aromatic hydrocarbons (PAHs)* soil quality guideline (SQG) for benzo(a)pyrene for 'Commercial/Industrial' land use. The SQG has been adopted in place of the NEPM (2013) ESL as it is based on a larger and more up-to-date toxicity database than the low reliability NEPM (2013) ESL.

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

7.2. Surface Water Assessment Criteria

The Auditor has adopted assessment criteria from the following sources:

- NHMRC (2011) ADWG, Version 3.9 Updated December 2024.
- NHMRC (2008) GMRRW. The GMRRW indicates that a qualitative assessment of recreational use can be undertaken using 10 times the concentrations of chemicals stipulated in the ADWG. This is based on an assumed contribution for swimming equivalent to 10% of drinking water consumption. This adjustment only accounts for a reduced intake of groundwater, and therefore can only be applied to criteria derived based on health considerations and cannot be applied to criteria derived for aesthetic reasons (e.g. copper). The adjustment should also not be applied to volatile compounds (e.g. benzene) where inhalation is the primary pathway of concern. Where a 'health-based' and an 'aesthetic-based' criteria is provided, the 'health-based' criteria was adopted.
- ANZG (2018) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.* Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia (www.waterquality.gov.au/anz-guidelines). Criteria for freshwater water and 95% level of protection were adopted.
- ANZECC & ARMCANZ (October 2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Volume 3, Primary Industries - Rationale and Background Information.* Irrigation values for long- and short-term use.

7.3. Consultants Assessment Criteria

The environmental quality criteria referenced by the Auditor are largely consistent with those adopted by DP. However, DP adopted site specific ecological criteria using an average cation exchange capacity (16.87 $cmol_c/kg$) and pH based on site specific analytical results and an estimated clay content of 20% based on soil composition from similar sites. The differences between the Auditor's and DP's criteria were minor and did not have a material bearing on outcomes.

8. EVALUATION OF SOIL RESULTS

A combination of targeted and systematic test pitting and surface sampling was undertaken for the PSI and DSI. This included 62 test pits targeting fill and providing general coverage, 9 (3 part) composite surface sample locations across market garden areas, and 11 surface sample locations targeting potential point sources such chemical mixing areas, power poles and sheds as described further in **Section 6**. The sample locations for the PSI and DSI combined are shown on **Attachment 7**.

8.1. Analytical Results

Soil samples from the PSI and DSI including the nine composite samples were analysed for the COPC, and results have been assessed against the environmental quality criteria and summarised in **Table 8.1**. Results are predominantly for samples of topsoil and fill, and to a lesser extent, natural materials (where these were sampled). The combined sampling locations are presented on **Attachment 7**.

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

Analyte	n	Detections	Maximum	n > Human Health Screening Criteria	n > Terrestrial Ecological Screening Criteria
ACM >7 mm	66	**5**	**0.510%**	**5 Detected 2 above HSL D 0.05%**	-
AF/FA (500 mL sample)	22	0	Not detected	0 above HSL 0.001%	-
Asbestos (presence/absence)	49	0	Not detected	-	-
ACM Fragments	3	**3**	**Detected**	-	-
Benzene	53	0	<0.2	0 above HSL D 0-1 m, clay 4 mg/kg	0 above ESL (commercial/industrial) (fine) 95 mg/kg
Toluene	53	0	<0.5	0 above HSL D 0-1 m, clay NL	0 above ESL (commercial/industrial) (fine) 135 mg/kg
Ethylbenzene	53	0	<1	0 above HSL D 0-1 m, clay NL	0 above ESL (commercial/industrial) (fine) 185 mg/kg
Total Xylenes	53	0	<1	0 above HSL D 0-1 m, clay NL	0 above ESL (commercial/industrial) (fine) 95 mg/kg
F1 (TRH C_6–C_{10} minus BTEX)	53	0	<25	0 above HSL D 0-1 m, clay 310 mg/kg	0 above ESL (commercial/industrial) 215 mg/kg
F2 (TRH >C_{10}–C_{16} minus naphthalene)	53	0	<50	0 above HSL D 0-1 m, clay NL	-
TRH C_6–C_{10}	53	0	<25	0 above ML (commercial/industrial) 800 mg/kg	-
TRH >C_{10}–C_{16}	53	0	<50	0 above ML (commercial/industrial) 1000 mg/kg	0 above ESL (commercial/industrial) 170 mg/kg
TRH >C_{16}-C_{34}	53	2	810	0 above ML (commercial/industrial) 5000 mg/kg	0 above ESL (commercial/industrial) 2500 mg/kg
TRH >C_{34}-C_{40}	53	2	600	0 above ML (commercial/industrial) 10,000 mg/kg	0 above ESL (commercial/industrial) 6600 mg/kg
Naphthalene	54	0	<1	0 above HSL D 0-1 m, clay NL	0 above EIL (commercial/industrial) 370 mg/kg
Benzo(a)pyrene	54	13	2.5	-	0 CCME SQG (commercial/industrial) 72 mg/kg
Benzo(a)pyrene TEQ	54	13	4	0 above HIL D 40 mg/kg	-
Total PAHs	54	13	46	0 above HIL D 4000 mg/kg	-
Total Phenols	7	0	<5	0 above HIL D 240,000 mg/kg	-

Analyte	n	Detections	Maximum	n > Human Health Screening Criteria	n > Terrestrial Ecological Screening Criteria
Arsenic	105	97	26	0 above HIL D 3000 mg/kg	0 above EIL (commercial/industrial) of 160 mg/kg
Cadmium	105	3	6	0 above HIL D 900 mg/kg	-
Chromium	105	105	28	0 above HIL D 3600 mg/kg	0 above most conservative ACL (commercial/industrial) 310 mg/kg
Copper	105	105	140	0 above HIL D 240,000 mg/kg	0 above ACL (commercial/industrial) 140 mg/kg
Lead	105	105	250	0 above HIL D 1500 mg/kg	0 above generic ACL (commercial/industrial) 1800 mg/kg
Mercury	105	4	0.5	0 above HIL D 730 mg/kg	-
Nickel	105	95	34	0 above HIL D 6000 mg/kg	0 above most conservative ACL (commercial/industrial) 55 mg/kg
Zinc	105	105	**530**	0 above HIL D 400,000 mg/kg	**3 above ACL (commercial/industrial) 270 mg/kg**
PCB	31	0	<0.1	0 above HIL D 7 mg/kg	-
OCP	60	0	<0.1	0 above HIL D	0 above EIL
OPP	31	0	<0.1	0 above HIL D	-

n number of samples
- No criteria available/used
NL Non-limiting

Concentrations of metals were generally low and were consistent with typical background levels for the rural setting. Concentrations of organic contaminants were not detected above the LOR except for some minor concentrations of TRH and PAHs well below the site assessment criteria.

Results for composite samples analysed for metals, OCPs and OPPs were also below the adjusted assessment criteria, which are divided by three to account for compositing.

Asbestos was detected in 10 L bulk soil samples at TP4/0.1-0.2 m, TP4/0/5-0.6 m, TP131/0.5-0.6 m, TP137/0.0-0.1 m and TP142/0.0-0.1 m. Asbestos was detected in a material sample (fragment) collected from TP142. These test pits are located within Fill Area 1 around the eastern dam. Asbestos was also detected in an ACM fragment collected from TP7 on the surface of the internal road. The test pit locations where asbestos was detected are shown on **Attachment 5**.

Asbestos fines/fibrous asbestos (AF/FA) was not detected in any of the 500 mL samples analysed.

Other contaminants of potential concern were not detected above the SAC, including metals and pesticides associated with market garden activities. However, further assessment of the timber power poles was recommended by DP "*based on DP's experience with timber power poles, potential contamination to surrounding soils is not evenly distributed, therefore, the potential remains for contamination to fill surrounding the poles*."

The UST near the septic system, the transpiration pit, building/shed footprints and the potential for unexpected finds including asbestos pipes were also identified as requiring further consideration after

removal of these structures during decommissioning and remediation. Assessment for the specific herbicide Shirquat (active ingredient paraquat as dichloride) was also identified as a data gap.

8.2. Observation of Fill

The PSI states that *"Based on the results of the site walkover and field investigations,* [three] *significant fill areas* [Fill Areas 1 to 3] *were identified, predominantly surrounding the dams on site, and beneath roads, with fill reported to depths ranging between 0.8 m to greater than 3 m bgl in fill platforms/walls surrounding dams, and shallower fill (ranging between 0.5 and 0.6 m bgl) in roadways. No fill was reported in test pits located on the edges of market gardens, however, due to the limited number of locations, further testing in areas where data is lacking is required to confirm this."*

Fill Areas 1 to 3 were further assessed as part of the DSI, along with previously inaccessible areas.

The DSI conclude that *"Given that the asbestos impact is (a) reported above the SAC; (b) is on the surface and in fill, and (c) is present across multiple fill types, it is considered that all fill in Fill Area 1 has the potential to be impacted with asbestos, and therefore requires management or remediation to consider the site suitable for the proposed development."*

The DSI concluded *"No fill or signs of contamination were reported in Fill Area 2, the location of the surface ACM reported along the internal road at TP7 (reported in DP, 2023). Therefore, it is considered that the ACM reported in this location is localised to the surface and not fill in that location. It is considered that the ACM was likely associated with the adjacent caravan (which was in disrepair and contained asbestos). It is also possible that the ACM is associated with the road base aggregate in this location, although no other signs of ACM were reported in this aggregate. Therefore, the validation of the footprint of the caravan and surrounds is required following removal from the site. Given that signs of potential contamination were absent in all remaining test pits/fill areas* [including Fill Area 3]*, the further assessment of these fill areas is considered unwarranted."*

8.3. Auditor's Opinion

The soil analytical results are consistent with the site history and field observations. The Auditor agrees with the conclusions made by DP as summarised in the above sections. In summary, the results indicate that fill impacted with asbestos is present in Fill Area 1. The potential for unexpected finds of fill and asbestos has been acknowledged by DP and will require management during remediation and earthworks. Further assessment of footprints of sheds, market garden areas, timber power poles and the UST and septic system structures have been proposed after decommissioning (including for the herbicide Paraquat in chemical mixing and storage areas). This is adequate.

9. EVALUATION OF SURFACE WATER RESULTS

A surface water sample was collected from each of the three dams (D1 to D3) during the DSI and from the surface water that accumulated in the excavation containing the UST near the septic system (D4) to assess water quality to inform requirements during dewatering and decommissioning. The surface water samples were analysed for the COPC, and results have been assessed against the environmental quality criteria and summarised in **Tables 9.1 and 9.2** extracted and modified from the DSI. Surface water sample locations are shown on **Attachment 7**.

Table 9.1: Evaluation of Surface Water Analytical Results – Metals and PAHs (µg/L)

		As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	B(a)P TEQ	B(a)P	Total PAH	Naphthalene
Practical Quantitation Limit		1	0.1	1	1	1	0.05	1	1	5	1	1	1
Unit		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZG (2018) - DGVs (95% protection)		13	0.2	3.3	1.4	3.4	0.06	11	8	ND	ND	ND	16
NEPM (2013) - Groundwater Investigation Levels (Freshwater)		13	0.2	1	1.4	3.4	0.06	11	8	ND	ND	ND	16
NHMRC, NRMMC 2011 - Drinking Water Guidelines (Health)		ND	2	50	2000	10	1	20	ND	ND	0.01	ND	ND
NHMRC (2008) - Recreational Water Guidelines		7	2	50	2000	10	1	20	3	ND	0.1	ND	ND
ANZECC & ARMCANZ 2000 - Irrigation Values Long/Short Term		100/2000	10/50	100/1000	200/5000	200/5000	2/2	200/2000	2000/5000	ND	ND	ND	ND
CRC CARE HSLs - Groundwater[2] HSL D Direct Contact		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1×10^7
D1	17.11.21	1	<0.1	<1	2	<1	<0.05	2	3	-	-	-	-
D2	17.11.21	<1	<0.1	<1	2	<1	<0.05	1	3	-	-	-	-
D3	17.11.21	2	<0.1	<1	3	<1	<0.05	1	2	-	-	-	-
D4	17.11.21	1	<0.1	1	180	4	<0.05	5	130	<5	<1	<1	<1
D4 - Silica Gel Cleanup	07.12.21	-	-	-	-	-	-	-	-	-	-	-	-

Table 9.2: Evaluation of Surface Water Analytical Results – TRH, BTEX, OCPs, OPPS and Paraquat (µg/L)

		C6-C10 less BTEX (F1)	C10-C16 less Naphthalene (F2)	>C16-C34	>C34-C40	Benzene	Toluene	Ethylbenzene	Total Xylenes	Phenol	Aldrin + dieldrin	Chlordane	DDT + DDE + DDD	Endosulfan	Endrin	Heptachlor	HCB	Methoxychlor	OPP (Chlorpyrifos)	Paraquat
Practical Quantitation Limit		10	50	100	100	1	1	1	2	0.05	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
Unit		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZG (2018) - DGVs (95% protection)		ND	ND	ND	ND	950	ND	ND	200	0.32	ND	0.03	ND	0.03	0.01	0.01	ND	ND	0.01	ND
NEPM (2013) - Groundwater Invetigation Levels (Freshwater)		ND	ND	ND	ND	950	ND	ND	200	ND	ND	0.03	ND	0.03	0.01	0.01	ND	ND	0.01	ND
NHMRC, NRMMC 2011 - Drinking Water Guidelines (Health)		ND	ND	ND	ND	1	800	300	600	ND	0.3	2	ND	20	ND	0.3	ND	300	10	ND
NHMRC (2008) - Recreational Water Guidelines		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3	10	20	30	ND	0.3	ND	300	10	0.03
ANZECC & ARMCANZ 2000 - Irrigation Values Long/Short Term		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NC	ND
D1	17.11.21	-	-	-	-	-	-	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1
D2	17.11.21	-	-	-	-	-	-	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1
D3	17.11.21	-	-	-	-	-	-	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1
D4	17.11.21	130	520	2900	240	<1	81	<1	<2	0.05	-	-	-	-	-	-	-	-	-	-
D4 - Silica Gel Cleanup	07.12.21	-	140	110	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

The samples were also analysed for nutrients and elevated nutrient loads were also identified for all surface waters tested.

The DSI concluded *"Despite the minor exceedance of copper in D1 to D3, the analytical results suggest that surface water held in the on-site dams (D1 to D3) has not been significantly impacted by organic contaminants, metals, TRH, PAH, OCP, OPP, PCB, phenol or VOC (including BTEX). However, the water held in the UST excavation (D4) contains elevated ammonia, copper, lead and zinc. Given the above, the water retained in the on-site dams and within the UST excavation is unsuitable for discharge into the environment. Therefore, a dam dewatering plan (utilising the results obtained during this assessment) is required prior to the discharge of water from the dams on site... These results* [for D4] *indicate that while there may be some concentrations of hydrocarbons in the water, most appear to be associated with non-petroleum hydrocarbons. Additionally, given the high concentrations of metals... in the UST excavation* [D4]*, the water is also not suitable for discharge into the environment, with the*

most likely form of management of this water comprising treatment, disposal or discharge into the sewer (pending approval from the relevant authorities) or via a licensed liquid waste removal contractor."

9.1. Auditor's Opinion

The Auditor agrees a dam dewatering plan and management of water within the UST excavation is required. This should include assessment of sediment to confirm suitability for use or disposal (as required).

10. EVALUATION OF CONCEPTUAL SITE MODEL

A conceptual site model (CSM) is a representation of the source, pathway and receptor linkages at a site. DP developed a CSM and used it iteratively throughout the site assessment to inform decisions around investigation and management requirements. The CSM presented in the RAP identifies asbestos as a source that could result in a complete exposure linkage and the data gaps as sources that could potentially results in complete linkages. Remedial/management actions are proposed by the RAP as discussed in **Section 11** to address these potentially complete linkages. The CSM is presented as **Table 10.1** extracted from the RAP.

Table 10.1: Conceptual Site Model

Source and COPC	Transport Pathway	Receptor	Risk Management Action
Identified			
AEC1: Fill surrounding the eastern dam Asbestos	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours	R1: Current users [residential and site workers R2: Future construction and maintenance workers R3: End users [industrial] R4: Adjacent site users [rural residential and agricultural].	Asbestos impacted fill requires remediation.
Potential			
AEC2: Timber Power Poles Metals, TRH and PAH	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours P3: Surface water run-off P4: Lateral migration of base flow to water bodies P5: Leaching of contaminants and vertical migration into groundwater P6: Contact with terrestrial ecology groundwater providing	R1: Current users [residential and site workers R2: Future construction and maintenance workers R3: End users [industrial] R4: Adjacent site users [rural residential and agricultural]. R5: Surface water [Kemps Creek and the three on-site dams]; R6: Groundwater; and R7: Terrestrial ecology.	Visual validation after power poles are removed and confirmatory sample analysis
AEC3: Chemical Storage and mixing areas Paraquat, metals, TRH, BTEX, OCP	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours P3: Surface water run-off P4: Lateral migration of groundwater providing base flow to water bodies P5: Leaching of contaminants and vertical migration into groundwater P6: Contact with terrestrial ecology	R1: Current users [residential and site workers R2: Future construction and maintenance workers R3: End users [industrial] R4: Adjacent site users [rural residential and agricultural]. R5: Surface water [Kemps Creek and the three on-site dams]; R6: Groundwater; and R7: Terrestrial ecology.	Paraquat: Additional sampling and analysis is required. Metals, TRH, BTEX, OCP: Visual validation of soils following the removal of structures/demolition of services and confirmatory sample analysis

AEC4: UST Lead, zinc, TRH, BTEX, PAH, nutrients, and faecal coliforms	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours P3: Surface water run-off P4: Lateral migration of groundwater providing base flow to water bodies P5: Leaching of contaminants and vertical migration into groundwater P6: Contact with terrestrial ecology	R1: Current users [residential and site workers R2: Future construction and maintenance workers R3: End users [industrial] R4: Adjacent site users [rural residential and agricultural]. R5: Surface water [Kemps Creek and the three on-site dams]; R6: Groundwater; and R7: Terrestrial ecology.	Visual validation of soils following the removal of structures/demolition of services and, confirmatory sample analysis. The water in the UST excavation is not suitable for discharge due to exceedances of the SAC for copper, zinc and nutrients. Prior permission must be sought by the relevant authority/authorities to discharge impacted (waste) waters to the sewer. Alternatively, it can be removed and disposed of as liquid waste
AEC 5: Transpiration pit Metals, asbestos and nutrients	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours P3: Surface water run-off P4: Lateral migration of groundwater providing base flow to water bodies P5: Leaching of contaminants and vertical migration into groundwater P6: Contact with terrestrial ecology	R1: Current users [residential and site workers R2: Future construction and maintenance workers R3: End users [industrial] R4: Adjacent site users [rural residential and agricultural]. R5: Surface water [Kemps Creek and the three on-site dams]; R6: Groundwater; and R7: Terrestrial ecology.	Visual validation of soils following the removal of structures/demolition of services and, confirmatory sample analysis
Building footprints Asbestos, metals, OCP, PCB	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours P3: Surface water run-off P4: Lateral migration of groundwater providing base flow to water bodies P5: Leaching of contaminants and vertical migration into groundwater P6: Contact with terrestrial ecology	R1: Current users [residential and site workers R2: Future construction and maintenance workers R3: End users [industrial] R4: Adjacent site users [rural residential and agricultural]. R5: Surface water [Kemps Creek and the three on-site dams]; R6: Groundwater; and R7: Terrestrial ecology.	Visual validation of soils following the removal of structures/demolition of services and, confirmatory sample analysis
Market Garden Areas – Potential for Fill Asbestos, metals, OCP, PCB	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours P3: Surface water run-off P4: Lateral migration of groundwater providing base flow to water bodies P5: Leaching of contaminants and vertical migration into groundwater P6: Contact with terrestrial ecology	R1: Current users [residential and site workers R2: Future construction and maintenance workers R3: End users [industrial] R4: Adjacent site users [rural residential and agricultural]. R5: Surface water [Kemps Creek and the three on-site dams]; R6: Groundwater; and R7: Terrestrial ecology.	Further visual assessment to confirm low potential for fill to be present.
Surface waters in on-site dams (discharge requirements) High nutrient load	P6: Contact with terrestrial ecology	R5: Surface water [Kemps Creek and the three on-site dams]; R6: Groundwater; and R7: Terrestrial ecology.	Waters are unsuitable for discharge. A de- watering plan informed by the results and findings of the DSI should be prepared prior to the discharge of any dam waters.

10.1. Auditor's Opinion

The CSM provides a reasonable representation of the contamination and uncertainties (data gaps) at the site and provides an adequate basis for assessing remedial requirements.

11. EVALUATION OF PROPOSED REMEDIATION

11.1. Remediation Required

Based on the CSM the RAP identifies the following requirements (**Attachment 8**):

- AEC1 – Remediation of ACM Impacted fill – COPC include asbestos
- AEC2 – Further validation of soils at base of the timber power poles (post removal) and remediation (if required) – COPC include metals, PAH and TRH
- AEC3 – Post demolition/removal, further investigation and remediation (if required) of soils within the footprint of the chemical storage and mixing areas – COPC include asbestos, metals, TRH, BTEX, PFAS, OCP and Paraquat
- AEC4 – post removal of the UST, further investigation and remediation (if required) of soils within the UST excavation pit – COPC include lead, zinc, TRH, BTEX, PAH, nutrients, and faecal coliforms
- AEC5 – Further investigation and remediation (if required) of soils within and surrounding the Transpiration pit – COPC include asbestos, nutrients and faecal coliforms
- Building footprints (including footprint of caravan area) – Post demolition/removal, further investigation and remediation (if required) of soils within the building footprints – COPC include asbestos, metals, OCP, PCB.
- Market Garden Areas - Further visual assessment for the presence or absence of fill across the market garden areas of the site. Where fill is observed, the COPC include asbestos, metals, OCP, PCB.
- Owing to the high nutrient load in surface water in on-site dams, a dewatering plan is required to effectively manage the surface water present in dams.

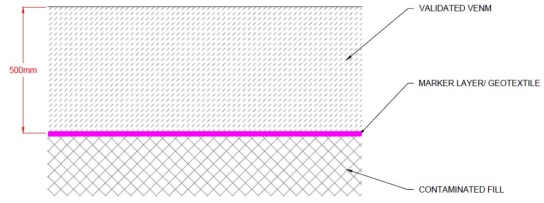
11.2. Evaluation of RAP

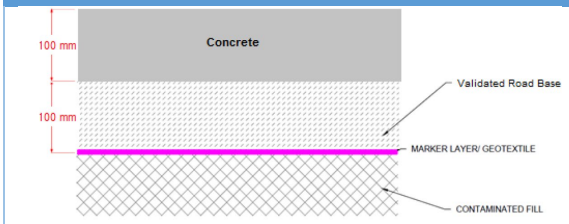
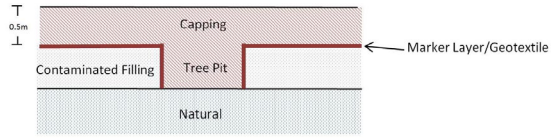
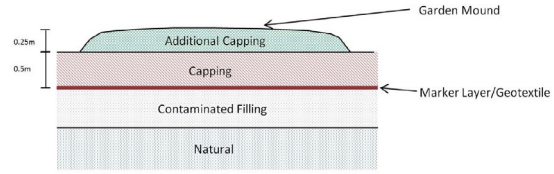
The Auditor has assessed the RAP by comparison with the checklist included in NSW EPA (2020) *Contaminated Land Guidelines, Consultants Reporting on Contaminated Land.* The RAP was found to address the required information, as detailed in **Table 11.1**.

Table 11.1: Evaluation of Remedial Action Plan

Remedial Action Plan	Auditor Comments
Remedial Goal The RAP states "*The ultimate goal/objective of the remediation will be to render the site compatible with the proposed land use (industrial).*" The purpose of the RAP is to: • Summarise the site background, proposed development, ground conditions and the findings of previous contamination investigations undertaken at the site • Document the necessary further investigation works, remediation and validation procedures to resolve contamination identified at the site, specifically within the identified AECs • Provide an unexpected finds protocol to be used should further possible contamination be observed during earthworks at the site	The goal and purpose of the RAP are consistent with the Auditor's understanding of the project objectives and consistent with the outcomes of the PSI and DSI.

Remedial Action Plan	Auditor Comments
Discussion of the Extent of Remediation Required The extent of remediation for AEC1 is defined as the extent of asbestos impact in fill in this part of the site. The inferred extent of asbestos impact in fill is shown on **Attachment 8**. The extent of remediation (if any) for the remainder of the AECs (2 to 5) and below buildings and structures is not yet known and will be defined post completion of visual validation and further investigation works.	The areas identified as requiring further assessment and the extent of AEC1 are consistent with the information reviewed. Unexpected finds of asbestos and additional areas of buried ACM are likely during remediation bulk earthworks. It is adequate to manage these as unexpected finds.
Data Gap Investigations One surface sample is proposed for each chemical storage and mixing areas (AEC3) as shown on **Attachment 8**. The samples are to be analysed for Paraquat. If required based on observations, the analytical suite will also include metals, TRH, BTEX, OCP, asbestos in soil (10 L and 500 mL), paraquat and PFAS. Once the location of the transpiration pit (AEC5) has been identified, investigation will be undertaken. Test pits will be excavated across AEC5 to meet the minimum recommended sampling density (NSW EPA, 2022) to be determined by the environmental consultant. Test pits will be excavated to a depth of 0.5 m into natural material, to a maximum depth of 3.0 mbgl. Soil samples will be collected from test pits at approximate depth ranges of 0.0 m to 0.2 m and from regular depth intervals thereafter based on field observation. Analysis of soil samples is to be undertaken for metals, TRH, BTEX, PAH, OCP, OPP, PCB, asbestos (500 mL) and asbestos field screening (10 L bulk samples – where fill with anthropogenic materials is encountered), PFAS, phosphorous and nitrogen, faecal coliforms and E.coli. Where buildings and structures are to be demolished as part of the proposed development, investigation of the resultant footprints will be required to confirm the contamination status. This will consist of an inspection of the footprints and surrounding areas of all demolished structures, to assess if surface soils are cleared of demolition waste and fragments of suspected ACM. Collection of a minimum of four soil samples from the surfaces of each former building footprint and surrounding area. Analysis of samples for metals, OCP, PCB and asbestos (500 mL and 10 L field screening). In the event that signs of staining or odours are observed within any of the footprints of sheds suspected of fuel/chemical storage, soil samples should be collected for laboratory analysis of VOC, TRH, BTEX and PAH. In former market garden areas, undertake a detailed site inspection for fill and/or asbestos on an approximate 2 m grid. Excavate test pits across the market garden areas. The number of test pits proposed must meet 50% of the recommended sampling density specified in NSW EPA (2022) for the 5 ha area (as the sampling completed for the PSI equated to 50% of the NSW EPA, 2022). Test pits will be excavated to a depth of 0.5 m into natural material, to a maximum depth of 3.0 mbgl. Where fill with anthropogenic materials is encountered, collect representative soil samples from each fill layer and submit selected soil samples for analysis for metals, OCP and OPP, asbestos in soil (500 ml and 10 L bulk samples – where fill with anthropogenic materials is encountered). DP note that the further investigation must be completed prior to remediation works commencing. The methodology and results will be detailed within either a standalone investigation report or within a remediation works plan (RWP) that details the final extent of remediation works required.	The proposed data gap investigations appear reasonable based on the outcomes of the PSI and DSI. The Auditor recommends that screening of soil samples in the former market garden areas for Paraquat and PFAS is also completed. The outcomes of the data gap investigations are to be reported in a stand-alone report or a RWP that details the final extent of remediation required, prior to remediation commencing. The report or RWP must be reviewed and approved by the Auditor prior to remediation and development works commencing.
Remedial Options The RAP states the preferred hierarchy for remediation of soil at contaminated sites in a decreasing order of preference, as set out in NEPM (2013) and outlined in NSW EPA (2017), is:	The assessed options are consistent with the known (ACM) and potential contaminants of concern associated with the data gaps and give adequate

Remedial Action Plan	Auditor Comments
1) On-site treatment of excavated soil (so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level) 2) Off-site treatment of excavated soil (so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level, after which the soil is returned to the site) If the above is not practicable: 3) Consolidation and isolation of the contaminant by containment within a properly designed barrier; and 4) Removal of contaminated material to an approved site or facility, followed, where necessary, by replacement with appropriate material. The RAP states that *"DP assessed selected remediation alternatives, taking into considerations their applicability for the site, time constraints, economic feasibility, long-term management implications, and potential environmental and health impacts. Off-site treatment is generally not viable for asbestos; therefore, this option is not further considered at this time."*	consideration of the preferred hierarchy for remediation.
Selected Preferred Option and Rationale The RAP states from review of the possible remediation options there are three potentially viable remediation options for ACM impacted soil from AEC1: • On-site treatment and placement at depth • Off-site disposal to an approved facility • On-site burial/containment: Suitable subject to Council endorsement (if being placed on land dedicated to Council). A long term EMP will be required that must be made legally enforceable and publicly notified. Do nothing was not considered suitable as the ACM may pose a risk to human health. The RAP states that the preferred remediation option for excavated soil is on site containment. The indicative location of the containment cell is proposed to be located under the hardstand on proposed Lot 1B and Lot 1C. This location is a proposed fill area of the site with up to 2 m of fill proposed (**Attachment 9**).	The preferred options are adequate. The preferred option is to be determined after approval of the SSD and once further details of the works are known. Therefore, a remedial work plan (RWP) should be prepared prior to commencing works to document the final remediation strategy and provide the detailed design for the selected strategy. The RWP should be provided to the Auditor for review and endorsement.
Description of Remediation to be Undertaken <u>ACM Fill (AEC1)</u> Remediation of AEC1 will include excavation and stockpiling and segregation of the impacted materials and validation of the excavation. The impacted fill will be contained onsite. A minimum of 0.5 m of clean capping material or a minimum 0.2 m thick cover of road base and concrete over a marker layer are required as follows:  **Figure 3: Typical schematic for capping**	The anticipated volume of soil that will require containment is to be determined based on the outcome of the data gap investigation and the final cell location and design documented in the RWP. This is acceptable considering there is a contingency for offsite disposal for any excess soils that cannot be retained onsite. It is noted that containment of contamination on land that is to be transferred to Council is unlikely to be acceptable to Council. The final containment cell location and design should avoid areas to be transferred to Council. The RWP is to be reviewed and approved by the Auditor.

Remedial Action Plan	Auditor Comments
 **Figure 4: Typical schematic for capping within hardstand area** Further details are provided for tree pits and garden beds as follows:  **Figure 1: Typical schematic for Tree Pit** Where contaminated filling extends more than 1.5 mbgl, tree pits could be designed to terminate prior to reaching the natural ground. In this instance the base of the tree pit must be lined by the marker layer and a root barrier. In this case the depth of the tree pit must be determined as appropriate for the proposed species by a landscape architect.  **Figure 2: Typical schematic for Garden Mound** DP note that the volume of fill requiring containment has not been calculated and note in the RAP that "*Once the cell location has been confirmed and the further investigations detailed within this RAP are completed, the cell location, anticipated volumes of contaminated material, anticipated volume of the containment cell for contaminated materials, and contingent volume allowance for unexpected finds will need to be detailed within the remediation works plan*.	
Description of Remediation to be Undertaken <u>Power Poles (AEC2)</u> If remediation of the power poles is required (based on visual and/or validation sampling results) the following is proposed: • Excavate and segregate the topsoil to expose natural clay materials • Extend the excavation to a depth of 0.3 m below the base of the pole within an initial 0.3 m radius (i.e. 0.6 m diameter). • Collect validation samples from the bases and walls of the excavations • Backfill excavations with either VENM or using a suitable material from within the site.	Acceptable. Final extent of remediation required to be documented in the RWP.
Description of Remediation to be Undertaken <u>Chemical Storage and Mixing Area (AEC3), Building Footprints and Transpiration Pit (AEC5)</u> Excavation and offsite disposal of impacted materials. Validation of the excavation and backfill with VENM or with verified uncontaminated material from the site if required. Remediation for ACM would also be undertaken if required as per AEC1.	Acceptable. Final extent of remediation required to be documented in the RWP.

Remedial Action Plan	Auditor Comments
Description of Remediation to be Undertaken <u>UST (AEC4)</u> Removal of contents from the UST and/or UST excavation (i.e. pump out) and appropriately dispose in compliance with the requirements of the NSW EPA. Backfilling with VENM or with verified uncontaminated material from the site if required.	Acceptable. Final extent of remediation required to be documented in the RWP.
Description of Remediation to be Undertaken <u>Transpiration Pits (AEC5)</u> Excavation and offsite disposal of impacted materials. Validation of the excavation and backfill with VENM or with verified uncontaminated material from the site if required. Remediation for ACM would also be undertaken if required as per AEC1.	Acceptable. Final extent of remediation required to be documented in the RWP.
Proposed Validation Criteria/Remediation Acceptance Criteria (RAC) The RAP states the RAC are informed by the HILs, HSLs, EILs, ESLs, and management limits (ML) and are equivalent to the SAC adopted for the PSI and DSI (and by the Auditor) (**Section 7**).	Adequate. The Auditor notes that RAC for PFAS and Paraquat should also be adopted from NSW EPA or nationally endorsed guidelines.

Proposed Validation Testing
<u>Stockpiled Soils for ACM</u>
All stockpiled soils requiring validation for asbestos will be validated by collection of validation samples (10 L and 500 mL) at the rate of one sample per 20 m^3 which is meets NEPM (2013) sampling requirements for stockpiles. If ACM is observed, record the weight, size and condition of the ACM. Based on the results of the 10 L and 500 mL samples, the Environmental Consultant should determine the fate of the soil stockpiles as per below:
• ACM, FA and AF are below the RAC – soil is suitable for re-use on site (minimum 0.5 m below final site level).
• ACM exceeds the RAC, but FA and AF are below the RAC – soil requires treatment, placement within a containment cell or disposal offsite; or
• FA and AF exceed the RAC – soil is not suitable for on-site re-use and so requires either placement in the containment cell, or waste classification (Waste Classification Guideline NSW EPA 2014) and off-site disposal to a suitably licensed landfill.
<u>Excavations (AEC1, AEC3, AEC5, and Building/Structure Footprints)</u>
Validation will include visual inspection of the remedial excavation. Sampling and analysis of the soil by the environmental consultant with reference to NEPM (2013) and guidelines as follows:
• For small to medium excavations (base <500 m^2):
  ○ Base of excavation: one sample per 25 - 50 m^2 or part thereof; and
  ○ Sides of excavation: one sample per 10 m length or part thereof and at 1 m depth intervals.
• For Large excavations (>500 m^2):
  ○ Base of excavation: sampling on a grid at a density in accordance with the EPA Contaminated Sites: Sampling Design Guidelines (2022); and
  ○ Sides of excavation: one sample per 20 m length or part thereof and at 1 m depth intervals.
Laboratory analysis of collected samples for COPC specific to the excavation/area of the site. Where the reported concentration of the COPC are greater than the RAC, further chase out of that location will be undertaken.
Stockpile footprints for ACM will be validated at a rate of one sample per 25 m^2 of stockpile footprint area. Sampling will include ~10 L and 500 mL samples. If asbestos is reported in any form in the validation sample, further excavate and re-validate the
	Stockpile footprints are to be validated for COPC associated with the remediated area (AEC)

Remedial Action Plan	Auditor Comments
stockpile/asbestos treatment area footprints until the validation results are within the RAC. <u>Timber Power Poles (AEC2)</u> Validation samples to be collected as follows: • Excavation Side Walls - Topsoil Excavation: One sample per side wall within the topsoil layer (i.e. four samples) • Base - Underlying Topsoil: One sample per base of excavations. • Excavation Side Walls - Clay Excavation: One sample from the northern and southern side walls within the clay layer (i.e. two samples) • Base - Underlying base of former pole: One sample per base of excavations. All validation samples will be analysed for PAH, TRH and metals. <u>UST (AEC4)</u> Validation sampling of the sides and base of the septic tank excavation, and of the footprint of any removed pipe infrastructure (if present) will be collected by the environmental consultant at a rate of one sample per 5 m by 5 m grid over the excavation footprint with a minimum of one sample and one sample per 5 m length of sidewall or part thereof with a minimum of one sample per sidewall. Soils samples are to be collected from any septic tank excavation spoil (if required) to assess the material's suitability to remain on-site or to waste classify it for off-site disposal. Analysis of validation and excavation spoil samples for TRH, BTEX, PAH, metals, nutrients (i.e. phosphorus and nitrogen), faecal coliforms and e.coli.	
Imported Fill The RAP states that any imported soil or aggregate must have contaminant concentrations that meet the RAC. Imported materials will only be accepted for use at the site if it can legally be accepted onto the site (e.g. classified as virgin excavated natural material (VENM), accompanied by a report / certificate prepared by a qualified environmental consultant), visual inspection of the imported soil confirms that the soil has no signs of concern and is consistent with those described in the supporting classification documentation, the material has no aesthetic issues of concern, and the materials are validated (by inspection / sampling) by the Environmental Consultant as being suitable for use at the site. The classification report / certificate for all material must be reviewed and approved in writing by the Environmental Consultant prior to import. Materials to be imported may need to meet geotechnical requirements which are to be assessed by others, as required. If permitted by the development consent and approved by the site owner, Remediation Contractor and Environmental Consultant and Site Auditor, material classified under a NSW EPA RRO may also be accepted. The need for check-sampling of RRO material is to be determined by the Environmental Consultant depending on the source of the material, adequacy of the supporting documentation provided and inspection(s) of material. Quarried material / VENM may need little or no check sampling. Any recycled materials proposed for importation must be sampled at a frequency of one sample per 25 m^3, with a minimum of three samples per load. Based on the current proposed fill import requirements for the site, a standalone fill management protocol could be prepared to detail more specific import protocols and controls that can be implemented to confirm consistency of the materials received at	The procedures outlined in the RAP for validation of imported materials are adequate. Based on the anticipated fill volumes required at the site, it is recommended that a fill importation procedure (FIP) be developed and implemented by the contractor.

Remedial Action Plan	Auditor Comments
the site and provided protocols for the rejection of non-conforming loads.	
Contingency Plan if Selected Remedial Strategy Fails If material fails the RAC, it is to be placed in the containment cell (where considered suitable), treated and validated (ACM impacted soils only) or disposed offsite. An asbestos treatment area (ATA) and storage area(s) is/are to be set up outside of the known areas of contamination. If it is necessary to set up the ATA and storage area(s) on portions of the site that have not yet been remediated, a pad comprising previously validated site-won material shall be established across the ATA and area for stockpiling of treated soils. Establishment of the ATA and storage areas will involve stripping topsoil/fill at the designated site area until natural soil is exposed. Excavation of ACM-impacted fill and transport to the designated ATA awaiting treatment as follows: • Spreading materials in a designated ATA in a layer no thicker than 0.1 m in 10 m^3 portions to minimise the potential for mixing of highly impacted soils with low/non impacted soils • Inspection and removal by hand ("emu-bobbing") of the asbestos by the Remediation Contractor • Re-working and spreading the material across the ATA using appropriate plant/equipment, with the material being "emu-bobbed" by the Remediation Contractor. • Each spreading will be documented. Repeating the spreading and "emu-bobbing" process iteratively until no bonded ACM fragments are observed on three consecutive complete passes by the Remediation Contractor and Environmental Consultant. Validation of the material by both visual, screening test and laboratory analysis. Validation samples collected by the Environmental Consultant at a minimum approximate rate of one sample per 10 m^3 (10 L and 500 mL). If the tests indicate the material fails validation due to the presence of bonded ACM fragments, the treatment/process can be repeated. If the tests indicate the material fails the validation due to AF/FA in soil, it will be considered a contingency situation (i.e. off-site disposal to landfill). Successfully validated material will be transported out of the designated ATA for re-use at depth (greater than 1 m) within the site.	In the Auditor's opinion, the contingencies included in the RAP are feasible and practical. The Auditor should be informed of any unexpected finds or changes to the remediation strategy.
Unexpected Finds An Unexpected Finds Procedure is documented in Section 10 of the RAP. If unexpected conditions are encountered during site works (such as buried tanks and further, contaminated soil), the following general approach will be adopted: • Stop work in the area of impact and barricade area to prevent access • The Remediation Contractor is to contact the principal's representative or their Project Manager and the Environmental Consultant • The Environmental Consultant will make an assessment of the severity/extent of the unexpected find in terms of the potential impact to human health and the environment. If the suspected contamination includes potentially volatile contamination, the Environmental Consultant will screen the soil sample (headspace test) using a Photo-Ionization Detector (PID) • The Environmental Consultant will liaise with the Principals Representative (PR) as required • The Environmental Consultant will provide advice to the PR regarding the recommended course of action. The remediation strategies detailed within this RAP for the known AEC's are	The procedure for handling unexpected finds is appropriate and practical and can be implemented within the proposed remediation strategy.

Remedial Action Plan	Auditor Comments
also considered appropriate to remediate unexpected finds identified during construction for the same contaminants of concern (i.e. asbestos impacted fill, etc.) • The Remediation Contractor is to implement the agreed management/remedial strategy. • Specific requirements for unexpected asbestos finds, including asbestos irrigation pipes are outlined in Section 10 of the RAP.	
Interim Site Management Plan (before remediation) The RAP notes that, as the identified AECs are not proposed to be disturbed, interim site management is not required.	The Auditor understand the site is fenced private property and surfaced by hardstand or grass cover. The Auditor considers that the risk to receptors from contamination is low in the current site condition.
Site Management Plan (operation phase) including stormwater, soil, noise, dust, odour and WH&S The RAP states that it is the responsibility of the Contractor to develop a Site Management Plan (SMP) detailing overall site management, environmental management (including soil, air and water) and occupational health and safety (OH&S) plans. The RAP provides a brief summary of some of the items which need to be included in the Contractor's plans including: • Site Operations • Site stormwater management • Soil management • Noise control • Dust control • Odour control • Contingency measures for environmental incidents The Contractor should develop a site emergency response plan (ERP) and work health and safety management plan (WHS). This will ensure the safety of the personnel working on site, given any likely emergency situation which may occur. The WHS and ERP should include emergency phone numbers and details of local emergency facilities. The RAP outlines minimum requirement for personal protective equipment (PPE).	Adequate
Remediation Schedule and Hours of Operation The RAP states the schedule of remedial works, including timing and staging is to be prepared by the Contractor to meet the requirements of this RAP. Remediation works will be restricted to the hours set out by Council and the development consent.	Adequate
Licence and Approvals An appropriately licensed landfill should be selected and the material tracked from the site to the landfill. The RAP notes that removal of waste materials from the site shall only be carried out by a licensed contractor holding the appropriate licence, consent or approvals to dispose of the waste materials according to the classification outlined in the NSW EPA (2014) *Waste Classification Guidelines* and with the appropriate approvals obtained from the NSW EPA, if required. All asbestos excavation works must be undertaken by an appropriately licensed Asbestos Contractor (Class B asbestos licence as a minimum). Works must comply with all NSW legislative requirements including (but not limited to) all SafeWork requirements, notification of works to SafeWork five days prior to work commencing, implementation of the RAP and the Asbestos Contractor's Work Method Statement, wearing of appropriate PPE and air monitoring for asbestos fibres (where appropriate).	Adequate
Contacts/Community Relations The Contractor will be responsible for preparing a list of contacts for the works, including emergency contacts for the site operations	Adequate

Remedial Action Plan	Auditor Comments
and provision of signage at the site to allow the public to contact nominated site personnel out of hours.	
Staged Progress Reporting The RAP requires that following the data gap investigation works a RWP must be prepared to confirm the extent of remediation required and the final location and design of the containment cell. The RWP must be completed prior to remediation works commencing on site. The RAP states that a validation assessment report will be required once the remediation works have been completed and should be prepared by the environmental consultant in accordance with NSW EPA (2020) *Guidelines for Reporting on Contaminated Land: Contaminated Land Guidelines*. The validation report(s) may be prepared in a staged manner, depending on the Project Programme.	Appropriate. The RWP is to be reviewed and endorsed by the Auditor prior to remediation works commencing.
Long Term Environmental Management Plan If a containment cell is constructed on site and used for containment of contaminated soils, an Environmental Management Plan (EMP) is required to be prepared by the Environmental Consultant. The EMP is to be prepared in accordance with the NW EPA (2020) reporting guidelines and include the following: • The nature and location of contamination remaining on site; • What long-term management is required to ensure the ongoing protection of human health; and • A mechanism for enforcement of the EMP.	Appropriate.
Waste Management A waste classification assessment should be carried out in accordance with NSW EPA (2014). All transport of waste and disposal of materials must be conducted in accordance with the requirements of the POEO Act (1997). All materials excavated and removed from the site shall be disposed in accordance with the POEO Act 1997 and to a facility/site legally able to accept the material. A record of the disposal of materials should be maintained and provided to the Environmental Consultant for waste reconciliation purposes. Details of all contaminated and spoil materials removed from the site shall be documented by the Contractor with copies of weighbridge slips, trip tickets and consignment disposal confirmation provided to the Environmental. A site log should be maintained by the contractor to track disposed loads against on-site origin including Waste Locate records for material containing asbestos.	Adequate.

11.3. Auditor's Opinion

The proposed data gap investigations and remediation works are adequately outlined in the RAP. If adequately implemented, the RAP should be able to ensure that the site is suitable for the proposed land uses through the capping and containment (or as a contingency, treatment and/or offsite disposal) of asbestos impacted fill material and further assessment and remediation of structures including the UST, septic tank, transpiration pit, chemical mixing and storage areas, sheds/building structures and wooden power poles. Successful validation will be required to confirm remediation.

The unexpected finds protocol is considered adequate to address any further contamination finds during the development process. It is recommended that an imported fill protocol be developed and implemented by the contractor to ensure all materials imported to site are validated as suitable for use.

The RAP requires a RWP be prepared documenting the outcomes of the data gap investigations and confirming the final extent of remediation required and the final location and design of the containment cell. The RWP is to be reviewed and endorsed by the Auditor prior to remediation commencing.

12. CONCLUSIONS AND RECOMMENDATIONS

DP concluded in the RAP that "*It is considered that the site can be made suitable for the proposed development subject to implementation of this RAP. In addition, the RAP should enable appropriate management of any potential impacts on the environment which may occur during the course of the remediation works*".

Based on the information presented in the DP 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 (3rd Edition)*, the Auditor concludes that the site can be made suitable for the proposed warehouse development anticipated by SSD-23480429, subject to implementation of the RAP and compliance with the following conditions:

- An environmental consultant is engaged to undertake a data gap investigation addressing the requirements of the RAP prior to remediation and redevelopment of the site commencing.
- A RWP is prepared documenting the outcomes of the data gap investigations and confirming the final extent of remediation required and the final location and design of the containment cell. The RWP is to be reviewed and endorsed by the Auditor in interim audit advice prior to remediation commencing.
- Validation of remediation is compiled into a Validation Report, in accordance with NSW EPA (2020) *Contaminated Land Guidelines, Consultants reporting on contaminated land*, for review and audit by the Site Auditor.
- If an EMP is required due to retained contamination, the EMP is reviewed and audited by the Site Auditor and agreed as an appropriate method of management prior to implementation.
- A Section A SAS and SAR assessing the suitability of the site for occupation is prepared by a NSW EPA Accredited Site Auditor following completion of remediation.
- If remediation of the site is staged, commensurate staged validation reporting will be required to facilitate the site audit. Consultation with the Principal Certifying Authority would be required to define the site audit requirements for reoccupation (i.e., through interim audit advice, or separate Section A SAS).

It is recommended that the following (or similar) condition is also included as an SSD condition for occupation/operation of the site to facilitate the legal enforceability of the EMP:

- *The EMP (if required) is to be implemented during occupation or use of the site. The approved EMP is to be reviewed periodically and, where appropriate, updated or amended. The approved EMP is to be implemented until a site audit confirms that the site is suitable for the proposed use without an EMP.*

13. LIMITATIONS

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

The Auditor has relied on the documents referenced in **Section 1** in preparing the Auditor's opinion. The consultants included limitations in their reports. This interim audit advice must also be subject to those limitations. The Auditor has prepared this document in good faith but is unable to provide certification

outside of areas over which the Auditor had some control or is reasonably able to check. If the Auditor is unable to rely on any of those documents, the conclusions of this interim audit advice could change.

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

* * *

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

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

Yours faithfully
Ramboll Australia Pty Ltd

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EPA Accredited Site Auditor 1903

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Attachments:

1: Site Location

2: Site Survey

3: Site Layout (PSI)

4: Proposed Development Layout

5: Investigation Locations (PSI)

6: Investigation Locations (DSI)

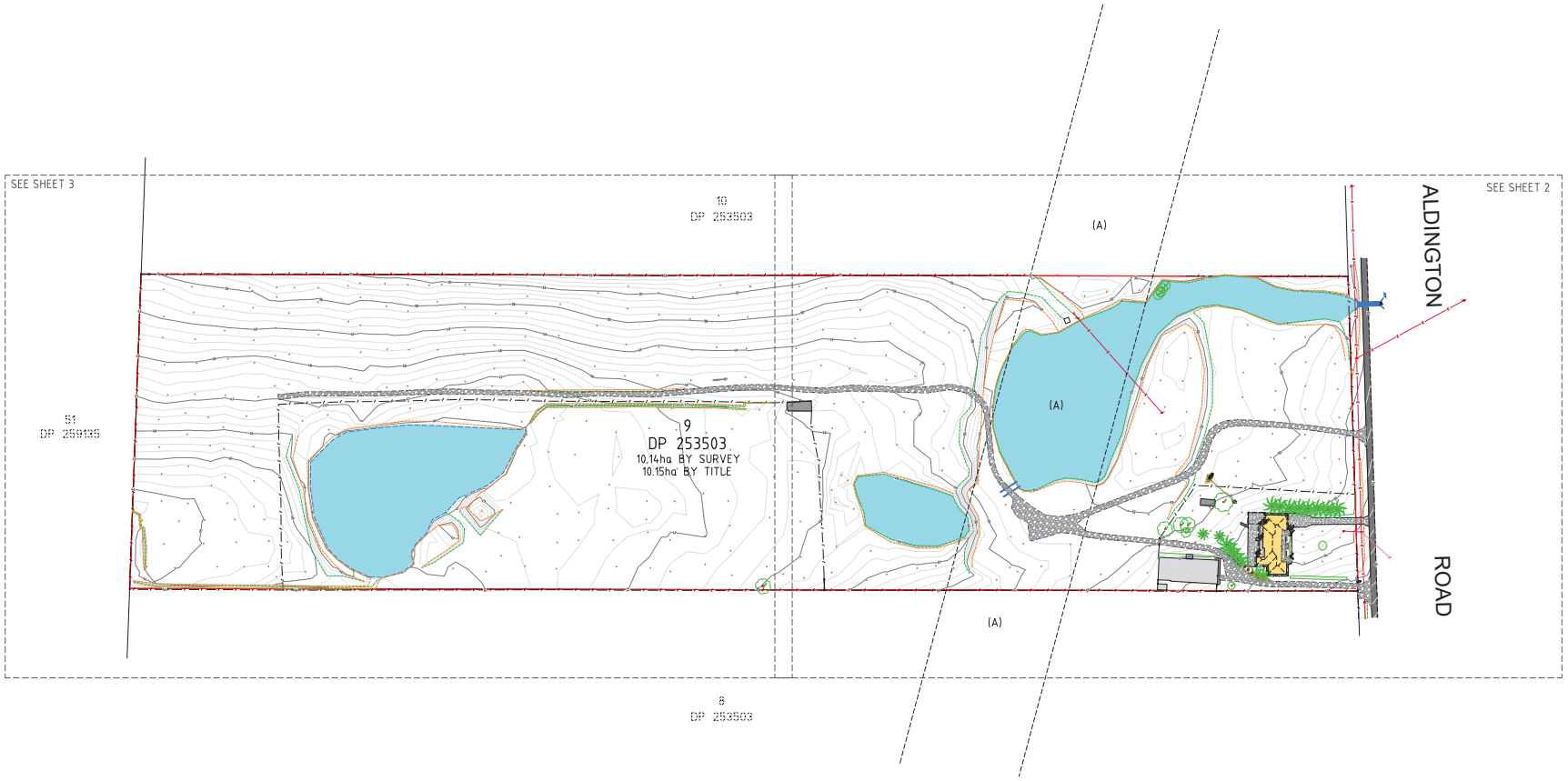
7: Combined Investigation Locations (PSI and DSI)

8: Remediation Areas of Concern

9: Indicative Containment Cell Location

Attachment 1: Site Location

Attachment 2: Site Survey



LEGEND

Bench Mark	▲
Comms Overhead	T
Comms Pole	
Electrical Power Pole	
Electrical Power Pole	
Electrical Underground/Overhead Cable	E
Fence	/
Gate	
Sewer Inspection Point (Lamphole)	L
Sewer Manhole	
Sewer Pipe	S
Tree	
Tree (Palm)	
Water Meter	
Water Tap	
Mailbox	
Bottom of Bank	
Top of Bank	
Drainage Pit Surface Level	SL
Drainage Pipe Invert Level	IL
Underground to Overhead Electricity Cables	UGOH
BUILDING	
SHED	
WATERCOURSE	
GARDEN BED	
GRAVEL	
CONCRETE	
BITUMEN	

NOTES:

1. CONTOURS SHOWN DEPICT THE APPROXIMATE TOPOGRAPHY, SPOT LEVELS SHOULD BE TAKEN IN PREFERENCE TO CONTOURS, CONTOURS DO NOT REPRESENT THE EXACT LEVEL AT ANY POINT. ALL LEVELS SHOULD BE CONFIRMED ON SITE PRIOR TO EXCAVATION OR CONSTRUCTION.
2. SOME SPOT LEVELS HAVE BEEN REMOVED FROM THE FACE OF THIS PLAN FOR CLARITY. ADDITIONAL SPOT LEVELS ARE AVAILABLE IN THE ELECTRONIC VERSION OF THIS PLAN FOR MORE DETAILED DESIGN WORKS.
3. BOUNDARIES SHOWN ON THIS PLAN ARE BASED ON PLANS AVAILABLE ON PUBLIC RECORD AT TIME OF SURVEY AND PRELIMINARY SURVEY INVESTIGATIONS ONLY. ANY FUTURE PLAN/S OF SURVEY OF ADJOINING LOTS REGISTERED WITH THE NSW LAND REGISTRY SERVICE MAY IMPACT THE SUBJECT LOT BOUNDARIES. ALL BOUNDARIES, DIMENSIONS, AREAS AND EASEMENTS ARE SUBJECT TO FINAL SURVEY AND REGISTRATION OF A PLAN WITH THE NSW LAND REGISTRY SERVICE.
4. THE RELATIONSHIP OF IMPROVEMENTS TO BOUNDARIES IS DIAGRAMMATIC ONLY. WHERE OFFSETS ARE CRITICAL, THEY SHOULD BE CONFIRMED BY FURTHER SURVEY. PRIOR TO CONSTRUCTION BOUNDARIES SHOULD BE MARKED.
5. SERVICES HAVE BEEN LOCATED WHERE VISIBLE ONLY, ALL SERVICES SHOULD BE LOCATED BY THE RELEVANT AUTHORITY PRIOR TO ANY DESIGN, EXCAVATION OR CONSTRUCTION WORKS.
6. GUTTER AND ROOF DETAILS HAVE BEEN OBTAINED VIA INDIRECT SURVEY METHODS WHERE VISIBLE FROM GROUND LEVEL AND ARE SHOWN ON THIS PLAN IN THEIR APPROXIMATE LOCATION FOR THE PURPOSE OF GENERAL SITE ANALYSIS ONLY.
7. TREE CANOPIES AND HEIGHTS ARE APPROXIMATE ONLY AND SHOULD BE VERIFIED BY DETAILED SURVEY IF CRITICAL TO DESIGN. ADDITIONAL TREE DETAILS ARE AVAILABLE IN THE ELECTRONIC VERSION OF THIS PLAN.
8. THIS PLAN HAS BEEN PREPARED FOR DEVELOPMENT APPLICATION PURPOSES AND TO ASSIST WITH FUTURE DESIGN WORKS AND SHOULD NOT BE USED FOR ANYTHING OTHER THAN THAT PURPOSE.

(A) EASEMENT FOR ELECTRICITY TRANSMISSION LINE 60.96 WIDE (GAZ 16.08.1963, FOL 2387-2389)

CAVEAT BY ZADOPP PTY LTD (AQ736621) AFFECTS LOT 9
NB: THE TERMS OF THE CAVEAT HAVE NOT BEEN INVESTIGATED

WARNING
THE COORDINATES WITHIN THIS DRAWING RELATE TO MAP GRID OF AUSTRALIA (MGA) 2020, REFER TO A REGISTERED LAND SURVEYOR FOR FURTHER CLARIFICATION. CAUTION SHOULD BE TAKEN WHEN IMPORTING INFORMATION OBTAINED FROM OTHER SUB-CONSULTANTS OR SOURCES TO ENSURE THAT THE DATA IS ON A MATCHING COORDINATE SYSTEM.

CONTOUR INTERVAL :- 0.25m

ORIGIN OF LEVELS :- PM 33561
E 295 433.848
N 6 251 888.432
R.L. 43.699 (AHD)

VER	BY	AMENDMENTS	DATE
A	M.W.	ISSUED TO CLIENT	03.06.21
B			
C			
D			
E			
F			
G			

- THE POSITION OF SERVICES SHOWN ON THIS DRAWING ARE INDICATIVE ONLY AND HAVE BEEN PLOTTED FROM PLANS AND DRAWINGS SUPPLIED BY RELEVANT AUTHORITIES.
- SERVICE AUTHORITY PITS, MANHOLES, POLES, MARKER POSTS, ETC., WHERE SIGHTED AT TIME OF SURVEY, HAVE BEEN LOCATED. THE SURVEY DOES NOT INCLUDE INVESTIGATION OR LOCATION OF UNDERGROUND INFRASTRUCTURE.
- SERVICES INFORMATION SHOWN ON THIS DRAWING HAS BEEN OBTAINED THROUGH A DIAL BEFORE YOU DIG SEARCH AND IS VALID FOR THE PERIOD OF TIME FROM THE DATE OF ISSUE NOMINATED BY THE AUTHORITY.
- PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON OR ADJACENT TO THE SITE IT IS THE RESPONSIBILITY OF THE DEVELOPER AND CONTRACTORS TO APPLY FOR AND OBTAIN UP TO DATE PLANS THROUGH A NEW DIAL BEFORE YOU DIG SEARCH AND TO CONTACT ALL THE RELEVANT AUTHORITIES TO ESTABLISH AND CONFIRM THE DETAILED LOCATION AND DEPTH OF ALL UNDERGROUND SERVICES.

www.dialbeforeyoudig.com.au
DIAL 1100 BEFORE YOU DIG

CLIENT:
ICON OCEANIA KEMPS
DEVELOPMENT PTY LTD
LEVEL 19, 9 HUNTER STREET
SYDNEY, 2000

Beveridge Williams
Land Development Consultants
Registered Surveyors
Central Coast (02) 4351 2233
www.beveridgewilliams.com.au

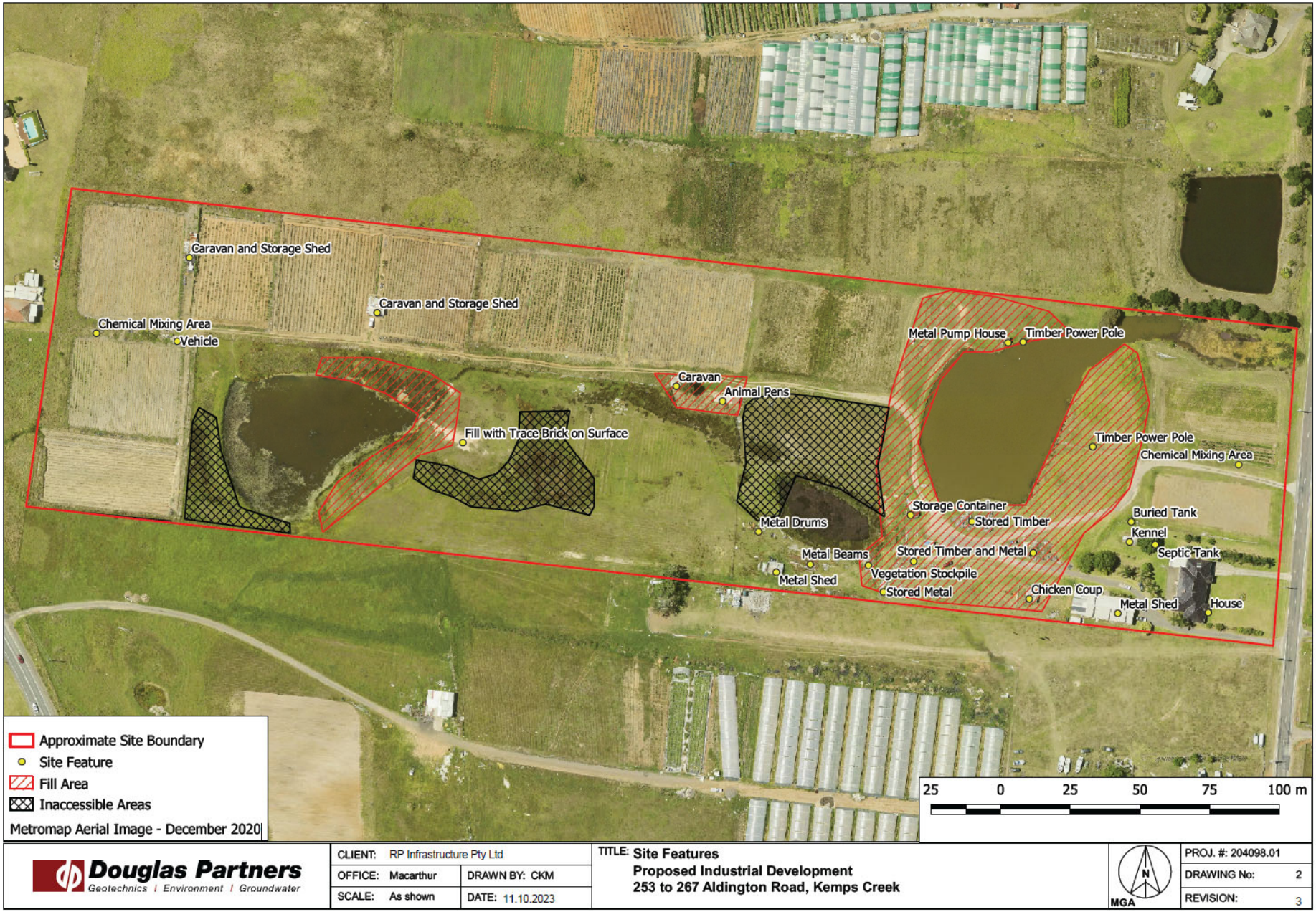
DETAILS:
DETAIL SURVEY PLAN FOR
DEVELOPMENT APPLICATION PURPOSES
LOT 9 DP 253503
253-267 ALDINGTON ROAD, KEMPS CREEK

ORIGINAL
SCALE 1:1250
SHEET SIZE A1
CAD REFERENCE: 2101126-DET-001-A
0 25 50 75
SCALE ON ORIGINAL DRAWING AT 1:1250

SURVEYOR:	R.C. & E.T.
DRAWN:	M.W.
CHECKED:	D.H.
SURVEY DATE:	01.06.2021
VERTICAL DATUM:	AHD
HORIZONTAL DATUM:	MGA

PROJECT No.
2101126
DRAWING REF.
DET-001
VERSION A
SHEET 1 OF 3

Attachment 3: Site Layout (PSI)



Attachment 4: Proposed Development Layout

Landscape Design Statement - 253-267 Aldington Road Kemps Creek – SCAPE Design

The landscape design prepared for 253-267 Aldington Road, Kemps Creek, being one of the first in this part of the precinct, aims to set a standard of public domain outcomes and resilient landscapes. In order to achieve this high standard of development, the design meets and/or exceeds the key objectives of the NSW Planning *Mamre Road Precinct DCP*, *Greener Places* and *Urban Tree Canopy* Guidelines, as well as other guidelines relevant to Western Sydney.

The creation of resilient industrial landscapes is achieved in the first instance by maximising tree planting in order to mitigate heat island effects caused by large expanses of pavement and to screen built form. The on-lot development will incorporate 156 native and 10 exotic trees in order achieve a 2.4% canopy coverage and address these requirements. The Channel development has a canopy coverage of 9.88%, that is comprised of 100 native trees. A further 44 local native tree species are proposed for the public domain in order to achieve a minimum of 13.16% canopy coverage to public domain areas.

Permeable surfaces comprising a combination of native, endemic and carefully selected exotic vegetation, shade and drought tolerant turf species and gravel, will be maximised in order to reduce run-off. Plant species are also to be low maintenance and adaptable to a range of climatic conditions, ensuring all new landscaped areas are water sensitive and tolerant of the harsh Western Sydney climate.

A large 10m wide stormwater channel is provided along the southern frontage of Lot 2. Designed in conjunction with the civil engineers, this channel will intercept overland flow from the development and adjacent public domain areas in order to slow down water velocities and will discharge stormwater with an improved water quality before it is allowed to release to the a drainage line associated with the Mamre Road corridor.

The generous landscape setbacks will foster a clustered, yet dense approach to tree planting, primarily with native and endemic species, which will provide visual screening to the immediate neighbours of the site, users ofinternal roads and footpaths, as well as longer range views. When combined with the proposed estate streetscape design, large, meaningful strips of canopy trees with mass planting of shrubs and groundcovers will form a dense vegetative screen for the development. Once within the site, feature trees assist with wayfinding by helping to define the building entry points. Wayfinding will be further emphasised by the provision of urban benches adjacent to entries to accompany estate signage.

Overall, the landscape approach aims to achieve the environmental and planning requirements, while also providing a memorable landscape contribution to the increasingly industrialised precinct. The health and function of the landscape has been considered during the design period and assumes skilful and careful installation, establishment and ongoing maintenance that tapers off over time once the landscape has acclimatised and is resilient to fluctuations in climate and usage.

NOT FOR CONSTRUCTION

DRAWING NUMBER	DRAWING NAME	REVISION	PROJECT NAME AND ADDRESS
L.SK.01	Landscape Masterplan	G	Industrial Development 253-267 Aldington Road, Kemps Creek NSW

PROJECT NUMBER	DRAWING DATE	SCALE	SCALE BAR	STATUS	NP	CLIENT NAME	DRAWN BY	CHECKED BY
SD21021	18/10/2023	1:1000@A1	0 10 20 30 40 50 M	DRAFT		Icon Oceania c/- ROOT Partnerships	WL	CH

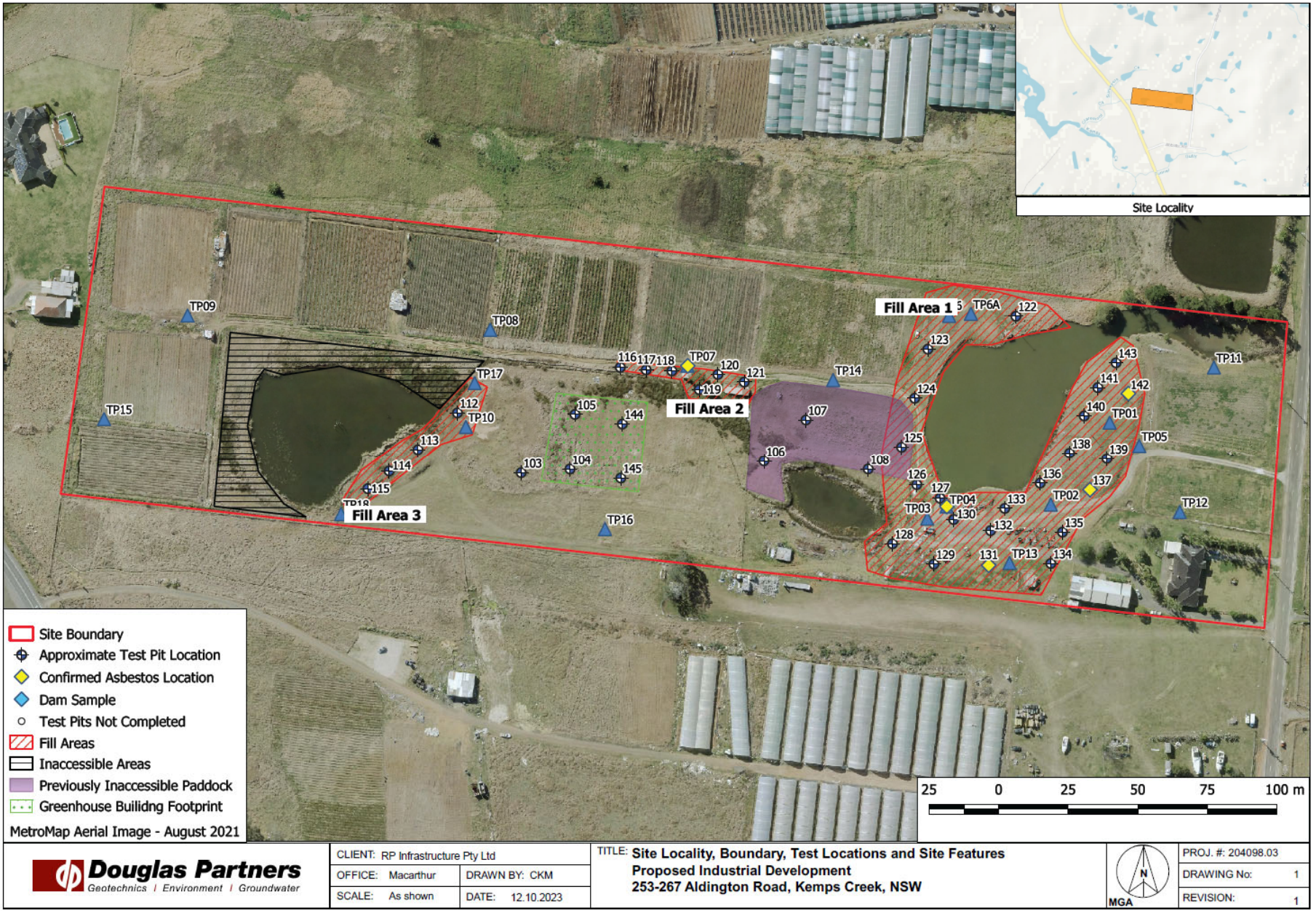
CONSULTANTS

Architect: nettleton tribe — 117 Willoughby Road, Crows Nest, NSW 2065, Ph: +61 2 9431 6431

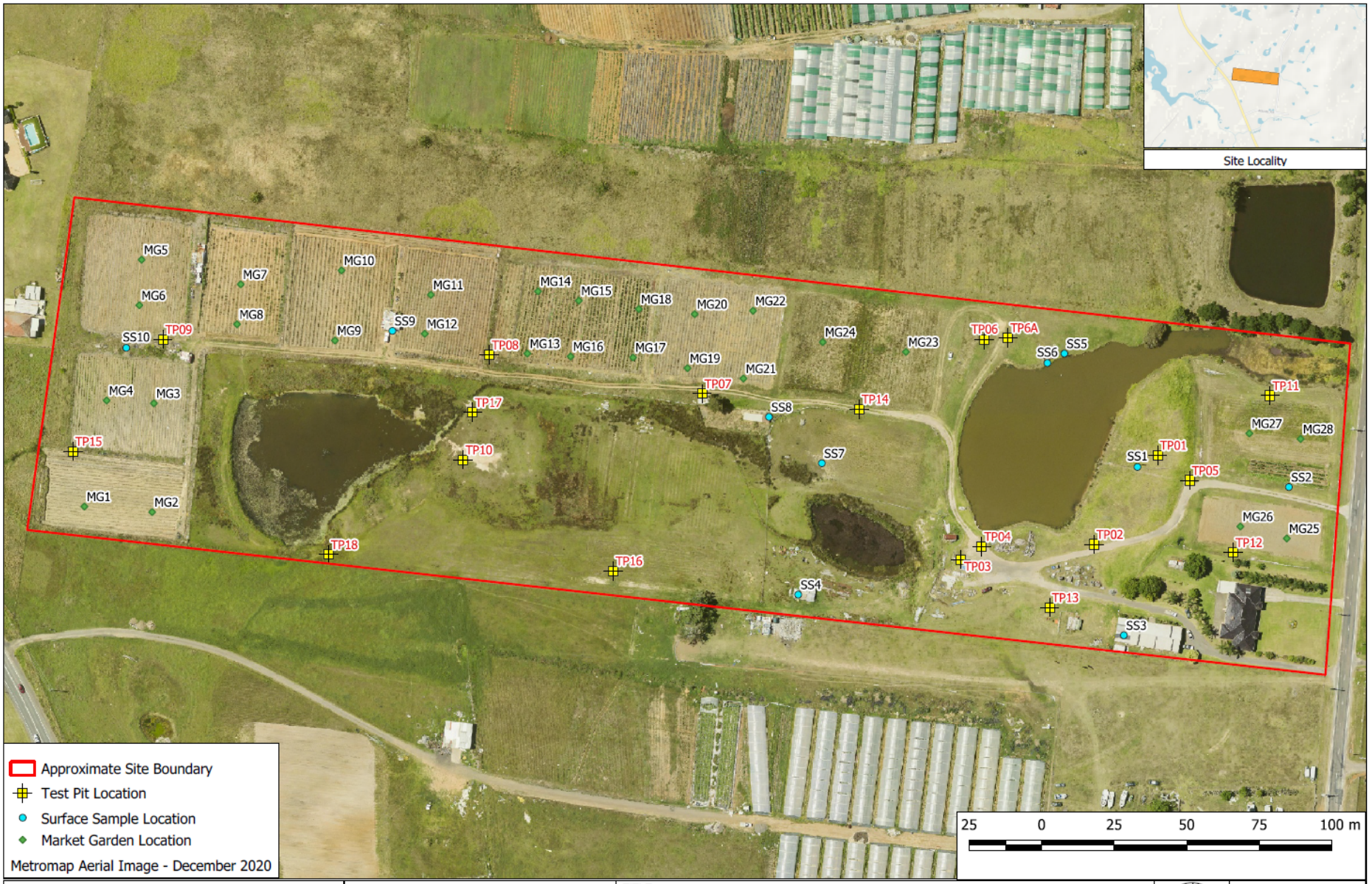
Civil engineer: at&l — Level 7, 153 Walker Street, North Sydney, NSW 2060, Ph: 02 9439 1777

DRAWINGS BY: scape DESIGN — LANDSCAPE ARCHITECTURE, Suite 5 / 15 The Corso, Manly NSW 2095, www.scapedesign.com.au

Attachment 5: Investigation Locations (DSI)

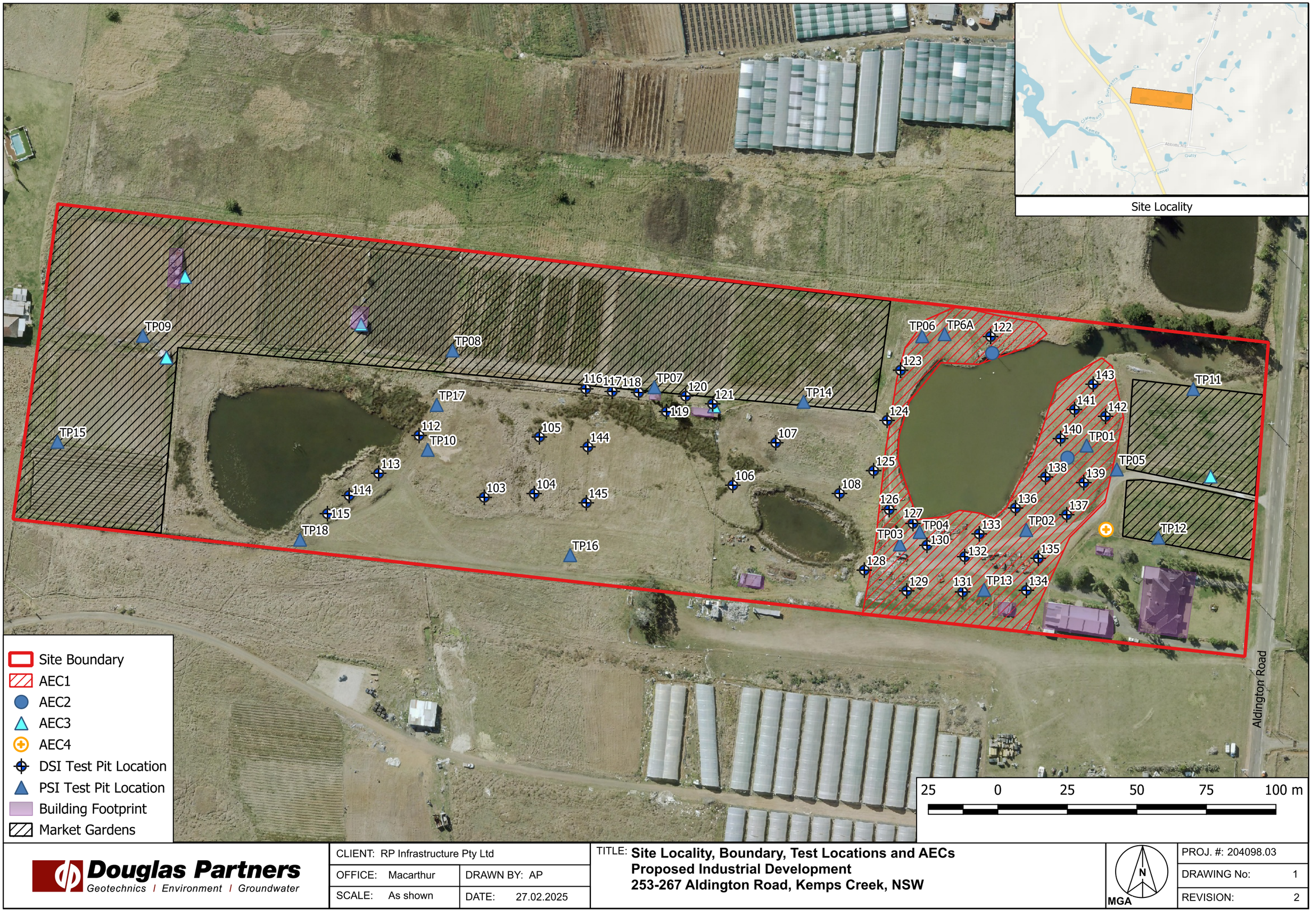


Attachment 6: Investigation Locations (PSI)



Attachment 7: Combined Investigation Locations (PSI and DSI)

Attachment 8: Remediation Areas of Concern



Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: RP Infrastructure Pty Ltd		TITLE: **Site Locality, Boundary, Test Locations and AECs** **Proposed Industrial Development** **253-267 Aldington Road, Kemps Creek, NSW**
	OFFICE: Macarthur	DRAWN BY: AP	
	SCALE: As shown	DATE: 27.02.2025	

PROJ. #:	204098.03
DRAWING No:	1
REVISION:	2

Attachment 9: Indicative Containment Cell Location