

Fife Kemps Creek Pty Limited  
c/ - Ethos Urban Pty Limited  
173 Sussex Street  
SYDNEY NSW 2000

Project 92421.01  
15 March 2021  
R.001.Rev0  
RWG

Attention: Mr Paul Altree-Williams

Email: PAltree-Williams@ethosurban.com

**Contamination Status and Remediation Options Summary**  
**Proposed Industrial Subdivision**  
**200 Aldington Road, Kemps Creek**

## 1. Introduction

Douglas Partner Pty Ltd (DP) was engaged by Fife Kemps Creek Pty Ltd (FKC) to prepare a Contamination Status and Remediation Options Summary letter for the proposed industrial subdivision at 200 Aldington Road, Kemps Creek (the site, as shown on Drawing 1, attached). The site has an approximate area of 72 ha and is currently actively used for rural residential and market gardening activities.

DP has completed several contaminations investigations at the site which are summarised in *Contamination Status Summary Report, 200 Aldington Road, Kemps Creek*, Project 92421.00.R.001.Rev1 dated 1 October 2020 (DP, 2020). DP (2020) concluded that the site can be made suitable for the proposed commercial/industrial use. Further investigations were recommended to confirm the contamination status of selected areas of environmental concern (AEC) within the site and to provide data to assist in the development of a remediation action plan.

The reporting was completed to support a State Significant Development Application (SSDA) submission. NSW Planning Industry and Environment (NSW Planning) *Response to Submissions Letter* (SSD-10479) dated 22/12/2020, outlines the below additional contamination requirements:

- *The Contamination Status Summary Report identifies that a search and review of historic titles and deposited plans, SafeWork NSW information, Council records and Section 10.7 certificates were not conducted 'due to the timeframe for the investigation'. Submit a revised report that includes all necessary research required as part of the assessment of the suitability of the site.*
- *Undertake a detailed site investigation (DSI) across the site to address the recommended further investigations in the preliminary site investigation (PSI) reports and supplementary contamination investigation report.*
- *Include consideration of any contamination impacts from the removal of septic tanks identified on site and the history of failed on-site sewage management systems and pooling effluent on Lot 31 DP 258949 identified in the PSI for 106-142 Aldington Road (ref. 92345.00).*
- *Based on the DSI results, prepare and submit a remedial action plan as required.*

DP understands that FKC intend to address the NSW Planning requirements however will request that NSW Planning consider that the additional contamination requirements outlined in the NSW Planning letter be conditioned on the development consent to be completed prior to other works for the following reasons:

- FKC do not currently have access to the land to complete the investigations.
- The investigation would involve excavation of test pits which are very disruptive and would impact current users (residential and market gardening activities) if undertaken while occupied.
- Some of the AEC are located within the footprints of existing structures.

*Managing Land Contamination, Planning Guidelines, SEPP 55 – Remediation of Land* (NSW DUAP/EPA, 1998) requires that during the processing and determining of a development application, the consent authority must consider if the land is suitable, or can and will be made suitable, for the proposed development.

This letter provides information regarding known and potential contamination at the site, as well as viable remediation options and timeframes to inform the above consideration. The letter should be read in conjunction with DP (2020).

## **2. AEC Investigation and Contamination Status**

The investigations included test pitting in AEC and background (non-AEC) areas of the site. Collected samples were analysed for a range of contaminants of potential concern (COPC). AEC and the location of previous test pits are shown on Drawings 1 and 2, respectively, attached. The previous investigation identified that the majority of the site (area outside of AEC) is suitable for the proposed development.

Table 1 (following page) provides a summary of AEC at the site, and for each AEC identified contamination and data gaps requiring further investigation and /or remediation and the potential nature and extent of contamination. Comments regarding the *potential* nature and extent of contamination at each AEC are based on the observations made during previous investigations and DPs experience on contaminated land remediation projects on similar development sites in western Sydney.

Table 1: AEC Summary

AEC #	Identified Contamination and Data Gaps	Potential Nature and Extent of Contamination and Investigation Constraints
<b>1 – Market gardens</b>	No broad scale pesticide impacts have been observed in market gardens at the site during previous investigations. Further soil sampling is required to target one market gardening area in the northern part of the site.	DP considers there is a low potential for pesticide impacts associated with market gardens at the site.
<b>2 – Current and Former Structures</b>	Twenty-nine structures have been identified within the site which are grouped as AEC 2. Soil sampling targeting four of the structures was completed during previous investigations. Concentrations of all COPC were below the adopted site assessment criteria (SAC) at all targeted locations. Targeted soil sampling is required at the remaining 25 structures. Inspection of building footprints is also required following demolition of structures.	There is the potential for surface soils in the vicinity of, and beneath, the structures to be impacted by hazardous building materials (commonly metals and asbestos). DP considers that impacts to surface soils (if any) are likely to be in close proximity to the structures and would generate a relatively low volume of soil requiring remediation.
<b>3 – Chemical and fuel storage areas</b>	Twenty-four areas have been identified within the site which are grouped as AEC 3. Soil sampling targeted 14 of the areas during previous investigations. Concentrations of COPC were below the SAC, except for metals at four locations. At these locations, metal concentrations exceeded ecological investigation levels (EIL) as opposed to health investigation levels (HIL). Targeted soil sampling is required at the remaining 10 areas to assess for the presence of contamination and at the four locations where EIL exceedances were identified to determine remediation requirements (if any).	There is the potential for surface soils in the vicinity of the storage areas to be impacted with chemicals stored at those locations. DP considers that impacts to surface soils (if any) are likely to be in close proximity to the structures and would generate a relatively low volume of soil requiring remediation.
<b>4 - Fill Material</b>	Stockpiled and in-situ fill material has been identified in 22 areas of the site (AEC 4A – AEC 4V). Limited investigation of AEC4A to AECL were completed as part of previous investigations. Fill material at AEC4 D, E and H are considered suitable for the proposed use based on the preliminary investigation. Bonded asbestos-containing material (ACM) was observed in five areas (AEC4C, L, S, T and U). Concentrations of other COPC of were below the SAC. Further soil sampling of AEC 4 is required to assess the contamination status and extent of the AEC and to determine remediation requirements.	The concentrations ACM in fill has been not been defined at AEC4C, L, S, T and U with reference to HIL. Further investigation of these AEC is required to determine an appropriate remediation strategy. Sampling of the balance of AEC 4 (excluding AEC4 D, E and H) is required to assess the contamination status of the fill. The extent of AEC 4 is relatively well understood based on field mapping and test pit excavation. DP considered that any further contamination of the fill will potentially be associated with ACM inclusions and metal concentrations as opposed to other COPC.

AEC #	Identified Contamination and Data Gaps	Potential Nature and Extent of Contamination and Investigation Constraints
<b>5 - Timber powder poles</b>	<p>Approximately 24 timber power poles have been identified at the site which are grouped as AEC 5. Soil sampling targeted 16 of the poles during previous investigations. Concentrations of COPC were below the SAC, except for polycyclic aromatic hydrocarbons (PAH) and /or metals which exceeded HIL and / or EIL at four locations.</p> <p>Targeted soil sampling is required at the remaining eight poles to assess the presence of PAH contamination and at HIL/EIL exceedances to determine remediation requirements and extents.</p>	<p>PAH and metal impacted surface soils have been identified in the vicinity of a limited number of timber power poles. The impacted soil will likely require remediation.</p> <p>DP considers that impacts to surface soils are likely to be restricted to the close vicinity (usually within 2 m) of the poles and would generate a relatively low volume of soil requiring remediation.</p>
<b>6 - Possible asbestos pipes</b>	<p>No asbestos pipes have been identified at the site to date.</p>	<p>Buried asbestos pipes (if present) may become apparent during remediation and would normally require remediation under an unexpected finds protocol.</p>
<b>7 - Refuse</b>	<p>The location of surface refuse is readily observable in various parts of the site.</p>	<p>Removal of surface refuse would be required as part of initial site development works.</p>
<b>Effluent Impacts</b>	<p>Soil sampling to assess potential effluent issues was not completed as part of previous investigations. Soil sampling is required to target one area detailed in previous information and in the footprints of septic tank excavations following removal.</p>	<p>There is the potential for soils in the vicinity of the septic tanks to be impacted by faecal coliforms.</p> <p>DP considers that impacts to soil are likely to be restricted to the close vicinity of septic tanks and would generate a relatively low volume of soil requiring remediation.</p>

Based on information provided in Table 1, DP considers the following with respect to the contamination status of identified AEC:

- The location and potential extent of AECs (as shown on Drawing 1) is relatively well understood based on field mapping and test pits completed as part of previous investigations. The extent of any impacts to soil associated with AEC is likely to be restricted to the close vicinity of the AEC. Potential remediation of AEC would generate a small volume of soil relative to the 72-ha development footprint.
- Preliminary investigations have been completed at five of the seven AEC, with soil samples analysed for a range of COPC. Concentrations of all contaminants of concern in samples analysed are below the adopted SAC, except for asbestos, metals and PAH at a limited number of locations. These contaminants are considered non-volatile, will not present a soil vapour risk and are unlikely to impact groundwater.
- Preliminary investigations did not target the following AEC:
  - o AEC 6 (Possible Asbestos Pipes) as asbestos pipes (if present) which become apparent during remediation or earthworks and would be managed under an unexpected finds protocol.
  - o AEC 7 (Refuse) as no further investigation is required given that refuse will be disposal as part of initial development works.
  - o Effluent impacts given the low potential for wide-spread soil contamination.

### 3. Remediation Options Analysis

In general, options for remediation include the following, provided in Section 6 (16) of *Assessment of Site Contamination Policy Framework of Schedules A and B of the NEPM*:

- A. On-site treatment of the soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level;
- B. 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;
- C. Removal of contaminated soil to an approved site or facility, followed where necessary by replacement with clean fill; and
- D. Consolidation and isolation of the soil by on-site containment within a properly designed barrier.

Based on the understanding of the known and potential contamination status of AEC, DP considers that the below remediation strategies would be appropriate to render AEC suitable for the proposed development.

#### Onsite treatment (Option A)

The strategy may be implemented where bonded ACM is identified in fill at concentrations above the SAC. Treatment would involve emu-picking to reduce the concentration of ACM to below the SAC followed by deep burial of the ACM.

If faecal coliforms were identified above the SAC in potential effluent effected areas, the material could be bioremediated with reference to NSW EPA endorsed guidelines.

#### On-site Capping and Containment (Option D)

The strategy may be implemented where asbestos or other COPC (subject to a leachability assessment) are identified at concentrations above the SAC and on-site treatment (Option A) is not considered feasible. The impacted material would be placed in a containment cell under a capping layer and buried at a suitable depth.

The containment cell would require notice on title and the development and implementation of a passive long-term environmental management plan.

#### Offsite Disposal (Option C)

This strategy would be implemented in the event impacted material could not be remediated or managed under remediation Options A or D. Refuse (AEC 7) would be remediated through offsite disposal.

### **4. Scope to Address NSW Planning Requirement**

The high-level scope to address NSW Planning requirements are outlined below.

#### Additional Desktop Assessment

- Obtain and review:
  - o Relevant Council Records.
  - o Section 10.7 certificates.
  - o Current and historic land title deed information.
  - o Records held by SafeWork NSW.
- Document findings of the review.

#### Detailed Site Investigation

- Targeted and systematic investigations of AEC 1 to 5 to meet the minimum sampling densities prescribed in *Contaminated Sites, Sampling Design Guidelines* (NSW EPA, 1995). Where asbestos is suspected or present, intrusive investigations will be undertaken to meet the minimum sampling densities prescribed in *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (WA DoH, 2009).

- Intrusive investigations will additionally target the potential effluent affected area discussed in the NSW Planning letter.
- Analysis of samples for contaminants of potential concern.
- Data compilation and reporting with reference to the requirements of *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended 2013) (NEPC, 2013).

DP anticipated that the DSI will potentially identify further asbestos, metal and PAH impacted soil within or immediately adjacent to the previously identified AEC. DP considers that it is unlikely that widespread contamination or contaminants that present a soil vapour risk, or a risk to groundwater, will be identified during the DSI.

#### Remediation Action Plan

- The RAP will include the remediation options discussed in Section 4.
- The RAP will include provision for the validation of all remediation, including septic tanks as per NSW Planning requirements.

## **5. Summary**

Based on the findings of previous investigations, DP considers that the majority of the site is currently suitable for the proposed development. Further investigations are required to confirm the contamination status of selected areas of environmental concern (AEC) within the site and to provide data to assist in the development of a remediation action plan. DP considers the following with respect to the contamination status of AEC:

- The location and potential extent of AEC is relatively well understood based on field mapping and the previous investigations. Potential remediation of AEC would generate a small volume of impacted soil relative to the 72-ha development footprint.
- Preliminary investigations have identified concentrations of contaminants of potential concern are below the SAC, except for asbestos, metals and PAH at a limited number of locations. These contaminants are considered non-volatile, will not present a soil vapour risk and are unlikely to impact groundwater.

DP anticipate that the DSI may identify further localised contamination at the site. However, it is considered that it is likely to be similar in nature to that already identified, ie asbestos, metal and PAH, which do not present a soil vapour risk, or a risk to groundwater.

Based on the understanding of the known and potential contamination status of the site, DP considers that the below remediation strategies would be appropriate to render AEC suitable for the proposed development.

- On-site Treatment and Burial.
- On-site Capping and Containment.

- Off-site Disposal.

All of the above remediation strategies are considered straight forward and standard practice in the context of commercial / industrial development.

Based on the known and potential contamination at the site, as well as above discussed viable remediation options, DP considers that the site can be made suitable for the proposed development. Given site access constraints and the active nature of the site, the completion of the additional contamination investigations and reporting, and remediation and validation, could be conditioned on the development consent to be completed prior to other works with reference to (NSW DUAP/EPA, 1998).

## 6. References

NEPC. (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]*. Australian Government Publishing Services Canberra: National Environment Protection Council.

NSW DUAP/EPA. (1998). *Managing Land Contamination, Planning Guidelines, SEPP 55 – Remediation of Land*. NSW Department of Urban Affairs and Planning / Environment Protection Authority.

NSW EPA. (1995). *Contaminated Sites, Sampling Design Guidelines*. NSW Environment Protection Authority.

WA DoH. (2009). *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*. WA Department of Health.

This letter should be read in conjunction with the limitations outline in DP (2020). Please contact the undersigned if you have any questions on this matter.

Yours faithfully

**Douglas Partners Pty Ltd**



**Rod Gray**  
Senior Associate

Reviewed by



**Tim Wright**  
Principal

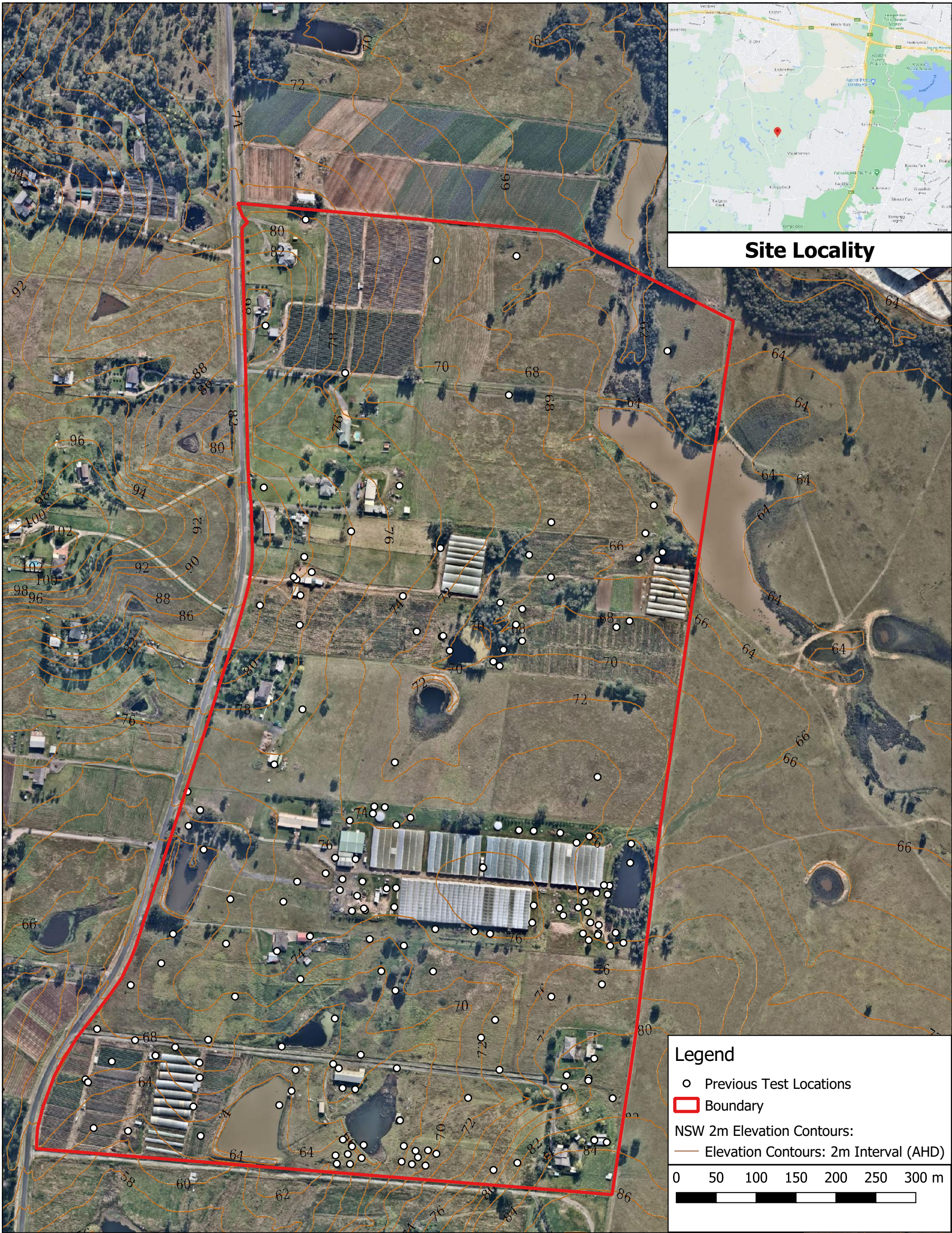
Attachments:      Limitations  
                         Drawings 1 and 2



## Limitations

Douglas Partners Pty Ltd (DP) has prepared this report for this project at 200 Aldington Road, Kemps Creek in accordance with DP's proposal 92421.01.P.001.Rev0 dated 15 February 2020. The work was carried out under Fife Kemps Creek Pty Limited Contract Standard Consulting Terms (Design). This report is provided for the exclusive use of Fife Kemps Creek Pty Limited for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.





**Site Locality**

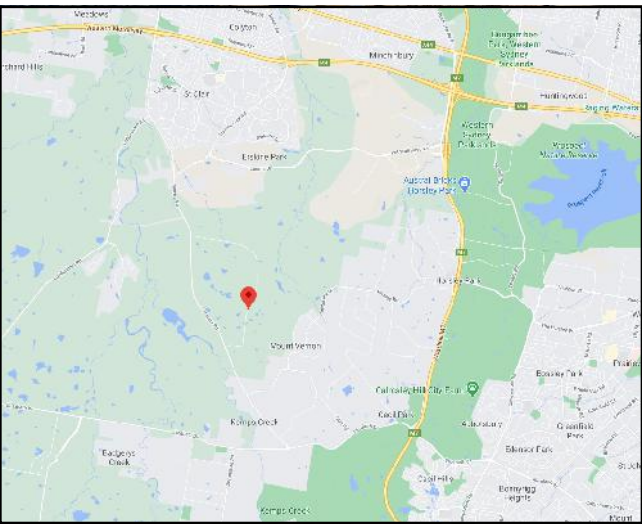
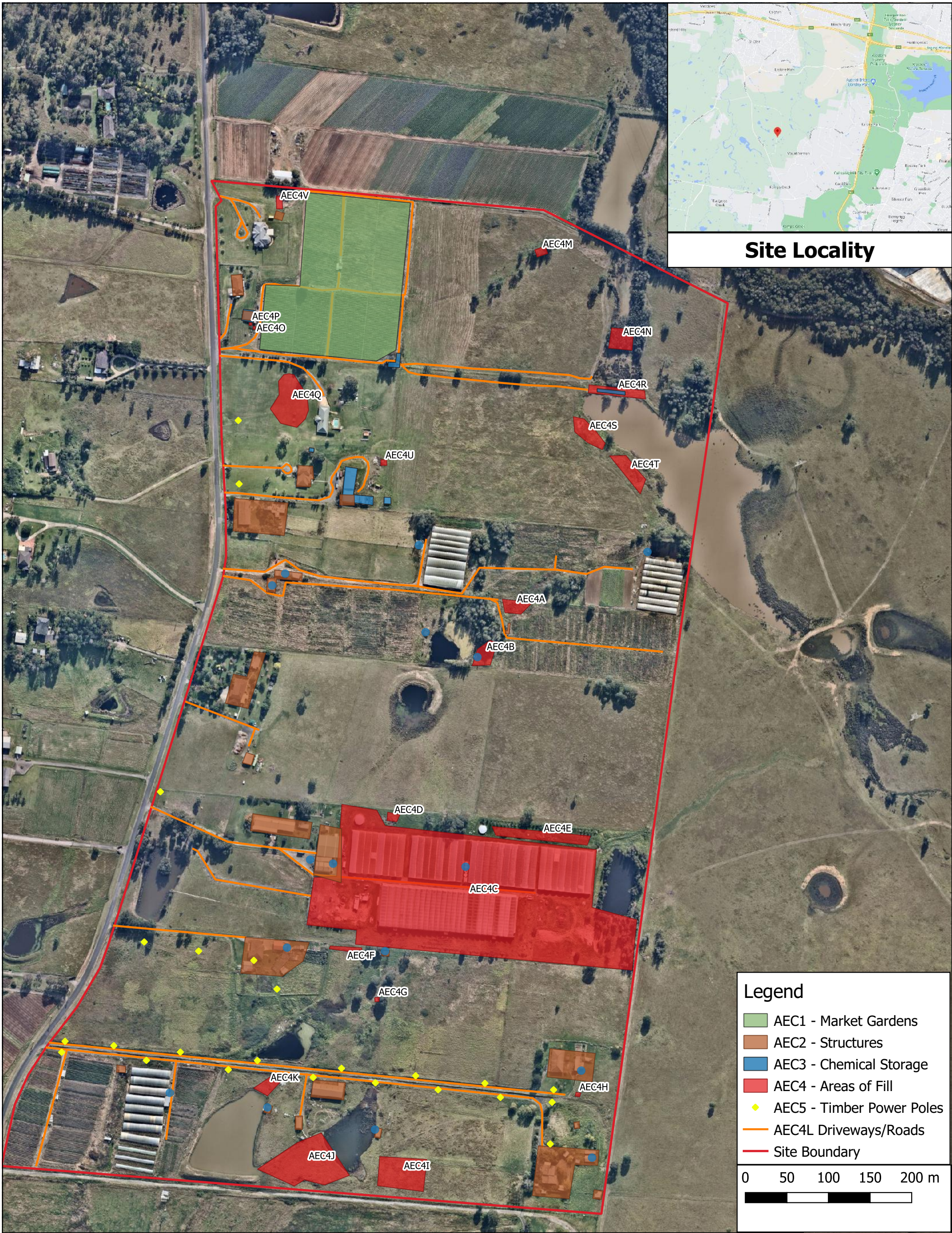
**Legend**

- Previous Test Locations
- ▭ Boundary

NSW 2m Elevation Contours:  
— Elevation Contours: 2m Interval (AHD)

0 50 100 150 200 250 300 m

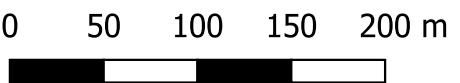




Site Locality

Legend

- AEC1 - Market Gardens
- AEC2 - Structures
- AEC3 - Chemical Storage
- AEC4 - Areas of Fill
- AEC5 - Timber Power Poles
- AEC4L Driveways/Roads
- Site Boundary



TITLE: **Site and AEC Locations**  
**Contamination Status Summary Report**  
**200 Aldington Road, Kemps Creek**



OFFICE: Macarthur  
DRAWN BY: SJC  
DATE: 26th February 2021  
SCALE: As Shown

CLIENT: Fife kemps Creek Pty Ltd

PROJ. #: 92421.01.R.001

DRAWING No: 1

REVISION: 0