Geotest Services

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27th April 2016

Our Ref. P7923.1_L02

Craig and Rhodes Pty Ltd
Minh Vu
PO Box 233
Epping NSW 1710
E – Mvu@crhodes.com.au

Re: Site Contamination and Salinity Report Review & Statement of Suitability; Lot 1 in DP 661031 & Lot 1 in DP 6687728; Camden Valley Way, Edmondson Park NSW

Introduction

Geotest Services was engaged by Craig and Rhodes P/L to carry out a review of an existing Preliminary and Detailed Site Investigation report and two salinity assessment reports prepared for the site. The site is identified as Lot 1 in DP 661031 & Lot 1 in DP 668728, also identified as 2102-2116 Camden Valley Way, Edmondson Park. The investigation reports were prepared by Geotest Services Pty Ltd in December 2014. It is understood the review of existing reports is being carried out to ensure the earlier reports remain relevant and provide a suitable characterisation of the current site condition. The reports referred to are:

- Preliminary and Detailed Site Investigation Report; 2102-2116 Camden Valley Way Edmondson Park (Lot 1 in DP 661031 & Lot 1 in DP 668728), Geotest Services Pty Ltd Report Ref. P7503/1_R01, Dated 8 December 2014 (GTS2014);
- Salinity Assessment Report; Lot 1 Camden Valley Way Edmondson Park (Lot 1 in DP 668728), Geotest Services Pty Ltd Report Ref. P7503/2a, Dated 12 December 2014 (GTS2014a); and
- Salinity Assessment Report; Lot 1 Camden Valley Way Edmondson Park (Lot 1 in DP 661031), Geotest Services Pty Ltd Report Ref. P7503/2b, Dated 12 December 2014 (GTS2014b);

Objective

The objective of this letter was to review the information presented within the site investigation reports and determine if the 2014 information still provides adequate characterisation of the site.

Scope of Works

To achieve the objectives, Geotest undertook the following scope of works:

- Review of available site contamination and site salinity reports;
- Review of available aerial photographs for the period December 2014 to current;
- Site inspection to address current land uses;

- Assessment of observations; and
- Preparation of this letter.

Review Summary

- Geotest carried out a review of existing reports GTS2014, GTS2014a and GTS2014b. Geotest notes that the site assessment criteria adopted during the investigation and assessment works are current as of April 2016 and the reports have been prepared in accordance with industry accepted guidelines.
- Geotest carried out a review of available aerial photography at the site from the period of December 2014 to current. Observations made during the review reveal the site to remain generally unchanged during this period. Geotest did not observe any signs of significant site activity and the subject lands remain to consist of rural residential occupancy, some light farming and the grazing of livestock.
- An inspection of the site was carried out by an experienced environmental consult on 8th April 2016. The inspection area included Lot 1 in DP 661031 & Lot 1 in DP 668728. During the inspection, it was noted that the lands did not appear to display any evidence of recent earthworks activity, disturbance of soils (excluding limited market gardening as identified within Geotest 2014 reports) nor additional storage of domestic belongings at the site. It was noted that vegetation at the site has become overgrown since 2014 investigations. All previously reported structures remain at the site.

Report Suitability Statement

Based on the review of existing reports, review of recent aerial photography (>2014) and the site walkover inspection; Geotest considers the existing reports GTS2014, GTS2014a and GTS2014b prepared by Geotest Services Pty Ltd in 2014 to be a suitable and accurate reflection of current conditions observed at the site Lot 1 in DP 661031 & Lot 1 in DP 668728; 2102-2116 Camden Valley Way, Edmondson Park.

The reports GTS2014, GTS2014a and GTS2014b have been prepared in accordance with current industry investigation guidelines relevant at this time.

We trust this letter is satisfactory for your needs, if you require any further information please do not hesitate to contact me.

Regards,

Alan Halpin

Environmental Operations Manager

E. alan@geotestservices.com.au

Attachments:

- Site Photographs (8th April 2016)
- Preliminary and Detailed Site Investigation Report; 2102-2116 Camden Valley Way Edmondson Park (Lot 1 in DP 661031 & Lot 1 in DP 668728), Geotest Services Pty Ltd Report Ref. P7503/1_R01, Dated 8 December 2014 (GTS2014);

Geotest Services

- Salinity Assessment Report; Lot 1 Camden Valley Way Edmondson Park (Lot 1 in DP 668728), Geotest Services Pty Ltd Report Ref. P7503/2a, Dated 12 December 2014 (GTS2014a); and
- Salinity Assessment Report; Lot 1 Camden Valley Way Edmondson Park (Lot 1 in DP 661031), Geotest Services Pty Ltd Report Ref. P7503/2b, Dated 12 December 2014 (GTS2014b);

Geotest Services

Geotest 8th April 2016 Inspection Images

Showing site conditions reflective of existing 2014 reports

Showing site conditions reflective of existing 2014 reports

Showing site conditions reflective of existing 2014 reports

Showing site conditions reflective of existing 2014 reports

Showing site conditions reflective of existing 2014 reports

Preliminary & Detailed Site Investigation Report

2102-2116 Camden Valley Way
Edmondson Park NSW
(Lot 1 in DP661031 & Lot 1 in DP668728)

Project Ref. 7503/1_R01

08 December 2014

Client:Okinawa Pty Ltd

Craig & Rhodes Pty Ltd.
Minh Vu
PO Box 233
Epping NSW 1710

Report Approved by:

David Spasojevic

General Manager

Geotest Services

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8th December 2014

Minh Vu
Craig & Rhodes
PO Box 233
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Via Email: mvu@crhodes.com.au

Covering Letter for Detailed Site Investigation Report; Edmondson Park NSW

Dear Minh,

Please find enclosed the Site Investigation report prepared by Geotest Services for 2102-2116 Camden Valley Way Edmondson Park NSW. Should you have any queries regarding the report and its contents please do not hesitate to be in contact with the undersigned.

We look forward to assisting Craig & Rhodes continually achieve successful developments long into the future.

Regards,

Dave Spasojevic

General Manager

Mob. 0408 202 565

EXECUTIVE SUMMARY

This report presents the investigation results of a combined Preliminary and Detailed Site Investigation undertaken by Geotest Services Pty Ltd (Geotest) at 2102-2116 Camden Valley Way Edmondson Park NSW (the Site). This report was commissioned by Minh Vu of Craig & Rhodes P/L on behalf of his client to address procurement, development and planning requirements for the proposed metropolitan style low density residential subdivision at the Site. The Site is legally defined to include registered Lot 1 in DP661031 (herein referred to as Site A) and Lot 1 in DP668728 (herein referred to as Site B) and occupies approximately 7.1 ha. The street address of Site A and Site B is 2116 and 2102 Camden Valley Way, NSW, respectively.

The objective of this investigation was to assess for the likelihood of contamination to exist on the Site. The objective of this investigation was to identify any areas requiring remediation based on the representative sampling. The objective was also to determine whether the Site would be suitable for the proposed future low density residential land use.

To achieve the objectives, Geotest undertook the following scope of works; review of available geology, hydrogeology and topographical maps; review of historical aerial photographs; land title ownership record searches; NSW OEH contaminated land register search; NSW Office of Water registered groundwater bore search (500m radius of the site); Obtain and review the Section 149 (2) planning certificates; site walkover to observe current site conditions and surrounding land uses; review of preliminary findings; preparation of site sampling plan - targeting areas of environmental concern; site works including test pit excavation and soil sampling; NATA accredited laboratory analysis; and interpretation of data and reporting.

A review of the available historical data and observations made during the Site walkover indicate a number of potential areas of environmental concern (AEC) and associated contaminants of potential concern (COPC). These included former grazing areas, former market gardens, localised filling and disturbed soils, demolition of former structures, above ground storage tanks (ASTs) for diesel/ fuels, ACM sheds and debris, and general domestic and residential uses.

A total of 75 sampling points were established and included; test-pits undertaken for environmental and geotechnical investigations; sample collection and sample compositing for laboratory analysis; and selected test-pits undertaken for visual inspection across the entire site to ensure geology and substrate consistency. Generally there was good access to all site areas and there are only a couple of minor locations where investigations could not be successfully conducted.

The results of the laboratory analysis indicate that the analysed contaminant concentrations of concern in soils at the sampling locations were less than the adopted human health assessment criteria – Table 1 (a) Column HIL A (NEPM 2013). However, non-friable ACM fragments were observed at a number of localised areas across the site. In these areas, the ACM should be removed and the soil matrix validated. The contamination is expected to be near surface only. In addition, it is important that during the de-vegetation and stripping of the site that close observations are made for any further potential asbestos fragments. The following aesthetic issues were observed:

- One empty AST and six empty 100L oil drums were identified to the south of the dwelling at Site B.
- ACM fragments were identified at the following locations:
    - A significant quantity of PACM roofing was stored immediately to the south of the sheds at Site A;
    - Some PACM sheeting was observed to be used as soil retainers to the south of the residential property at Site A;
    - The driveway of Site A was an unsealed gravelly track with many ACM fragments observed on the surface, we recommend further investigation and separation of these gravels in the meantime.
    - One potential asbestos containing material (PACM) pipe was observed in the area of debris storage to the south of the dam at Site B;
    - Fragments of PACM were observed on the ground surface at the southern side of the tin sheds at Site B; and
    - Two to three sheets of PACM were observed to the south of the dwelling at Site B.

Geotest concluded that; based on the desktop investigation, the site inspection and observations collected during site works and the interpretation of laboratory data that the site is considered suitable for the proposed residential land uses subject to lawful demolition, minor remediation and clean-up (ground preparation works). It is expected that only following these works including

removal of asbestos contaminated building materials, the site may be considered suitable for future residential land-uses from a contamination perspective. We make the following recommendations to address general preparation and land use contamination matters at the site -

- A detailed hen pick of all areas where ACM was observed on the ground surface, surrounding ACM sheds, structures and any debris on the ground for removal of ACM fragments to prevent accidental spreading of materials on-site. This should include independent validation by an experienced consultant.
- Lawful demolition by a licensed DE-2 contractor of all structures at the site.
- Lawful waste disposal of all asbestos, building, and general waste from the site and provision of dockets.
- General rubbish clean up and removal from site.
- Lawful disposal of the AST as per the relevant COP and provision of destruction certificate for validation report. Following removal and destruction, an environmental consultant should attend to validate the footprint of the AST structure.
- Lawful disposal of the 100L oil drums in the area to the south of the dwelling at Site B, provision of waste dockets. Following removal, an environmental consultant should attend to validate the footprint of the oil drums.
- Following demolition and clean-up of the disturbed areas, residential area and sheds etc. the building footprints and demolition work area should be inspected and validated by an appropriately experienced consultant.
- Inspection of the dam following de-watering and an assessment of the silt removed from the base prior to re-use at the site. This also includes the safe removal of any debris and waste commonly found within farm dams.

Further, during the remediation works at the site, in the event that any un-expected finds are identified, an appropriately experienced consultant should be engaged to attend site. The works should cease immediately in the area of the discovery.

This executive summary should be read in conjunction with the remainder of its report.

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1 INTRODUCTION & SITE IDENTIFICATION

This report presents the investigation results of a combined Preliminary and Detailed Site Investigation undertaken by Geotest Services Pty Ltd (Geotest) at 2102-2116 Camden Valley Way Edmondson Park NSW (the Site). This report was commissioned by Minh Vu of Craig & Rhodes P/L on behalf of his client to address procurement, development and planning requirements for the proposed metropolitan style low density residential subdivision at the Site.

The Site is legally defined to include registered Lot 1 in DP661031 (herein referred to as Site A) and Lot 1 in DP668728 (herein referred to as Site B) and occupies approximately 7.1 ha. The street address of Site A and Site B is 2116 and 2102 Camden Valley Way, NSW, respectively. For ease of reference to report figures, Site A is located to the east of Site B.

The locality of the Site is presented in Figure 1 and a detailed layout of Site is included in Figure 2.

The site is approximately rectangular and covers an area of approximately 7.1 hectares. The site has a geographical coordinate (as measured on the NSW Department of Lands) of: 303005.522 E, 6240477.223 N.

1.1 Objectives

The objective of this investigation was to assess for the likelihood of contamination to exist on the Site.

The objective of this investigation was to identify any areas requiring remediation based on the representative sampling.

The objective was also to determine whether the Site would be suitable for the proposed future low density residential land use.

1.2 Scope of Works

To achieve the objectives, Geotest undertook the following scope of works;

- review of available geology, hydrogeology and topographical maps;
- review of historical aerial photographs;
- land title ownership record searches;
- NSW OEH contaminated land register search
- NSW Office of Water registered groundwater bore search (500m radius of the site);
- Obtain and review the Section 149 (2) planning certificates from Liverpool Council;
- Site inspection and walkover to observe current site conditions and surrounding landuses;
- review of preliminary findings;
- preparation of site sampling plan - targeting areas of environmental concern;
- site works including test pit excavation and soil sampling;
- NATA accredited laboratory analysis; and
- Interpretation of data and reporting.

Geotest has also prepared a Salinity Assessment for the site. This has been presented as separate document.

2 REGIONAL GROUND SETTING

2.1 Regional Geology

The Geological Survey of NSW (1991) Penrith Geological Series Sheet 9030 (1:100,000) indicates that the site is located on Middle Triassic Wianamatta Group Bringelly Shale. The lithology is described as shale, carbonaceous claystone, claystone, laminite, fine to medium-grained lithic sandstone, rare coal and tuff.

The Soil Conservation Service of NSW (1989) Penrith Soil Landscape Series Sheet 9030 (1:100,000) indicates that the site is located on the Blacktown soil landscape. These soils are shallow to moderately deep (<100cm) hardsetting mottled texture contrast soils, *red and brown podzolic soils (Dr3.21, Dr3.31, Db2.11, Db2.21)* on crests grading to *yellow podzolic soils (Dr2.11, Dy3.11)* on lower slopes and drainage lines. The limitations of these soils are mass movement potential and localised shallow soil stoniness.

2.2 Regional Topography and Drainage

The NSW Land and Property Management Authority Spatial Imagery Exchange (http://imagery.maps.nsw.gov.au accessed on 1 December 2014) indicates that the site is located at an elevation ranging from 40 to 50m Australia Height Datum (AHD).

The site generally slopes downwards to the north, towards Camden Valley Way. Two dams are located in the centre of the site, one at Site A and one at Site B. Due to the majority of the site being unsealed, precipitation is expected to infiltrate surface soils until saturation. After soils reach saturation, surface water is expected to flow towards the dams in the centre of the site and/or towards Camden Valley Way.

The nearest surface water receptor was an unnamed concrete stormwater channel approximately 30 m to the north of the Site. The channel flowed north-east to Maxwells Creek which continues north to Cabramatta Creek which drains to the George River.

2.3 Regional Hydrogeology

A search for registered groundwater bores within a 500m radius of the Site was conducted using the NSW Natural Resources Atlas (http://www.nratlas.nsw.gov.au). No bores were located within 500 m of the Site.

2.4 Acid Sulphate Soils

The Department of Land and Water Conservation (1997) Liverpool Acid Sulphate Soil Risk Map – Edition Two indicates that the site is located in an environment where acid sulphate soils are not known or expected to occur. Land management activities are not likely to be affected by acid sulphate soil materials.

3 SITE HISTORY

3.1 Land Titles

A search of historical land title ownership records search was carried out for the Site. A review of these records provided a source of information which may relate to potential or likely historical land use on the site. A summary of the ownership record is presented below –

Site A – Lot 1 in DP661031

1862 – 1968 farmers

1968 – present Market gardeners (S. & A. Leotta)

Site B – Lot 1 in DP668728

1862 – 1968 farmers

1968 – present Machinist (A. & A. Acuri)

Based on this information the Site appears to have been held by farmers, market gardeners and trades people. This information will be used to support interpretation of areas of environmental concern (AECs) that may be present.

3.2 Section 149 Certificate

The section 149's have been requested from council however not yet received at the time this report was prepared. It is unlikely based on the history of the site that the land will be notified or regulated under the CLM Act 1997.

Upon receipt of the S149's, Geotest will revise this report to include the results.

3.3 NSW Office of Environment and Heritage Contaminated Land Record

Geotest conducted a search NSW Office of Environment (OEH) contaminated land record information on 30 November 2014. The search did not identify any contaminated land record for the Site or for the properties located adjacent to the Site. A copy of the search record is presented in Appendix A.

3.4 Aerial Photography

Geotest reviewed a selection of historical aerial photographs for the site during the preliminary investigation works and makes the following comments regarding land use at the site and surrounding the site -

- In the 1947 image (first available) the site is un-developed and the boundaries are undefined. The site is open pastoral paddock land with scattered woodlands.
- In the 1955 image the site appears to have been potentially fenced and lot boundaries in the broader area can be identified. It is difficult to determine whether the sheds/ cottages on the lots in the area are on the subject lots for investigation or on adjoining properties.
- In the 1970 image the site has been developed, residence's built and both lots are being heavily used for market gardening/ cropping and farming purposes. The dams are present on both properties and the existing structures a, sheds and houses toward Camden Valley Way on both lots are present. Well defined crops are present, there appears to be a small dam to the south of Lot (a) which is likely the dam present today and is on the adjoining lot.
- In the 1986 image no significant changes are apparent at the land and it continues to be used for rural residential and market gardening/ farming purposes. The dams and other structures at the site generally remain unchanged. Surrounding land use appears to remain rural residential and farming also, consistent with the history of this area.
- In the 1994 image market gardening only appears to be actively undertaken on Lot (a) with Lot (b) showing grass and un-scarred paddocks. The properties continue to be used for rural residential. Market gardening in the broader area is

generally decreasing. A number of green houses have been constructed since the last image and are present to the south of Lot (b), on this lot is also a number of vehicles and storage containers from appearance. Prestons metropolitan area to the north is under-construction and ongoing sub-division.

- In the 2002 image no significant changes have occurred at the site and scattered market gardening is present at both properties (at a minor scale). No significant land use changes have occurred surrounding the site. It appears the religious institution to the west is under construction.
- In the 2005 – 2013 online imagery there does not appear to be any significant changes in land use at either lot. They remain primarily used for rural residential and open space with scattered market gardens, more so on Lot (b). The surrounding land use continues to be used for rural residential with an increasing number of metropolitan style residential subdivisions being undertaken. The religious institution to the west of the site appears to have been constructed in 2000 – 2005 and then continues to be improved until approximately 2009.

4 SITE WALKOVER

A site walkover was conducted on 30th October 2014 by an Environmental Scientist of Geotest Services. At the time of the walkover, the weather was clear. Observations made during the walkover are presented in Sections 4.1 to 4.11.

4.1 Site Comments & Anecdotal Information

Observations made at the time of the Site walkover are presented below.

Site A – Lot 1 in DP 661031

- The site was currently used for rural residential purposes, market gardening and livestock grazing.
- The site consisted of a dwelling, driveway, paddocks, a man-made dam and various sheds and small stockpiles;
- A single story clad residential dwelling was present in the centre of the site. Building materials are suspected to comprise asbestos containing materials (ACM).
- The driveway was approximately 140 m in length from Camden Valley Way to the dwelling. The driveway was an unsealed gravelly track with many ACM fragments observed;
- The majority of the site was grass paddock. All vegetation appeared to be in a healthy condition with no signs of stress or significant die back.
- A man made dam with an approximate area of 1,400 m^2 was present in the centre of the eastern boundary. A pump house was located adjacent to the north-west of the dam, with pumps and belongings stored within.
- A number of work sheds were observed in the vicinity of the dwelling, with ACM identified in building materials. A significant quantity of PACM roofing was stored immediately to the south of the work sheds.
- Some PACM sheeting was observed to be used as small soil retainers to the south of the residential property.
- Fill material was observed in the following locations/stockpiles:
    - To the north, west and south of the dam, generally consistent with dam construction;
    - To the west of the dam in two locations, not consistent with dam construction; and
    - In four small soil stockpiles located in the north of the site;
- A shredded timber product was observed at the south of the site, generally spread across the surface; and
- Some vehicle tyres were observed in the south-eastern corner of the site.

Site B – Lot 1 in DP 668728

- The site is currently used for rural residential purposes and livestock grazing.
- The site consisted of a dwelling, driveway, paddocks, a man-made dam and various sheds and small stockpiles;
- The dwelling was a single storey clad building in the centre of the site. Building materials are suspected to comprise ACM;
- The driveway was approximately 130 m in length from Camden Valley Way to the dwelling.
- The majority of the site was vacant land covered in grasses and some active market gardening was observed.
- A man made dam with an approximate area of 2000 m^2 was present in the centre of the western boundary.
- Some tin storage / work sheds were present at the north of the site.
- Fill material was observed in the following locations/stockpiles:
    - A small stockpile of concrete and rubble was observed adjacent to the driveway in the northern portion of the site;
    - A small silty soil stockpile/loading ramp was observed to the north of the dwelling;
    - Soil fill was observed to the south of the dam, consistent with dam construction earthworks;
- A rubble and other debris storage area observed to the. Mostly compiling of steel, some plastics, some rubble and a vehicle. One potential asbestos containing material (PACM) pipe was south of the dam observed in this area;
- Fragments of PACM observed on the surface at the southern side of the tin sheds, along with storage of other items such as scrap metal and timber.

- Some 100L oil drums and two to three sheets of PACM were observed to the south of the dwelling;
- An above-ground storage tank (AST) was located to the east of the dwelling. At the time of the inspection, the AST was observed to be empty and the previous contents were unknown.
- The grassed paddocks and vegetation all appeared to be in a healthy condition with no obvious signs of significant die back.
- In addition, a driveway was located between Site A and Site B which was used to access a car scrap yard and market garden to the south of Site B.

4.2 Site Activities

At the time of inspection the site was not used for any purpose other than residential occupancy. At the time of inspection, no significantly contaminating activities were observed.

4.3 Chemical Spills and Losses

No evidence of significant chemical spills, losses or staining were observed across either sites. No anecdotal information or historical information regarding spills at the Site was revealed.

4.4 Underground and Aboveground Storage Tanks

One empty (assumed diesel) AST, with a capacity estimated to be 500 L, was observed to the east of the dwelling at Site B. The previous contents were unknown and there were no observed odours or staining in the vicinity of the AST.

Approximately six, empty 100L oil drums were identified to the south of the dwelling at Site B. There were no observed odours or staining in the vicinity of the oil drums.

4.5 Waste Management

There was no evidence of large scale commercial or agricultural wastes present at the site. There was some domestic wastes observed surrounding sheds and disturbed areas. This is typically expected in rural residential premises.

4.6 Discoloured Soils & Odours

Generally, Geotest did not observe significant discolouration of soils or odours at the site during the walkover.

4.7 Phytotoxicity

No evidence of wide spread phytotoxic impact (e.g. stress or dieback) on vegetation was observed across the site.

4.8 Hazardous Materials

ACM fragments were identified at the following locations:

- A significant quantity of PACM roofing was stored immediately to the south of the sheds at Site A;
- Some PACM sheeting was observed to be used as small soil retainers to the south of the residential property at Site A;
- The driveway of Site A was an unsealed gravelly track with many ACM fragments observed on the surface;
- One potential asbestos containing material (PACM) pipe was observed in the area of debris storage to the south of the dam at Site B;
- Fragments of PACM were observed on the ground surface at the southern side of the tin sheds at Site B; and
- Two to three sheets of PACM were observed to the south of the dwelling at Site B.

Geotest did not make a comprehensive assessment of the buildings and sheds present at the site. ACM was observed to have been used in some building materials of most buildings at the site. During demolition and re-development of the site special attention should be given to these areas to prevent the un-necessary spread of contamination. Further, the presence for contamination in areas of long grass cannot be discounted. Please see figure below for locations:

4.9 Fill Material

Fill material was observed in the following locations/stockpiles at Site A:

- To the north, west and south of the dam, generally consistent with dam construction;
- To the west of the dam in two locations, not consistent with dam construction; and
- In four small soil stockpiles located in the north of the site;

Fill material was observed in the following locations/stockpiles at Site B:

- A small stockpile of concrete and rubble was observed adjacent to the driveway in the northern portion of the site;
- A small silty soil stockpile/loading ramp was observed to the north of the dwelling;
- Soil fill was observed to the south of the dam, consistent with dam construction earthworks.

The material was observed to be consistent with local clay geological conditions and did not show obvious signs of contamination. It is also likely that a number of other areas at the site have been re-contoured for water storage and shaped for domestic purposes. These include such features as dam bunds, level pads for shed/ house construction and retaining walls. In most cases these features are simply ‘cut to fill’ using existing on-site materials however the potential for imported debris/ waste or spoil

cannot be discounted. Geotest will target potential areas of fill during the intrusive investigation where possible however can never guarantee the presence of in-filled wastes.

4.10 Complaint & Incident History

No evidence of complaints or environmental incidents regarding the site was discovered.

4.11 Surrounding Land Use

During the Site walkover, it was observed that the general land use surrounding the site is rural residential and open paddocks with minor market gardening and other miscellaneous uses.

Boundary	Land Use
North	Camden Valley Way, beyond which was residential.
East	Adjoining rural residential property and paddocks
South	Adjoining rural residential property with multiple vehicles stored and a market garden
West	A mosque, beyond which was rural residential

5 DATA RELIABILITY

During the preliminary investigation conducted at the site Geotest sought information from the following sources:

- Advanced Legal Searchers;
- Department of Land and Property Information (LPI);
- DNR / DPI Acid Sulphate Maps;
- Liverpool Council;
- MapSales;
- NRA Atlas
- NSW OEH;
- NSW Natural Resources Atlas; and
- Observations made in the field during the Site walkover.

Geotest considers that the data is generally representative of past and present site conditions and observations made personally by us.

6 AREAS OF ENVIRONMENTAL CONCERN AND CONTAMINANTS OF POTENTIAL CONCERN

A review of the available historical data and observations made during the Site walkover indicate a number of potential areas of environmental concern (AEC). The possible contaminants of concern are also included below along with mitigation strategies and Geotest comments -

Item	AEC	Location on-site	COPC	Mitigation Strategy	Geotest Comment
1	Historical grazing (pre site occupation)	Site	Very Low Risk	Not required	
2	Historical market gardening activities, farming and cropping, potential pesticide spills	Majority of site excluding the residential area, minor domestic scale remains active. Multiple shed locations, particularly in northern area of site	OCP, OPP, Metals contamination, Low Risk	Target with intrusive investigation	
3	Surface filling for levelling and contouring purposes, Cut to fill of dam bunds General filling of land Imported fill (and placement)	Dam bund walls at Site A and Site B In two locations west of the dam at Site A. Four small stockpiles in the north of Site A. One rubble stockpile in the north of Site B Stockpile/loading zone north of the Site B dwelling.	Imported materials – PAH, Metals (8), TPH/BTEX, OCP and asbestos	Target with intrusive investigation	Generally 'cut to fill' activities were performed using existing materials sourced from the site.
5	Fill under house footprints and in disturbed areas, potential contamination through slabs (sheds)	Under/adjoining buildings or structures	Asbestos, Metals (8), HCs Moderate Risk – minor occurrences	Investigation post-demolition	Recommend following demolition further inspection of building footprints.
6	Above ground fuel storage tank (AST)	To the east of the dwelling at Site B	Hydrocarbons. (HCs) Moderate Risk of spills and localised contamination	Target during investigation as much as practically feasible	
7	Six empty 100 L oil drums	To the south of the dwelling at Site B	Hydrocarbons. (HCs) Moderate Risk of spills and localised contamination	Target during investigation as much as practically feasible	
8	Suspected asbestos sheeting on ground	PACM roofing to the south of the sheds at Site A. PACM sheeting used as small soil retainers to the south of the residential property at Site A. The driveway of Site A. PACM pipe observed in the area of debris storage to the south of the dam at Site B.	Asbestos	Target during investigation as much as practically feasible	Inspection of all areas will be difficult due long vegetation / difficult obstacles.

		Fragments of PACM on the ground surface at the southern side of the tin sheds at Site B. Two to three sheets of PACM observed to the south of the dwelling at Site B.			
9	Suspected ACM and/or lead paint in building materials.	Suspected ACM was observed to have been used in construction materials of most site buildings.	Asbestos and lead paint.	Investigation pre-demolition	

7 SITE ASSESSMENT CRITERIA

To assist with further assessment and post-remediation validation works, site criteria have been adopted. These criteria were adopted based on the following published guidance documents:

- NEPM 'National Environmental Protection (Assessment of Site Contamination) Measure 1999 (April 2013), EPHC 2013, Canberra, incorporating CRC Care 2012.
- NSW DEC 2005, Contaminated Sites: Guidelines for Assessing Former Orchards and Market Gardens', ISBN 1 74137 019 1, Department of Environment and Conservations NSW.
- NSW DEC 2006, 'Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd edition)' ISBN 1 74137 859 1, Department of Environment and Conservation NSW.
- NSW EPA 1995, 'Contaminated Sites: Sampling Design Guidelines', ISBN 0 7310 3756 1.
- NSW OEH 2011, 'Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites', ISBN 0 7310 3892 4, NSW Office of Environment and Heritage.

A discussion on the adoption of criteria is presented in the following sections.

7.1 Soils

Given the intended future use of the site is residential land use, the health-based investigation levels (HIL) for residential with accessible gardens and soil land uses were selected (Column A in Table 1A (1) NEPM 2013). The extracted table below provides a summary of concentrations adopted for the various land-use types. Not all site specific investigation levels (SILs) are necessarily listed in this table.

NSW DEC (2005) provides guidance on assessing laboratory analytical results of composite samples, against 'adjusted' SILs. As information on background concentrations was not available for this assessment, a more conservative approach should be adopted when assessing composite sample results, against the SILs published in NEPM 2013 (supersedes NSW DEC 2005). Subsequently, Procedure 2b in NSW DEC (2005) has been used to adjust 2013 SILs for assessment of composite samples.

Table 1A(1) Health investigation levels for soil contaminants

Chemical	Health-based investigation levels (mg/kg)			
	Residential[1] A	Residential[1] B	Recreational[1] C	Commercial/ industrial[1] D
Metals and Inorganics				
Arsenic[2]	100	500	300	3 000
Beryllium	60	90	90	500
Boron	4500	40 000	20 000	300 000
Cadmium	20	150	90	900
Chromium (VI)	100	500	300	3600
Cobalt	100	600	300	4000
Copper	6000	30 000	17 000	240 000
Lead[3]	300	1200	600	1 500
Manganese	3800	14 000	19 000	60 000
Mercury (inorganic)[5]	40	120	80	730
Methyl mercury[4]	10	30	13	180
Nickel	400	1200	1200	6 000
Selenium	200	1400	700	10 000
Zinc	7400	60 000	30 000	400 000
Cyanide (free)	250	300	240	1 500
Polycyclic Aromatic Hydrocarbons (PAHs)				
Carcinogenic PAHs (as BaP TEQ)[6]	3	4	3	40
Total PAHs[7]	300	400	300	4000
Phenols				
Phenol	3000	45 000	40 000	240 000
Pentachlorophenol	100	130	120	660
Cresols	400	4 700	4 000	25 000
Organochlorine Pesticides				
DDT+DDE+DDD	240	600	400	3600
Aldrin and dieldrin	6	10	10	45
Chlordane	50	90	70	530
Endosulfan	270	400	340	2000
Endrin	10	20	20	100
Heptachlor	6	10	10	50
HCB	10	15	10	80
Methoxychlor	300	500	400	2500
Mirex	10	20	20	100
Toxaphene	20	30	30	160
Herbicides				
2,4,5-T	600	900	800	5000
2,4-D	900	1600	1300	9000
MCPA	600	900	800	5000
MCPB	600	900	800	5000
Mecoprop	600	900	800	5000
Picloram	4500	6600	5700	35000
Other Pesticides				
Atrazine	320	470	400	2500
Chlorpyrifos	160	340	250	2000
Bifenthrin	600	840	730	4500
Other Organics				
PCBs[8]	1	1	1	7
PBDE Flame Retardants (Br1–Br9)	1	2	2	10

Notes:

(1) Generic land uses are described in detail in Schedule B7 Section 3

HIL A – Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.

HIL B – Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.

HIL C – Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site-specific assessment may be more appropriate.

HIL D – Commercial/industrial, includes premises such as shops, offices, factories and industrial sites.

(2) Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability may be important and should be considered where appropriate (refer Schedule B7).

(3) Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral bioavailability has been considered. Site-specific bioavailability may be important and should be considered where appropriate.

(4) Methyl mercury: assessment of methyl mercury should only occur where there is evidence of its potential source. It may be associated with inorganic mercury and anaerobic microorganism activity in aquatic environments. In addition the reliability and quality of sampling/analysis should be considered.

(5) Elemental mercury: HIL does not address elemental mercury. A site-specific assessment should be considered if elemental mercury is present, or suspected to be present.

(6) Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their TEFs (potency relative to B(a)P) adopted by CCME 2008 (refer Schedule B7). The B(a)P TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TEF, given below, and summing these products.

PAH species	TEF	PAH species	TEF
Benzo(a)anthracene	0.1	Benzo(g,h,i)perylene	0.01
Benzo(a)pyrene	1	Chrysene	0.01
Benzo(b+j)fluoranthene	0.1	Dibenz(a,h)anthracene	1
Benzo(k)fluoranthene	0.1	Indeno(1,2,3-c,d)pyrene	0.1

Where the B(a)P occurs in bitumen fragments it is relatively immobile and does not represent a significant health risk.

Source: NEPM 2013

Further, the following soil aesthetic considerations must be made:

- Chemically discoloured soils or large quantities of inert refuse, particularly unsightly, may cause ongoing concern to site users.
- Depth of materials, including chemical residues, in relation to the final surface of the site.
- The need for and practicality of, any long term management of foreign material.

Additional caution must be exercised when assessing sensitive land uses.

The NEPM 2013 provides expected ranges for EILs for a range of soil characteristics – opposed to a single type. This provision range should be considered on a site specific basis. For the purposes of this assessment Geotest has adopted Column 2 of the extracted table below from the NEPM 2013 Schedule B5a – Ecological Risk Assessment. Column 2 assumes a standard protection level of 80% -

Table A1: Summary of the EILs for fresh and aged contamination in soil with various land uses. Presented ranges are the EILs for a range of soil characteristics.

Contaminant	Age of contam	Added contaminant limits (mg added/kg soil) or EIL (mg/kg) for various land uses		
		Area of ecological significance[3]	Urban residential/ public open space[4]	Commercial & industrial[5]
Zinc[1]	fresh	7–130	25–500	45–800
	aged	15–280	70–1300	100–2000
Arsenic[2]	fresh	20	50	80
	aged	40	100	160
Naphthalene[2]	fresh	10	170	370
DDT[2]	fresh	3	180	630
Chromium (III)[1]	fresh	25–50	75–160	120–270
	aged	60–130	190–400	310–660
Copper[1]	fresh	15–60	30–120	45–200
	aged	20–80	60–230	85–340
Lead[1]	fresh	110	270	440
	aged	470	1100	1800
Nickel[1]	fresh	1–25	10–170	20–350
	aged	5–95	30–560	55–960

Source: NEPM 2013

8 FIELDWORK

8.1 Sampling Density & Activity

NSW EPA (1995) and NSW DEC (2005) provides guidance with regard to sampling densities for site characterisation. NSW EPA (1995) also recommends the site is interpreted based on geological and geographical features, nature of contamination, former usage patterns and the intended future use of the site. Based on the site history and current site features it was considered that both a grid and target based sampling pattern would be appropriate to assess the AECs identified for this site.

The total area of investigation was approximately 7.1 ha. A total of 75 sampling points were established on the 30th October 2014 and included;

- Test-pits undertaken for environmental and geotechnical investigations;
- Sample collection and sample compositing for laboratory analysis; and
- Selected test-pits undertaken for visual inspection across the entire site to ensure geology and substrate consistency. This further improves the hot-spot confidence.
- Works were carried out by a suitably experienced environmental scientist from Geotest Services.
- Test pits were undertaken using the general purpose bucket of a 5 tonne excavator. Samples were collected from within the excavator bucket or from natural soils in the test-pit profile where possible.
- Test pits were terminated following confirmation of investigation, discovery of natural soils or refusal onto bedrock.
- Test pits were logged by a suitably experienced environmental scientist.
- Soil samples were placed into laboratory supplied glass jars, with Teflon lined seals to limit volatile loss and placed into an ice chilled cooler. The samples were dispatched to NATA accredited laboratories under chain of custody protocols. Copies of the chain of custody are provided in Appendix C.

8.2 Areas not investigated

There were limited areas that could not be investigated during the intrusive test pit program. These are presented in Figure 3 which is attached to this report. It is unlikely that these areas will significantly impact the contamination status or accuracy of this investigation. The areas that could not be investigated are as follows –

- The residential area including; building footprints, within or immediately around garages/ farm sheds and domestic gardens
- Within the dams; and
- Beneath concrete hard-stand areas (locations were positioned down-gradient where possible)

8.3 Laboratory Analysis

Samples were submitted to Eurofins MGT Lane Cove (primary) and SGS Alexandria (secondary) for laboratory analysis for the relevant contaminants of potential concern.

9 FIELD AND LABORATORY DATA RELIABILITY

9.1 Fieldwork

9.1.1 Sampling

Sampling was undertaken in general accordance with Geotest procedures, which are based on industry practice. During the works, any re-usable sampling tools were decontaminated between every sampling location using phosphorus free *Decon 90* and potable town water. However, Geotest procedures mean disposable sampling equipment is preferred, eliminating the risk for cross contamination.

9.1.2 Field Duplicates

Selected samples were split in the field and placed in separate sets of sample containers. The primary and duplicate samples were sent to the primary laboratory. The analysis of field duplicate samples provides an assessment of the precision of the sampling and laboratory analytical procedures.

The following field duplicates were taken –

Parent Sample ID	Duplicate ID intra / inter
TP07-0.2-0.3	DUP 1 + 1a
C61-0.1-0.2	DUP2 + 2a

The following samples reported relative percent difference (RPD) between the parent samples, duplicates and triplicates analysed for soils outside the accepted 50% limit –

Primary Sample	Duplicate	Analyte	RPD %
TP7-0.2-0.3	DUP1a	Arsenic	72
		Chromium	67
		Lead	64
		Nickel	76
		Zinc	53
C61-0.1-0.2	DUP2a	Chromium	86
		Copper	51
		Lead	60
		4'4'-DDE	52
		4'4'-DDT	79

For the above exceedances neither the primary nor the duplicate were greater than 2.5 times their respective contamination criteria and are therefore not considered to significantly impact the data reliability. The relative percentage difference (RPD) calculations are presented in Table LT2.

9.1.3 Wash Blanks

Wash blanks were not part of the scope for this investigation. Generally only disposable consumables were used eliminating the potential for cross contamination.

9.1.4 Sample Preservation and Storage

Sample storage and preservation is presented in the table below -

Analyte	Sample Volume and Container	Preservative	Storage
Organics/ inorganics (soil)	250ml glass & Teflon lined lid	Nil	Insulated container with ice
Asbestos	200µm zip lock bag	Nil	Within secure storage container

The sample containers were transported to the NATA accredited analytical laboratory with the Chain of Custody (COC) form, recording the following information:

- project reference; date of sampling; sample identification; matrix and container details; preservation method; name of sampler; required analysis; turnaround times required; and signatures of sender and receiving laboratory.

A copy of the COC was kept in the project file (refer Appendix B). Samples were transported to the laboratory with sufficient time to perform analysis within the applicable holding period.

9.2 Laboratory Reported Data

An assessment of laboratory data quality was undertaken.

The following primary laboratory report was prepared for this project: Eurofins MGT #437424

The following secondary laboratory report was prepared for this project: SGS #SE132917

The results of this assessment indicated the following:

- laboratory analysis of samples was undertaken by a NATA accredited environmental testing laboratory;
- samples were extracted and analysed within holding times;
- the laboratory QAQC data was reviewed and is considered to be satisfactory for the investigation;
- the laboratory limits of reporting (LOR) were below the adopted assessment criteria.

9.3 Reported Data Quality Conclusion

Based on our data quality evaluation including: third-party historical data, field data and laboratory data, we consider the data to be suitable for the purposes of this investigation.

The data was analysed to be satisfactory.

10 RESULTS

10.1 Site Specific Geology

Generally the residual clay profile generally encountered in the majority of test pit locations across the site can be broadly described as -

0.0-0.2 Grass; Topsoil; Sandy Silty CLAY; low plasticity, brown, dry, soft.

0.2-0.4 Silty CLAY, (CH), red, dry to moist, firm to stiff

0.4-1.0 Shaley CLAY, (CH), grey, dry, firm

1.0 SHALE, weak, distinctly weathered, grey, hard.

Test pit locations are shown in Figure 3, attached to this report.

10.2 Visual and Olfactory Observations

The following aesthetic issues were observed (refer to Figure 2):

- One empty AST, with a volume estimated to be 500 L, was observed to the east of the dwelling at Site B. The previous contents were unknown (assumed diesel) and there were no observed odours or staining in the vicinity of the AST.
- Approximately six, empty 100L oil drums were identified to the south of the dwelling at Site B. There were no observed odours or staining in the vicinity of the oil drums.
- ACM fragments were identified at the following locations:
    - A significant quantity of PACM roofing was stored immediately to the south of the sheds at Site A;
    - Some PACM sheeting was observed to be used as small soil retainers to the south of the residential property at Site A;
    - The driveway of Site A was an unsealed gravelly track with many ACM fragments observed on the surface;
    - One potential asbestos containing material (PACM) pipe was observed in the area of debris storage to the south of the dam at Site B;
    - Fragments of PACM were observed on the ground surface at the southern side of the tin sheds at Site B; and
    - Two to three sheets of PACM were observed to the south of the dwelling at Site B
- General rubbish and debris was observed in the vicinity of the sheds at both properties and south of the dam at Site B.

10.3 Inaccessible Areas

The areas that were not able to be accessed during the site works are presented in Section 8.2 of this report.

10.4 Reported Laboratory Results

The laboratory results table; Table LT1 was prepared to a summary of laboratory analytical data and the corresponding site contamination criteria. The table is attached to this report.

10.4.1 Metals

Generally the results are less than the adopted HIL-A site criteria.

10.4.2 OCP/OPP

The concentrations of aldrin, dieldrin, chlordane, DDT, DDD, DDE and heptachlor in the samples analysed were mostly below the laboratory LOR.

10.4.3 PAH

The sample analysed for PAH reported concentrations below LOR.

10.4.4 Asbestos

The building materials sampled and analysed (PACM1 & PACM3) detected positive asbestos materials. These fragments are representative of a number of fragments and building materials observed across the properties during the site investigation.

11 DISCUSSION

11.1 Soils – Human Health

The results of the laboratory analysis indicate that the analysed contaminant concentrations of concern in soils at the sampling locations were less than the adopted human health assessment criteria – Table 1 (a) Column HIL A (NEPM 2013).

However, non-friable ACM fragments were observed at a number of localised areas across the site. Soils in these areas should be removed off-site or ACM picked from and the soils validated for beneficial re-use on site in accordance with NEPC 2013 / WA DOH 2009 Guidelines.

In addition, it is important that during the de-vegetation and stripping of the site that close observations are made for any further potential asbestos fragments.

Sampling locations are presented in Figure 3, attached to this report.

11.2 Soils – Aesthetics

Generally the site was free of material considered aesthetically un-suitable. Geotest does note the following areas and features at the site that are considered aesthetically un-suitable for the proposed residential land use –

- ACM fragments on ground surface and in fill material at locations specified in Section 10.2.
- General debris and waste within disturbed areas (to be removed during demolition)
- Soils surrounding the AST should be further investigated during demolition and remediation works.
- Any un-identified areas of fill observed during stripping that contain a moderate - high level of inert foreign materials
- Any soils identified during civil construction work that are not characteristic with descriptions in this report, are discoloured or odourous, include asbestos or other anthropogenic materials should be segregated for further assessment and characterisation by an appropriately experienced environmental consultant.

11.3 Soils – Ecological Health

The laboratory results indicated all laboratory results were reported below the adopted ecological site assessment criteria – NEPC (2013) Ecological Investigation Levels (EILs) for urban / residential / public open space – aged.

Further, general observations made on site did not indicate evidence of wide-spread phytotoxic impact. Geotest considers that further ecological health assessment, management or remediation of these soils is not warranted based on our investigation.

12 CONCLUSIONS

Geotest concludes that; based on the desktop investigation, the site inspection and observations collected during site works and the interpretation of laboratory data that the site is considered suitable for the proposed residential land uses subject to lawful demolition and clean-up (ground preparation works). It is expected that only following these works including removal of asbestos contaminated building materials, the site may be considered suitable for future residential land-uses from a contamination perspective. We make the following recommendations to address general preparation and land use contamination matters at the site -

- A detailed hen pick of all areas where ACM was observed on the ground surface, surrounding ACM sheds, structures and any debris on the ground for removal of ACM fragments to prevent accidental spreading of materials on-site.
- Lawful demolition by a licensed DE-2 contractor of all structures at the site.
- Lawful waste disposal of all asbestos, building, and general waste from the site and provision of dockets.
- General rubbish clean up and removal from site.
- Lawful disposal of the AST as per the relevant COP and provision of destruction certificate for validation report. Following removal and destruction, an environmental consultant should attend to validate the footprint of the AST structure.
- Lawful disposal of the 100L oil drums in the area to the south of the dwelling at Site B, provision of waste dockets. Following removal, an environmental consultant should attend to validate the footprint of the oil drums.
- Following demolition and clean-up of the disturbed areas, residential area and sheds etc. the building footprints and demolition work area should be inspected and validated by an appropriately experienced consultant.
- Inspection of the dam following de-watering and an assessment of the silt removed from the base prior to re-use at the site. This also includes the safe removal of any debris and waste commonly found within farm dams.

Further, during the remediation works at the site, in the event that any un-expected finds are identified, an appropriately experienced consultant should be engaged to attend site. The works should cease immediately in the area of the discovery.

This report should be read in conjunction with its limitations presented in Section 14 of this report.

13 REFERENCES

- NEPC 2013, 'National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 No. 1' Federal Register of Legislative Instruments F2013L00768.
- NSW DEC 2005, Contaminated Sites: Guidelines for Assessing Former Orchards and Market Gardens', ISBN 1 74137 019 1, Department of Environment and Conservations NSW.
- NSW DEC 2006, 'Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd edition)' ISBN 1 74137 859 1, Department of Environment and Conservation NSW.
- NSW EPA 1994, 'Contaminated Sites: Guidelines for Assessing Service Station Sites', ISBN 07310 3712 X, NSW Environment Protection Authority.
- NSW EPA 1995, 'Contaminated Sites: Sampling Design Guidelines', ISBN 0 7310 3756 1.
- NSW OEH 2011, 'Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites', ISBN 0 7310 3892 4, NSW Office of Environment and Heritage.

14 YOUR GEOTEST SERVICES DOCUMENT LIMITATIONS

It is critical you grasp your Geotest Services document as a whole as it has been prepared on the basis of a specific objective and scope as interpreted by Geotest Services and applies only to the site or nominated area assessed.

The scope of works and report was prepared in response to specific instructions from the Geotest Service's client whom the report is addressed to. The scope, analysis, evaluations, conclusions and opinions presented in the report are based on these instructions from the client and information available and collected during our assessment.

The subsurface and ground conditions of the questioned property are subject to change over time from both natural and anthropogenic factors. The report presented has been prepared on the ground conditions observed at this time. Decisions should not be made on the basis of this report if it has been impacted by time.

The report has been prepared to accurately determine site conditions whilst working within the budgetary and scope of work constraints given to Geotest. This may include physical, occupant or any other constraint at the site preventing access for investigation. Ground conditions may differ from those encountered in the report. No report can practically qualify the exact sub-conditions present across the entire site at any given time.

The conclusions above are based on the selective sampling programme which is targeted to be representative of the site and conditions of the immediate area if reported. The document is set out using relevant regulatory authority guidelines and industry accepted practices. The document conclusions do not provide a guarantee that the ground conditions between those sampling points investigated are indifferent to those assessed.

The document Geotest Services has prepared for you should not be used for any other purpose than that originally specified in the report and at the time of commissioning.

The report and its appendices, supporting documents should be read in completeness and certainly not separated. The report will not be conclusive if a single section is interpreted without the support of the remaining components.

To prevent any mis-interpretations of the report, Geotest Services recommends the client or end user contact them with any mis-understood or environmental queries relating to this report.

Geotest Services

Table LT2
Camden Valley Way, Edmondson Park, NSW
Field Data Quality Assessment
P7503.1_R01

	Reference	S14-No01005	S14-No01010		SE132917.001		S14-No01007	S14-No01011		SE132917.002	
	Sample ID	TP7 0.2-0.3	DUP1	RPD %	DUP1a	RPD %	C61 0.1-0.2	DUP2	RPD %	DUP2a	RPD %
	Date Sampled	30-10-14	30-10-14		30-10-14		30-10-14	30-10-14		30-10-14	
	Sample Matrix	Soil	Soil		Soil		Soil	Soil		Soil	
Group	Analyte										
Metals	Arsenic		17	20	0	8	-72	15	15	0.0	13	-14
	Cadmium		< 0.4	< 0.4	0	0.6	40	< 0.4	< 0.4	0.0	0.5	22
	Chromium		38	44	0	19.0	-67	35	35	0.0	14.0	-86
	Copper		13	9.2	34.2	9.7	-29	37	32	14	22	-51
	Lead		62	29	0	32.0	-64	34	35	-2.9	63.0	60
	Mercury		< 0.05	< 0.05	0	<0.05	0	< 0.05	< 0.05	0	<0.05	0
	Nickel		10	16	0	4.5	-76	7.8	9.4	-18.6	8.8	12
	Zinc		170	130	26.7	99	-53	57	64	-11.6	70	20
OCP	4.4'-DDD		< 0.05	< 0.05	0	<0.1	0	< 0.05	< 0.05	0.0	<0.1	0
	4.4'-DDE		< 0.05	< 0.05	0	<0.1	0	1.7	1.9	-11.1	1	-52
	4.4'-DDT		< 0.05	< 0.05	0	<0.1	0	0.46	0.48	-4.3	0.2	-79
	a-BHC		< 0.05	< 0.05	0	<0.1	0	< 0.05	< 0.05	0.0	<0.1	0
	Aldrin		< 0.05	< 0.05	0	<0.1	0	< 0.05	< 0.05	0.0	<0.1	0
	b-BHC		< 0.05	< 0.05	0	<0.1	0	< 0.05	< 0.05	0.0	<0.1	0
	Chlordanes - Total		< 0.1	< 0.1	0	<0.1	0	< 0.1	< 0.1	0.0	<0.1	0
	d-BHC		< 0.05	< 0.05	0	<0.1	0	< 0.05	< 0.05	0.0	<0.1	0
	Dieldrin		< 0.05	< 0.05	0	<0.2	0	< 0.05	< 0.05	0.0	<0.2	0
	Endosulfan I		< 0.05	< 0.05	0	<0.2	0	< 0.05	< 0.05	0.0	<0.2	0
	Endosulfan II		< 0.05	< 0.05	0	<0.2	0	< 0.05	< 0.05	0.0	<0.2	0
	Endosulfan sulphate		< 0.05	< 0.05	0	<0.1	0	< 0.05	< 0.05	0.0	<0.1	0
	Endrin		< 0.05	< 0.05	0	<0.2	0	< 0.05	< 0.05	0.0	<0.2	0
	Endrin aldehyde		< 0.05	< 0.05	0	<0.1	0	< 0.05	< 0.05	0.0	<0.1	0
	Endrin ketone		< 0.05	< 0.05	0	<0.1	0	< 0.05	< 0.05	0.0	<0.1	0
	g-BHC (Lindane)		< 0.05	< 0.05	0	<0.1	0	< 0.05	< 0.05	0.0	<0.1	0
	Heptachlor		< 0.05	< 0.05	0	<0.1	0	< 0.05	< 0.05	0.0	<0.1	0
	Heptachlor epoxide		< 0.05	< 0.05	0	<0.1	0	< 0.05	< 0.05	0.0	<0.1	0
	Hexachlorobenzene		< 0.05	< 0.05	0	<0.1	0	< 0.05	< 0.05	0.0	<0.1	0
	Methoxychlor		< 0.2	< 0.2	0	<0.1	0	< 0.2	< 0.2	0.0	<0.1	0
	Toxaphene		< 1	< 1	0	<0.2	0	< 1	< 1	0.0	<0.2	0
OPP	Chlorpyrifos							< 0.5	< 0.5	0.0		
	Coumaphos							< 0.5	< 0.5	0.0		
	Demeton (total)							< 1	< 1	0.0		
	Diazinon							< 0.5	< 0.5	0.0		
	Dichlorvos							< 0.5	< 0.5	0.0		
	Dimethoate							< 0.5	< 0.5	0.0		
	Disulfoton							< 0.5	< 0.5	0.0		
	Ethoprop							< 0.5	< 0.5	0.0		
	Fenitrothion							< 0.5	< 0.5	0.0		
	Fensulfothion							< 0.5	< 0.5	0.0		
	Fenthion							< 0.5	< 0.5	0.0		
	Malathion							< 0.5	< 0.5	0.0		
	Methyl azinphos							< 0.5	< 0.5	0.0		
	Methyl parathion							< 0.5	< 0.5	0.0		
	Mevinphos							< 0.5	< 0.5	0.0		
	Monocrotophos							< 10	< 10	0.0		
	Parathion							< 0.5	< 0.5	0.0		
	Phorate							< 0.5	< 0.5	0.0		
	Profenofos							< 0.5	< 0.5	0.0		
	Prothiofos							< 0.5	< 0.5	0.0		
	Ronnel							< 0.5	< 0.5	0.0		
	Stirophos							< 0.5	< 0.5	0.0		
	Trichloronate							< 0.5	< 0.5	0.0		

Table LT1
Camden Valley Way, Edmondson Park, NSW
Soil Results & Adopted Site Criteria
P7503.1_R01

									Reference	S14-No00977	S14-No00978	S14-No00979	S14-No00980	S14-No00981	S14-No00982	S14-No00983	S14-No00984	S14-No00985	S14-No00986	S14-No00987	S14-No00988	S14-No00989	S14-No00990	S14-No00991	S14-No00992	S14-No00993	S14-No00994
									Sample ID	C1-C2	C3-C4	C5-C6	C7-C8	C9-C10	C11-C12	C13-C14	C15-C16	C17-C18	C19-C20	C21-C22	C25-C26	C29-C30	C31-C32	C33-C34	C35-C36	C37-C38	C39-C40
									Date Sampled	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14
									Sample Matrix	Material	Material	Material	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Group	Analyte	Units	PQL	NEPM EIL (2013) fresh / aged	NEPM HIL A (NSW EPA 2005 composite procedure)	NEPM HIL A (2013)	DATASET MINIMUM	DATASET MAXIMUM																				
Metals	Arsenic	mg/kg	<3	20 / 40	50	100	6.2	20		7.6	14	15	6.2	6.9	11	20	15	19	13	14	11	8.2	9.8	14	16	11	8.8
	Cadmium	mg/kg	<0.3		10	20	0	0		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
	Chromium	mg/kg	<0.3	50 / 130	50	100	15	58		15	35	34	15	16	23	38	27	58	27	30	23	22	31	31	35	22	18
	Copper	mg/kg	<0.5	60 / 80	3000	6000	15	47		18	30	37	21	19	38	34	37	32	29	28	47	37	45	32	27	20	15
	Lead	mg/kg	<1	110 / 470	150	300	18	150		54	46	150	29	18	23	37	65	46	24	38	27	21	29	36	33	27	27
	Mercury	mg/kg	<0.5		20	40	0.05	0.09		0.09	0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Nickel	mg/kg	<0.5	25 / 95	200	400	5.6	16		9.6	7.1	6.9	< 5	6.1	8.4	5.6	6.6	16	6.9	12	14	14	16	8.8	8.9	6.4	6.5
	Zinc	mg/kg	<0.05	130 / 280	3700	7400	23	120		73	100	120	31	23	54	47	110	91	42	80	78	77	92	92	58	39	31
OCP	4.4'-DDD	mg/kg	<0.1		120	240 (combined limit)	0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	4.4'-DDE	mg/kg	<0.1				0.05	0.99		0.05		0.22	0.15	0.18	0.4	0.3	0.47	0.37	0.4	0.15	0.59	0.94	0.99		0.72	0.59	
	4.4'-DDT	mg/kg	<0.1	3			0.06	0.16		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.15	0.09		0.16	0.1	
	a-BHC	mg/kg	<0.1				0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	Aldrin	mg/kg	<0.1		1.5	3	0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	b-BHC	mg/kg	<0.1				0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	Chlordanes - Total	mg/kg	<0.1				0	0		< 0.1		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	
	d-BHC	mg/kg	<0.1				0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	Dieldrin	mg/kg	<0.1		1.5	3	0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	Endosulfan I	mg/kg	<0.1		135	270	0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	Endosulfan II	mg/kg	<0.1				0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	Endosulfan sulphate	mg/kg	<0.1				0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	Endrin	mg/kg	<0.1		5	10	0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	Endrin aldehyde	mg/kg	<0.1				0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	Endrin ketone	mg/kg	<0.1				0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	g-BHC (Lindane)	mg/kg	<0.1				0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	Heptachlor	mg/kg	<0.1		3	6	0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	Heptachlor epoxide	mg/kg	<0.1				0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	Hexachlorobenzene	mg/kg	<0.1		5	10	0	0		< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	
	Methoxychlor	mg/kg	<0.1		150	300	0	0		< 0.2		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2		< 0.2	< 0.2	
	Toxaphene	mg/kg	<0.1		20	20	0	0		< 1		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1		< 1	< 1	
OPP	Chlorpyrifos	mg/kg	< 0.5			160	0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Coumaphos	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Demeton (total)	mg/kg	< 1				0	0					< 1					< 1					< 1		< 1		
	Diazinon	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Dichlorvos	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Dimethoate	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Disulfoton	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Ethoprop	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Fenitrothion	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Fensulfothion	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Fenthion	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Malathion	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Methyl azinphos	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Methyl parathion	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Mevinphos	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Monocrotophos	mg/kg	< 10				0	0					< 10					< 10					< 10		< 10		
	Parathion	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Phorate	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Profenofos	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Prothiofos	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Ronnel	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Stirophos	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
	Trichloronate	mg/kg	< 0.5				0	0					< 0.5					< 0.5					< 0.5		< 0.5		
PAH	Acenaphthene	mg/kg	< 0.5				0	0																			
	Acenaphthylene	mg/kg	< 0.5				0	0																			
	Anthracene	mg/kg	< 0.5				0	0																			
	Benz(a)anthracene	mg/kg	< 0.5				0	0																			
	Benzo(a)pyrene	mg/kg	< 0.5				0	0																			
	Benzo(a)pyrene TEQ (lower bound)*	mg/kg	< 0.5			3	0	0																			
	Benzo(a)pyrene TEQ (medium bound)*	mg/kg	<0.6			3	0	0																			
	Benzo(a)pyrene TEQ (upper bound)*	mg/kg	<1.2			3	0	0																			
	Benzo(b&j)fluoranthene	mg/kg	< 0.5				0	0																			
	Benzo(g.h.i)perylene	mg/kg	< 0.5				0	0																			
	Benzo(k)fluoranthene	mg/kg	< 0.5				0	0																			
	Chrysene	mg/kg	< 0.5				0	0																			
	Dibenz(a.h)anthracene	mg/kg	< 0.5				0	0																			
	Fluoranthene	mg/kg	< 0.5				0	0																			
	Fluorene	mg/kg	< 0.5				0	0																			
	Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5				0	0																			
	Naphthalene	mg/kg	< 0.5				0	0																			
	Phenanthrene	mg/kg	< 0.5				0	0																			
	Pyrene	mg/kg	< 0.5				0	0																			
	Total PAH	mg/kg	< 0.5			300	0	0																			
Asbestos	Asbestos	Detect	ND	-	-	Detect	0	0																			

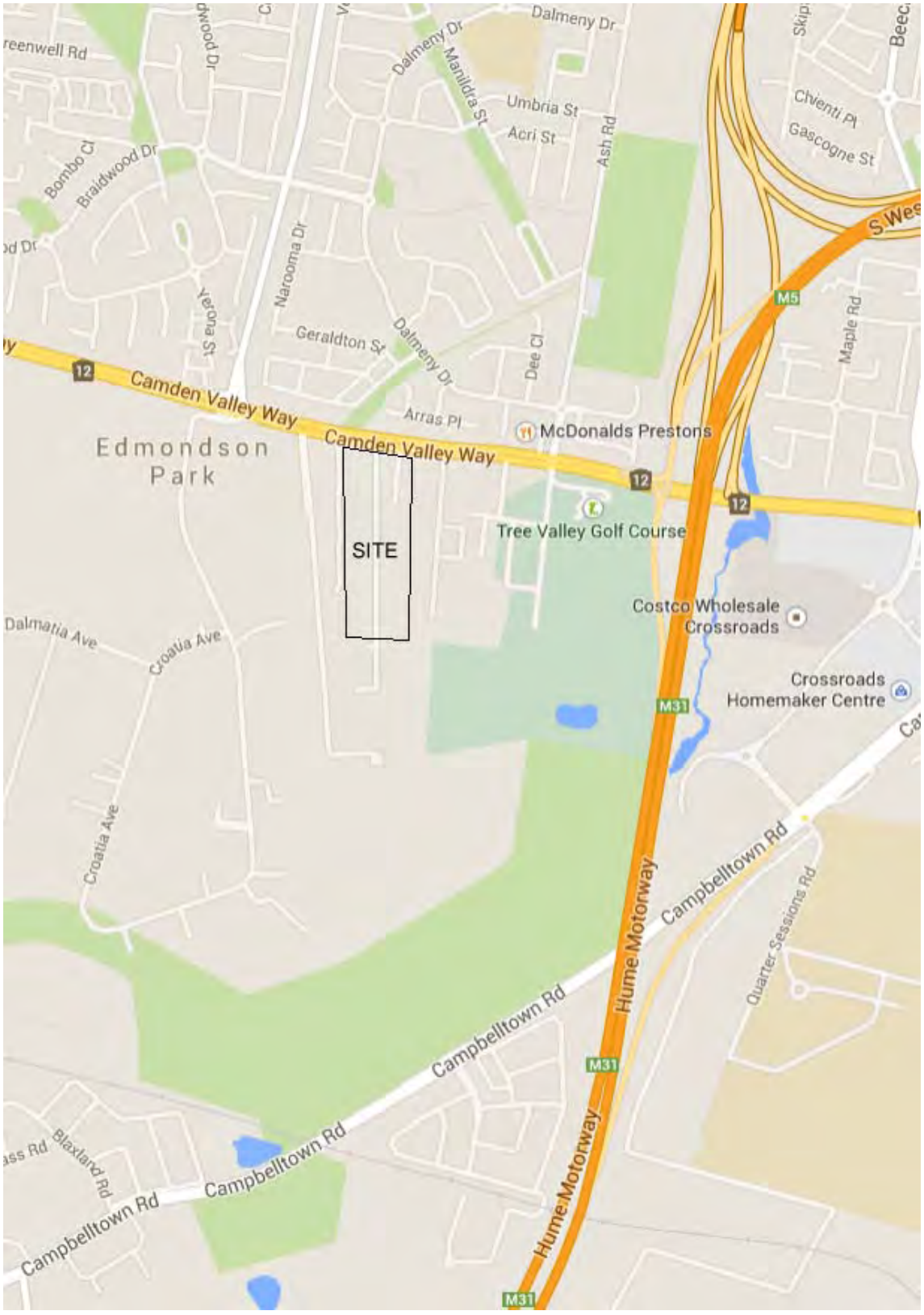
NEPM Ecological Investigation Levels 2013
NEPM Table 1A (1) Column A Standard Residential Land Uses 2013
NSW DEC (2005) Procedure 2b compositing method adopted (2:1)

Geotest Services

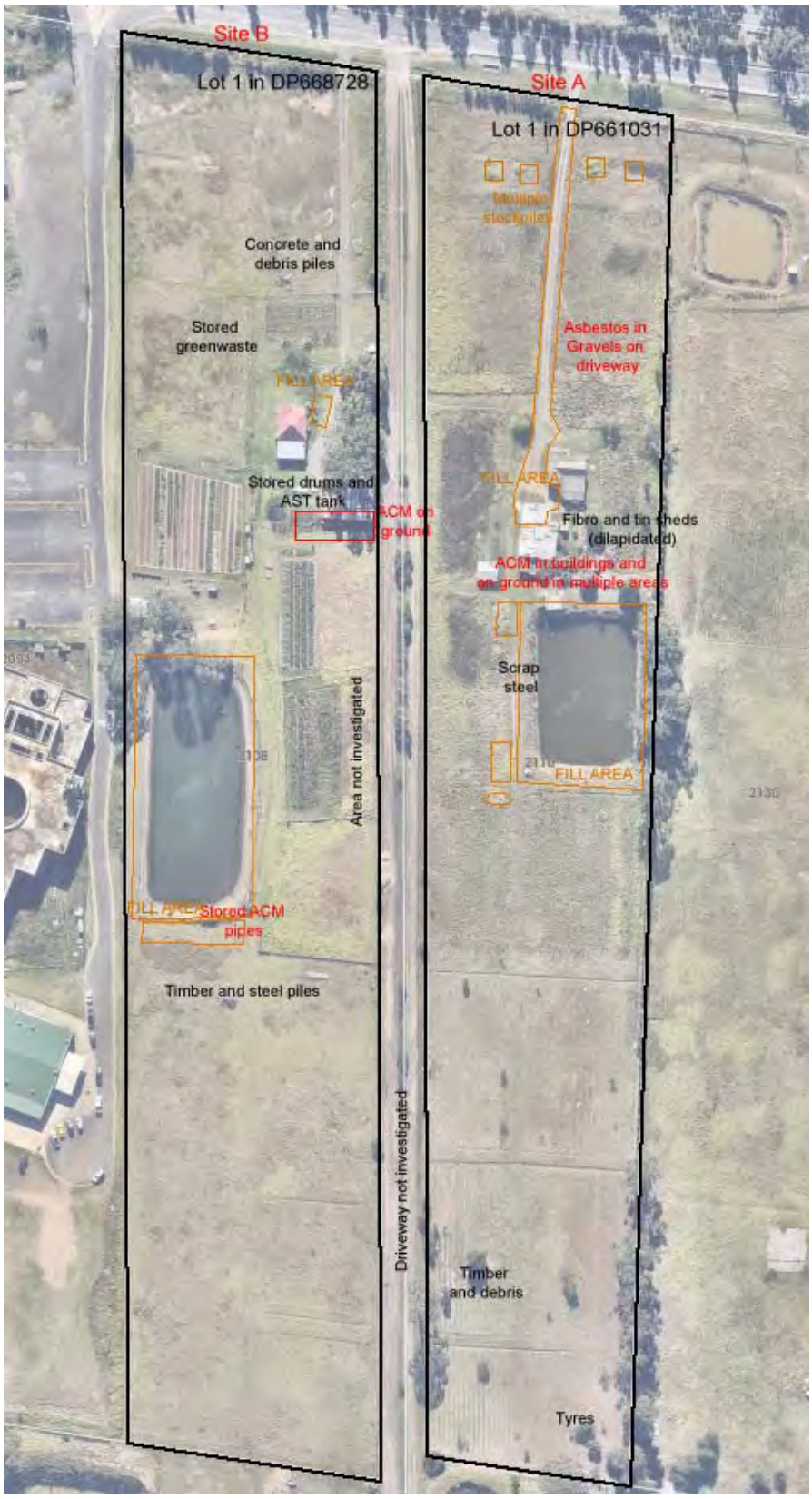
Table LT1
Camden Valley Way, Edmondson Park, NSW
Soil Results & Adopted Site Criteria
P7503.1_R01

								Reference	S14-No00995	S14-No00996	S14-No00997	S14-No00998	S14-No00999	S14-No01000	S14-No01001	S14-No01002	S14-No01003	S14-No01004	S14-No01005	S14-No01006	S14-No01007	S14-No01008	S14-No01009
								Sample ID	C41-C42	C45-C46	C49-C50	C51-C52	C53-C54	C55-C56	C57-C58	C59-C60	TP5 0.2-0.3	TP6 0.1-0.2	TP7 0.2-0.3	TP12 0.1-0.2	C61 0.1-0.2	PACM1	PACM3
								Date Sampled	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14	30-10-14
								Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Material	Material
Group	Analyte	Units	PQL	NEPM EIL (2013) fresh / aged	NEPM HIL A (NSW EPA 2005 composite procedure)	NEPM HIL A (2013)	DATASET MINIMUM	DATASET MAXIMUM																
Metals	Arsenic	mg/kg	<3	20 / 40	*50*	100	6.2	20	14	15	22	16	17	12	24	12	14	23	17	21	15		
	Cadmium	mg/kg	<0.3		*10*	20	0	0	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4		
	Chromium	mg/kg	<0.3	50 / 130	*50*	100	15	58	32	34	51	39	32	27	52	29	35	46	38	49	35		
	Copper	mg/kg	<0.5	60 / 80	*3000*	6000	15	47	35	25	23	34	28	33	34	19	14	22	13	22	37		
	Lead	mg/kg	<1	110 / 470	*150*	300	18	150	26	29	35	26	28	24	42	27	44	89	62	44	34		
	Mercury	mg/kg	<0.5		*20*	40	0.05	0.09	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
	Nickel	mg/kg	<0.5	25 / 95	*200*	400	5.6	16	8.6	10	8	7.5	14	6.7	9.9	6.5	7.2	9	10	7.8	7.8		
	Zinc	mg/kg	<0.05	130 / 280	*3700*	7400	23	120	68	53	50	49	83	52	61	42	110	200	170	170	57		
OCP	4.4'-DDD	mg/kg	<0.1			240 (combined limit)	0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	4.4'-DDE	mg/kg	<0.1		*120*		0.05	0.99	0.47	0.21	0.32	0.66		0.63	0.32	0.64			< 0.05		1.7		
	4.4'-DDT	mg/kg	<0.1	3			0.06	0.16	0.11	0.07	0.09	0.13		0.18	< 0.05	0.11			< 0.05		0.46		
	a-BHC	mg/kg	<0.1				0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	Aldrin	mg/kg	<0.1		*1.5*	3	0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	b-BHC	mg/kg	<0.1				0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	Chlordanes - Total	mg/kg	<0.1				0	0	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1	< 0.1	< 0.1			< 0.1		< 0.1		
	d-BHC	mg/kg	<0.1				0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	Dieldrin	mg/kg	<0.1		*1.5*	3	0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	Endosulfan I	mg/kg	<0.1		*135*	270	0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	Endosulfan II	mg/kg	<0.1				0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	Endosulfan sulphate	mg/kg	<0.1				0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	Endrin	mg/kg	<0.1		*5*	10	0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	Endrin aldehyde	mg/kg	<0.1				0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	Endrin ketone	mg/kg	<0.1				0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	g-BHC (Lindane)	mg/kg	<0.1				0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	Heptachlor	mg/kg	<0.1		*3*	6	0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	Heptachlor epoxide	mg/kg	<0.1				0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	Hexachlorobenzene	mg/kg	<0.1		*5*	10	0	0	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05			< 0.05		< 0.05		
	Methoxychlor	mg/kg	<0.1		*150*	300	0	0	< 0.2	< 0.2	< 0.2	< 0.2		< 0.2	< 0.2	< 0.2			< 0.2		< 0.2		
	Toxaphene	mg/kg	<0.1		*20*	20	0	0	< 1	< 1	< 1	< 1		< 1	< 1	< 1			< 1		< 1		
OPP	Chlorpyrifos	mg/kg	< 0.5			160	0	0		< 0.5						< 0.5					< 0.5		
	Coumaphos	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Demeton (total)	mg/kg	< 1				0	0		< 1						< 1					< 1		
	Diazinon	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Dichlorvos	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Dimethoate	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Disulfoton	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Ethoprop	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Fenitrothion	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Fensulfothion	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Fenthion	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Malathion	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Methyl azinphos	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Methyl parathion	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Mevinphos	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Monocrotophos	mg/kg	< 10				0	0		< 10						< 10					< 10		
	Parathion	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Phorate	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Profenofos	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Prothiofos	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Ronnel	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Stirophos	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
	Trichloronate	mg/kg	< 0.5				0	0		< 0.5						< 0.5					< 0.5		
PAH	Acenaphthene	mg/kg	< 0.5				0	0										< 0.5					
	Acenaphthylene	mg/kg	< 0.5				0	0										< 0.5					
	Anthracene	mg/kg	< 0.5				0	0										< 0.5					
	Benz(a)anthracene	mg/kg	< 0.5				0	0										< 0.5					
	Benzo(a)pyrene	mg/kg	< 0.5				0	0										< 0.5					
	Benzo(a)pyrene TEQ (lower bound)*	mg/kg	< 0.5			3	0	0										< 0.5					
	Benzo(a)pyrene TEQ (medium bound)*	mg/kg	<0.6			3	0	0										0.6					
	Benzo(a)pyrene TEQ (upper bound)*	mg/kg	<1.2			3	0	0										1.2					
	Benzo(b&j)fluoranthene	mg/kg	< 0.5				0	0										< 0.5					
	Benzo(g.h.i)perylene	mg/kg	< 0.5				0	0										< 0.5					
	Benzo(k)fluoranthene	mg/kg	< 0.5				0	0										< 0.5					
	Chrysene	mg/kg	< 0.5				0	0										< 0.5					
	Dibenz(a.h)anthracene	mg/kg	< 0.5				0	0										< 0.5					
	Fluoranthene	mg/kg	< 0.5				0	0										< 0.5					
	Fluorene	mg/kg	< 0.5				0	0										< 0.5					
	Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5				0	0										< 0.5					
	Naphthalene	mg/kg	< 0.5				0	0										< 0.5					
	Phenanthrene	mg/kg	< 0.5				0	0										< 0.5					
	Pyrene	mg/kg	< 0.5				0	0										< 0.5					
	Total PAH	mg/kg	< 0.5			300	0	0										< 0.5					
Asbestos	Asbestos	Detect	ND	-	-	Detect	0	0															

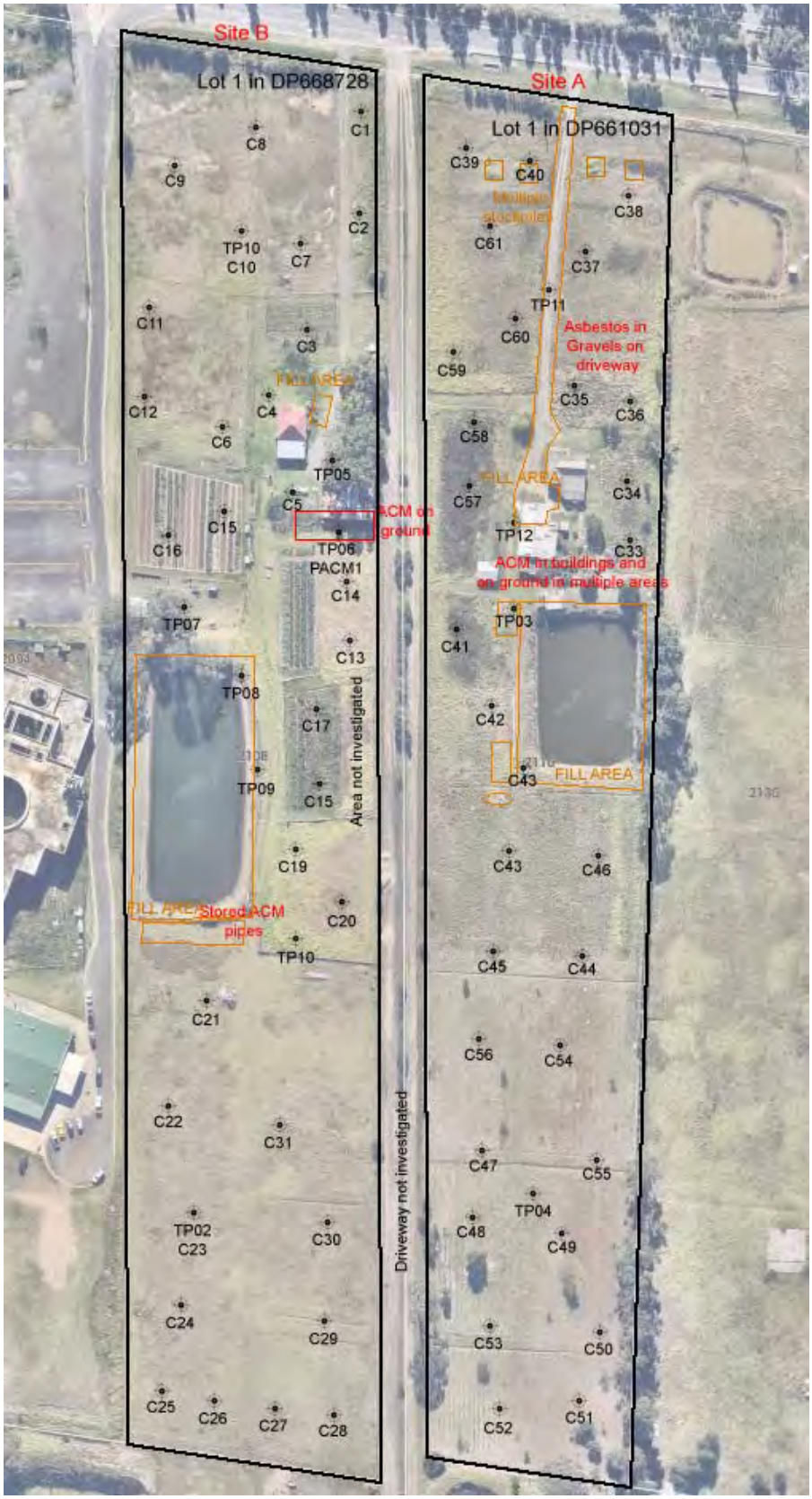
NEPM Ecological Investigation Levels 2013
NEPM Table 1A (1) Column A Standard Residential Land Uses 2013
NSW DEC (2005) Procedure 2b compositing method adopted (2:1)



Geotest Services 18/24 Garling Road Kings Park NSW	**Title:** **Site Locality**	**Date:** 04/12/2014
	Project: Detailed Site Investigation (DSI)	**Figure:** **Figure 1**
Project No: **P7503/1_RL01**	**Location:** Lot 1 & Lot 1 Camden Valley Way Edmondson Park NSW	**Drawn:** A.H



Geotest Services 18/24 Garling Road Kings Park NSW Project No: **P7503/1_R\01**	**Title:** **Areas of Environmental Concern & Features**	**Date:** 04/12/2014
	Project: Detailed Site Investigation (DSI)	**Figure:** **Figure 1**
	Location: Lot 1 & Lot 1 Camden Valley Way Edmondson Park NSW	**Drawn:** A.H



Geotest Services 18/24 Garling Road Kings Park NSW Project No: **P7503/1_R01**	**Title:** **Sampling Plan & Contamination Locations**	**Date:** 04/12/2014
	Project: Detailed Site Investigation (DSI)	**Figure:** **Figure 3**
	Location: Lot 1 & Lot 1 Camden Valley Way Edmondson Park NSW	**Drawn:** A.H

APPENDIX A

Phase 1 Historical Land Information

- *Historical Titles Search*
- *S149 Search*
- *NSW OEH Contaminated Land Report*
- *NRA Atlas Search Results*

ADVANCE LEGAL SEARCHERS PTY LTD

(ACN 47 943 842)
ABN 82 147 943 842

P.O. Box 149
Yagoona NSW 2199

Telephone: +612 9644 1679
Mobile: 0412 169 809
Facsimile: +612 8076 3026
Email: alsearch@optusnet.com.au

26th November, 2014

GEOTEST SERVICES
18/24 Garling Road,
BLACKTOWN NSW 2148

Attention: David Spasojevic,

RE: **Camden Valley Way,**
Edmondson Park

Note 1:	**Lot 1**	**DP 668728**	(page 1)
Note 2:	**Lot 1**	**DP 661031**	(page 3)

Note 1:

Current Search

Folio Identifier 1/668728 (title attached)
DP 668728 (plan attached)
Dated 25th November, 2014
Registered Proprietor:
ALFRED ACURI
ANGELA MARIA ACURI

Title Tree
Lot 1 DP 668728

Folio Identifier 1/668728

Certificate of Title Volume 10735 Folio 209

Certificate of Title Volume 5387 Folio 138

Certificate of Title Volume 2818 Folio 194

PA 20571

****

Summary of proprietor(s)
Lot 1 DP 668728

Year	Proprietor
	(Lot 1 DP 668728)
1988 – todate	Alfred Acuri Angela Maria Acuri
	(Part Lot B DP 27377 – CTVol 10735 Fol 209)
1968 – 1988	Alfred Acuri, machinist Angela Maria Acuri
	(Part Portion 65 Parish Minto – Area 77 Acres 0 Roods 34 Perches – CTVol 5387 Fol 138)
1943 – 1968	William Percival Rupert Flood, farmer
	(Part Portion 65 Parish Minto – Area 90 Acres 2 Roods 32 Perches – CTVol 2818 Fol 194)
1920 – 1943	Millie Cameron, wife of farmer
1918 – 1920	William Henry Penny, farmer Elizabeth Childs, spinster
1918 – 1918	William Henry Penny, farmer
	(Part Portion 65 Parish Minto – Area 90 Acres 2 Roods 32 Perches – PA 20571)
1862 – 1918	William Henry Penny, farmer / executor Sarah Penny, estate Benedict Penny, estate

****

Note 2:

Current Search

Folio Identifier 1/661031 (title attached)
DP 661031 (plan attached)
Dated 25th November, 2014
Registered Proprietor:
SALVATORE LEOTTA
ANTONINA LEOTTA

Title Tree
Lot 1 DP 661031

Folio Identifier 1/661031

Certificate of Title Volume 10046 Folio 5

Certificate of Title Volume 5387 Folio 138

Certificate of Title Volume 2818 Folio 194

PA 20571

*****

Summary of proprietor(s)

Lot 1 DP 661031

Year	Proprietor
	(Lot 1 DP 661031)
1988 – todate	Salvatore Leotta Antonina Leotta
	(Part Lot C DP 27377 – CTVol 10046 Fol 5)
1968 – 1988	Salvatore Leotta, market gardener Antonina Leotta
	(Part Portion 65 Parish Minto – Area 77 Acres 0 Roods 34 Perches – CTVol 5387 Fol 138)
1943 – 1968	William Percival Rupert Flood, farmer
	(Part Portion 65 Parish Minto – Area 90 Acres 2 Roods 32 Perches – CTVol 2818 Fol 194)
1920 – 1943	Millie Cameron, wife of farmer
1918 – 1920	William Henry Penny, farmer Elizabeth Childs, spinster
1918 – 1918	William Henry Penny, farmer
	(Part Portion 65 Parish Minto – Area 90 Acres 2 Roods 32 Perches – PA 20571)
1862 – 1918	William Henry Penny, farmer / executor Sarah Penny, estate Benedict Penny, estate

****

CERTIFICATE OF TITLE

NEW SOUTH WALES

REAL PROPERTY ACT, 1900, as amended.

TORRENS TITLE
Register Book

Vol. 10735 Fol. 209

CANCELLED

Appln. No. 20571
Prior Title Vol. 5387 Fol. 138

RW

Edition issued 15-2-1968

K902286

SEE AUTO FOLIO

(Page 1) Vol. 10735 Fol. 209

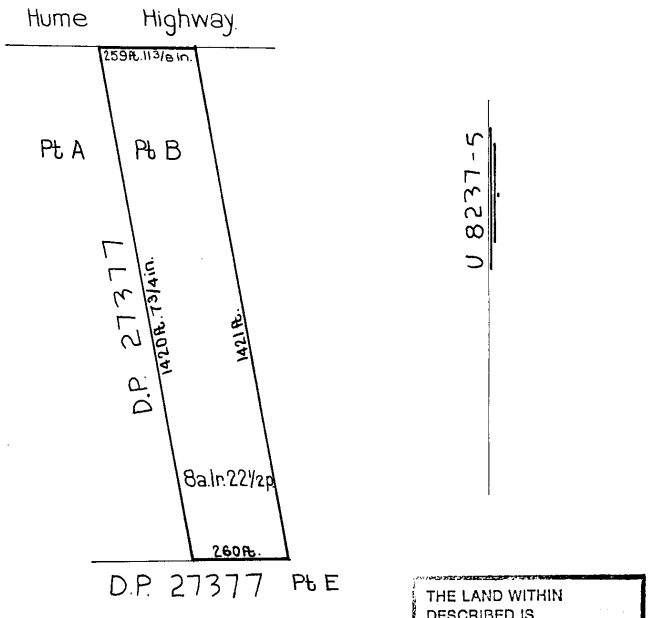
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness M W Walter

Jan Watson
Registrar General.

REGISTRAR GENERAL NEW SOUTH WALES

PLAN SHOWING LOCATION OF LAND



THE LAND WITHIN DESCRIBED IS LOT 1 IN DP 668728

K902286

Scale: 300 feet to one inch.

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in the part of Lot B in Deposited Plan 27377 shown in the plan hereon in the City of Liverpool, Parish of Minto, and County of Cumberland being also part of Portion 65 granted to Charles Parker on 31-1-1817.

FIRST SCHEDULE (Continued overleaf)

ALFREDO ARCURI of Liverpool, Machinist, and ANGELA MARIA ARCURI his wife, as Joint Tenants.

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

Jan Watson
Registrar General.

DP 668728

Prepared : pa 21-1-1997

This plan has been created to provide a unique identifier to enable the issue of an Automated Torrens Title for the land comprised in folio of the Register

Volume 10735 Folio 209

N 0 0 1 D 1 B

Metric Conversion Chart

Feet	Inches	Metres
	1/4	0.0064
	1/2	0.0127
	3/4	0.0190
	1	0.0254
	2	0.0508
	3	0.0762
	4	0.1016
	5	0.1270
	6	0.1524
	7	0.1778
	8	0.2032
	9	0.2286
	10	0.2540
	11	0.2794
1	0	0.3048
50	0	15.24
100	0	30.48

Links	Metres
1/10	0.0201
1	0.2012
100	20.115

Areas

1 Perch (P)	25.29 m2
1 Rood (R)	1012 m2
1 Acre (A)	4047 m2
1 Hectare (Ha)	= 10,000 m2

NEW SOUTH WALES

Application No. 20571

Prior Title Vol. 5387 Fol. 138

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900, as amended.

TORRENS TITLE
Register Book

Vol. 10046 Fol. 5

1st Edition issued 2-7-1965

EH J985765

(Page 1) Vol. 10046 Fol. 5

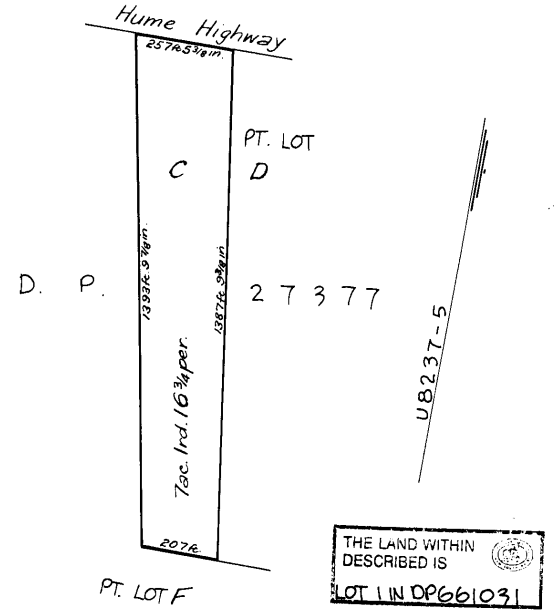
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness R B Latta

Registrar General.

SEE AUTO FOLIO

PLAN SHOWING LOCATION OF LAND



J985765 CH

Scale: 300 feet to one inch

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in part of Lot C in Deposited Plan 27377 in the City of Liverpool Parish of Minto and County of Cumberland being part of Portion 65 granted to Charles Parker on 31-1-1817.

Registrar General.

FIRST SCHEDULE (continued overleaf)

SALVATORE LEOTTA, of Greystanes, Market Gardener and ANTONINA LEOTTA, his wife, as Joint Tenants.

Registrar General.

SECOND SCHEDULE (continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

1

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

DP661031

Prepared : 6.10.1995

This plan has been created to provide a unique identifier to enable the issue of an Automated Torrens Title for the land comprised in folio of the Register

Volume 10046 Folio 5

B | 1 | D | 1 | 0 | 0 | N

Metric Conversion Chart

Feet	Inches	Metres
	1/4	0.0064
	1/2	0.0127
	3/4	0.0190
	1	0.0254
	2	0.0508
	3	0.0762
	4	0.1016
	5	0.1270
	6	0.1524
	7	0.1778
	8	0.2032
	9	0.2286
	10	0.2540
	11	0.2794
1	0	0.3048
50	0	15.24
100	0	30.48

Links	Metres
1/10	0.0201
1	0.2012
100	20.115

Areas

1 Perch (P)	25.29 m2
1 Rood (R)	1012 m2
1 Acre (A)	4047 m2

1 Hectare (Ha) = 10,000 m2

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900, as amended.

10735209

NEW SOUTH WALES

Appln. No. 20571
Prior Title Vol. 5387 Fol. 138

Vol. 10735 Fol. 209

CANCELLED

RW

Edition issued 15-2-1968

K902286

SEE AUTO FOLIO

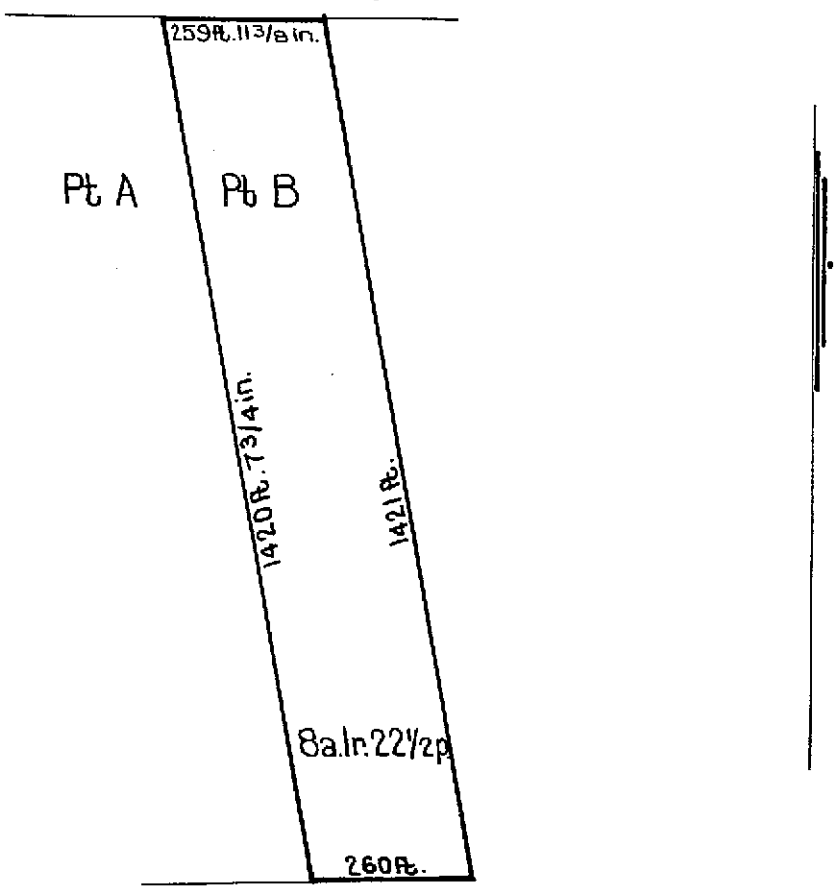
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness M Walter

Registrar General.

(Page 1) Vol. 10735 Fol. 209

PLAN SHOWING LOCATION OF LAND



THE LAND WITHIN DESCRIBED IS LOT 1 IN DP 668728

K902286

Scale: 300 feet to one inch.

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in the part of Lot B in Deposited Plan 27377 shown in the plan hereon in the City of Liverpool, Parish of Minto, and County of Cumberland being also part of Portion 65 granted to Charles Parker on 31-1-1817.

FIRST SCHEDULE (Continued overleaf)

ALFREDO ARCURI of Liverpool, Machinist, and ANGELA MARIA ARCURI his wife, as Joint Tenants.

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

Registrar General.

17 V.C.N. Blight, Government Printer

K902287-M
Q 742942 d p/m

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		
~~Mortgage~~	~~K902287~~	~~1.12.1967~~	~~to Commonwealth Savings Bank of Australia~~	~~21-2-1968~~		Discharged	Q742942	

CANCELLED

SEE AUTO FOLIO

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900, as amended.

10046005

NEW SOUTH WALES

Application No. 20571

Prior Title Vol. 5387 Fol. 138

Vol. 10046 Fol. 5

1st Edition issued 2-7-1965

EH J985765

Vol. 10046 Fol. 5

(Page 1)

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness R B Latta

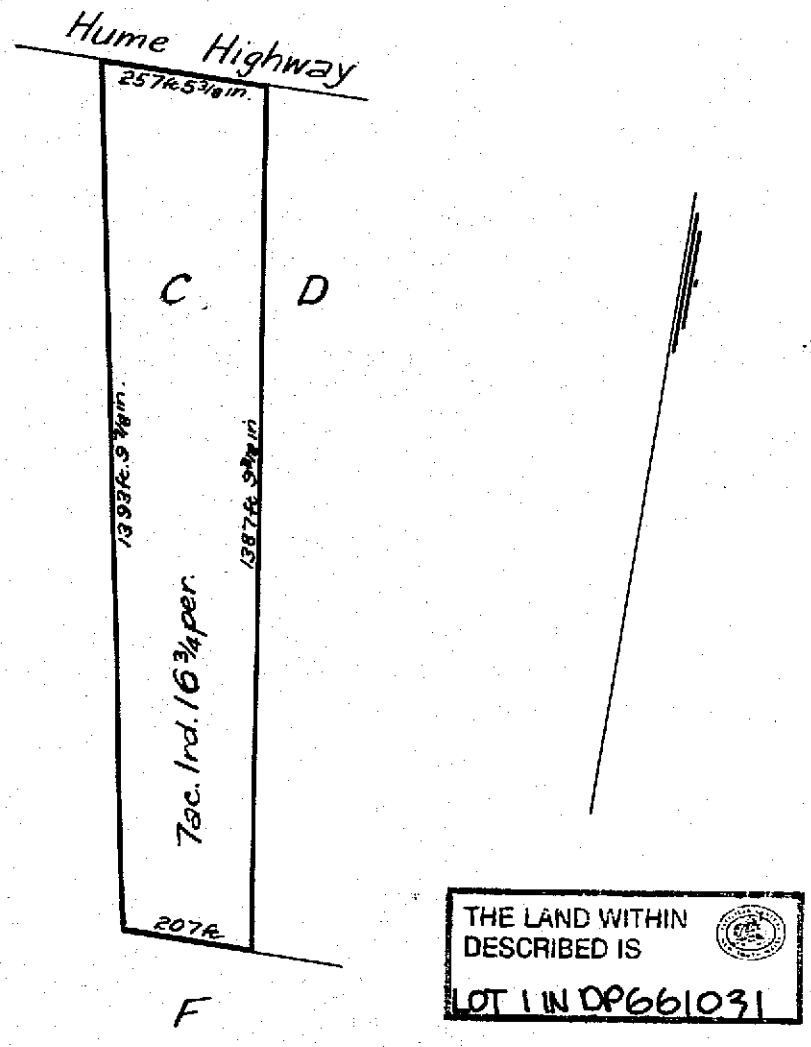
CANCELLED

Registrar General.

REGISTRAR GENERAL NEW SOUTH WALES

SEE AUTO FOLIO

PLAN SHOWING LOCATION OF LAND



J985765 CH.

Scale: 300 feet to one inch

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in part of Lot C in Deposited Plan 27377 in the City of Liverpool Parish of Minto and County of Cumberland being part of Portion 65 granted to Charles Parker on 31-1-1817.

Registrar General.

FIRST SCHEDULE (continued overleaf)

SALVATORE LEOTTA, of Greystanes, Market Gardener and ANTONINA LEOTTA, his wife, as Joint Tenants.

Registrar General.

SECOND SCHEDULE (continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

Registrar General.

ST 1508 V. C. N. PLIGHT, GOVERNMENT PRINTER

Vol. 10046 Fol 5

J985766 M

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
CANCELLED SEE AUTO FOLIO					

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION
Mortgage	J985766	26-3-1965	to Commonwealth Trading Bank of Australia.	13-7-1965		
			CANCELLED SEE AUTO FOLIO			

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 1/668728

SEARCH DATE	TIME	EDITION NO	DATE
25/11/2014	8:45 AM	-	-

VOL 10735 FOL 209 IS THE CURRENT CERTIFICATE OF TITLE

LAND

LOT 1 IN DEPOSITED PLAN 668728
LOCAL GOVERNMENT AREA LIVERPOOL
PARISH OF MINTO COUNTY OF CUMBERLAND
TITLE DIAGRAM DP668728

FIRST SCHEDULE

ALFREDO ARCURI
ANGELA MARIA ARCURI
AS JOINT TENANTS

SECOND SCHEDULE (2 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
* 2 AI978458 CAVEAT BY CALDWELL ROAD PTY LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 1/661031

SEARCH DATE	TIME	EDITION NO	DATE
25/11/2014	8:49 AM	-	-

VOL 10046 FOL 5 IS THE CURRENT CERTIFICATE OF TITLE

LAND

LOT 1 IN DEPOSITED PLAN 661031
LOCAL GOVERNMENT AREA LIVERPOOL
PARISH OF MINTO COUNTY OF CUMBERLAND
TITLE DIAGRAM DP661031

FIRST SCHEDULE

SALVATORE LEOTTA
ANTONINA LEOTTA
AS JOINT TENANTS

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
* 2 J985766 MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
* 3 AI978455 CAVEAT BY OKINAWA PTY LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Healthy Environment, Healthy Community, Healthy Business

Home > Contaminated land > Record of notices

Search results

Your search for:LGA: Liverpool City Council

Matched 12 notices relating to 2 sites.

Search Again

Refine Search

Suburb	Address	Site Name	Notices related to this site
Chipping Norton	85-107 Alfred Road	Australian Chemical Refiners	3 current
Moorebank	Bapaume Road	ABB Australia	1 current and 8 former

Page 1 of 1

24 November 2014

APPENDIX B

Field Test-pit Summary Logs

P7503/1
Craig and Rhodes
Lot 1 and Lot 2 Camden Valley Way
Edmondson Park

C1			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CL-CH), grey, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C2			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CL-CH), grey, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C3			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CL-CH), grey brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C4			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CL-CH), grey brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C5			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CL-CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C6			
Depth (m)	Sample	Description	Additional Observations
0.0-0.3		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.3-0.4		silty CLAY, (CL-CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C7			
Depth (m)	Sample	Description	Additional Observations
0.0-0.3		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.3-0.4		silty CLAY, (CL-CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C8			
Depth (m)	Sample	Description	Additional Observations
0.0-0.3 0.3-0.4		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CL-CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C9			
Depth (m)	Sample	Description	Additional Observations
0.0-0.3 0.3-0.4		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CL-CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C10			
Depth (m)	Sample	Description	Additional Observations
0.0-0.3 0.3-0.4		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CL-CH), brown grey, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C11			
Depth (m)	Sample	Description	Additional Observations
0.0-0.4 0.4-0.6		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CL-CH), brown, dry, firm	
Test Pit Terminated @ 0.6m bgl			

C12			
Depth (m)	Sample	Description	Additional Observations
0.0-0.4 0.4-0.6		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CL-CH), brown, dry, firm	
Test Pit Terminated @ 0.6m bgl			

C13			
Depth (m)	Sample	Description	Additional Observations
0.0-0.3 0.3-0.5		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CL-CH), brown, dry, firm	
Test Pit Terminated @ 0.5m bgl			

C14			
Depth (m)	Sample	Description	Additional Observations
0.0-0.3 0.3-0.5		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CL-CH), brown, dry, firm	
Test Pit Terminated @ 0.5m bgl			

C15			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2 0.2-0.4		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C16			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C17			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C18			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C19			
Depth (m)	Sample	Description	Additional Observations
0.0-0.05		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.05-0.3		Gravelly CLAY, (GC), brown red, dry, firm	
0.3-0.5		silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.5m bgl			

C20			
Depth (m)	Sample	Description	Additional Observations
0.0-0.05		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.05-0.3		Gravelly CLAY, (GC), brown red, dry, firm	
0.3-0.5		silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.5m bgl			

C21			
Depth (m)	Sample	Description	Additional Observations
0.0-0.05		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.05-0.4		Gravelly CLAY, (GC), brown red, dry, firm	
0.4-0.5		silty CLAY, (CH), red grey, dry, firm	
Test Pit Terminated @ 0.5m bgl			

C22			
Depth (m)	Sample	Description	Additional Observations
0.0-0.05		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.05-0.4		Gravelly CLAY, (GC), brown red, dry, firm	
0.4-0.5		silty CLAY, (CH), red grey, dry, firm	
Test Pit Terminated @ 0.5m bgl			

C23			
Depth (m)	Sample	Description	Additional Observations
0.0-0.05		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.05-0.4		Gravelly CLAY, (GC), brown red, dry, firm	
0.4-0.5		silty CLAY, (CH), red grey, dry, firm	
Test Pit Terminated @ 0.5m bgl			

C24			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C25			
Depth (m)	Sample	Description	Additional Observations
0.0-0.02		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C26			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C27			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C28			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C29			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C30			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C31			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C32			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2 0.2-0.4		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C33			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2 0.2-0.4		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C34			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2 0.2-0.4		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C35			
Depth (m)	Sample	Description	Additional Observations
0.0-0.4 0.4-0.6		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.6m bgl			

C36			
Depth (m)	Sample	Description	Additional Observations
0.0-0.4 0.4-0.6		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.6m bgl			

C37			
Depth (m)	Sample	Description	Additional Observations
0.0-0.4 0.4-0.6		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.6m bgl			

C38			
Depth (m)	Sample	Description	Additional Observations
0.0-0.4 0.4-0.6		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.6m bgl			

C39			
Depth (m)	Sample	Description	Additional Observations
0.0-0.4 0.4-0.6		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.6m bgl			

C40			
Depth (m)	Sample	Description	Additional Observations
0.0-0.4 0.4-0.6		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.6m bgl			

C41			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2 0.2-0.4		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C42			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2 0.2-0.4		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C43			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2 0.2-0.4		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C44			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2 0.2-0.4		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C45			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2 0.2-0.4		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C46			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2 0.2-0.4		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C47			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2 0.2-0.4		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C48			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C49			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C50			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C51			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C52			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C53			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C54			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C55			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C56			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C57			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C58			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C59			
Depth (m)	Sample	Description	Additional Observations
0.0-0.3		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.3-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C60			
Depth (m)	Sample	Description	Additional Observations
0.0-0.3		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.3-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

C61			
Depth (m)	Sample	Description	Additional Observations
0.0-0.3		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.3-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

TP01			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.5		Silty CLAY, (CH), brown grey, dry to moist, firm	
0.5-0.8		Silty CLAY (CH), grey red, dry, firm	
0.8-1.3		Silty CLAY (CH), brown orange grey, dry firm	
1.3-1.5		Shaley CLAY (GC), grey brown, dry, firm	
Test Pit Terminated @ 1.5m bgl			

TP02			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-1.0		Silty CLAY, (CH), red grey, dry to moist, firm	
1.0-1.2		Shaley CLAY (GC), grey brown, dry, firm	
1.2-1.3		SHALE, weak, distinctly weathered, grey, hard	
Test Pit Terminated @ 1.3m bgl			

TP03			
Depth (m)	Sample	Description	Additional Observations
0.0-0.3		FILL: Silty Clay, brown, dry firm	
0.3-0.5		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.5-1.6		Silty CLAY, (CH), red brown, dry to moist, firm	
1.6-1.7		Shaley CLAY (GC), grey brown, dry, firm	
1.7-1.8		SHALE, weak, distinctly weathered, grey, hard	
Test Pit Terminated @ 1.8m bgl			

TP04			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		Silty CLAY, (CH), red, dry to moist, firm	
0.4-1.1		Shaley CLAY (GC), grey, dry, firm	
1.1-1.2		SHALE, weak, distinctly weathered, grey, hard	
Test Pit Terminated @ 1.2m bgl			

TP05			
Depth (m)	Sample	Description	Additional Observations
0.0-0.1		Sandy GRAVEL, (GM), grey, dry, loose	Roadbase
0.1-0.3		silty CLAY, (CH), gey, dry, firm	
Test Pit Terminated @ 0.3m bgl			

TP06			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

TP07			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		silty CLAY, (CH), brown, dry, firm	
Test Pit Terminated @ 0.4m bgl			

TP08 (Dam Wall ~1.4m)			
Depth (m)	Sample	Description	Additional Observations
0.0-1.4		FILL: silty CLAY, brown red grey, traces of gravel, dry, firm	
Test Pit Terminated @ 1.4m bgl			

TP09 (Dam Wall ~0.8m)			
Depth (m)	Sample	Description	Additional Observations
0.0-0.8		FILL: shaley CLAY, grey brown, dry, firm	
Test Pit Terminated @ 0.8m bgl			

TP10			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		FILL: silty CLAY, brown red grey, traces of gravel, dry, firm	
0.2-0.3		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.3-0.4		silty CLAY, (CH), brown red, dry, firm	
Test Pit Terminated @ 0.4m bgl			

TP11			
Depth (m)	Sample	Description	Additional Observations
0.0-0.1 0.1-0.3		Sandy GRAVEL, (GM), grey, dry, loose silty CLAY, (CH), gey, dry, firm	Roadbase. ~5% PACM
Test Pit Terminated @ 0.3m bgl			

TP12			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
Test Pit Terminated @ 0.2m bgl			

D/WAY			
Depth (m)	Sample	Description	Additional Observations
0.0-0.1 0.1-0.15		Sandy GRAVEL, (GM), grey, dry, loose Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	Roadbase
Test Pit Terminated @ 0.15m bgl			

BH/TP			
Depth (m)	Sample	Description	Additional Observations
0.0-0.4 0.4-0.8 0.8-1.1 1.1-2.1 2.1-2.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft Silty CLAY, (CH), brown red, moist, soft Shaley Silty Clay, (CL), brown yellow grey, moist to dry, firm Shaley CLAY, (CL), grey, moist, firm SHALE, weak, distinctly weathered, grey	
Test Pit Terminated @ 2.2m bgl			

APPENDIX C

Laboratory Analytical Reports and Chain of Custody Documentation

eurofins | mgt

Certificate of Analysis

Geotest Services
Unit 18/24 Garling Rd
Kings Park
NSW 2148

Attention: **Dave Spasojevic**

Report **437424-S**
Project name LOT 1 AND LOT 2 CAMDEN VALLEY WAY 7503/1
Received Date Nov 03, 2014

Client Sample ID **Sample Matrix** **Eurofins | mgt Sample No.** **Date Sampled** Test/Reference	LOR	Unit	**C1-C2** **Soil** **S14-No00977** **Oct 30, 2014**	**C3-C4** **Soil** **S14-No00978** **Oct 30, 2014**	**C5-C6** **Soil** **S14-No00979** **Oct 30, 2014**	**C7-C8** **Soil** **S14-No00980** **Oct 30, 2014**
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.05	-	0.22	0.15
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	[Q09A]55	-	75	109
Tetrachloro-m-xylene (surr.)	1	%	[Q09A]50	-	96	93
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	-	-	< 0.5
Coumaphos	0.5	mg/kg	-	-	-	< 0.5
Demeton (total)	1	mg/kg	-	-	-	< 1
Diazinon	0.5	mg/kg	-	-	-	< 0.5
Dichlorvos	0.5	mg/kg	-	-	-	< 0.5
Dimethoate	0.5	mg/kg	-	-	-	< 0.5
Disulfoton	0.5	mg/kg	-	-	-	< 0.5
Ethoprop	0.5	mg/kg	-	-	-	< 0.5
Fenitrothion	0.5	mg/kg	-	-	-	< 0.5
Fensulfothion	0.5	mg/kg	-	-	-	< 0.5
Fenthion	0.5	mg/kg	-	-	-	< 0.5
Methyl azinphos	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID			C1-C2	C3-C4	C5-C6	C7-C8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No00977	S14-No00978	S14-No00979	S14-No00980
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Malathion	0.5	mg/kg	-	-	-	< 0.5
Methyl parathion	0.5	mg/kg	-	-	-	< 0.5
Mevinphos	0.5	mg/kg	-	-	-	< 0.5
Monocrotophos	10	mg/kg	-	-	-	< 10
Parathion	0.5	mg/kg	-	-	-	< 0.5
Phorate	0.5	mg/kg	-	-	-	< 0.5
Profenofos	0.5	mg/kg	-	-	-	< 0.5
Prothiofos	0.5	mg/kg	-	-	-	< 0.5
Ronnel	0.5	mg/kg	-	-	-	< 0.5
Stirophos	0.5	mg/kg	-	-	-	< 0.5
Trichloronate	0.5	mg/kg	-	-	-	< 0.5
Triphenylphosphate (surr.)	1	%	-	-	-	111
Heavy Metals						
Arsenic	2	mg/kg	7.6	14	15	6.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	15	35	34	15
Copper	5	mg/kg	18	30	37	21
Lead	5	mg/kg	54	46	150	29
Mercury	0.05	mg/kg	0.09	0.05	< 0.05	0.06
Nickel	5	mg/kg	9.6	7.1	6.9	< 5
Zinc	5	mg/kg	73	100	120	31
% Moisture	0.1	%	22	8.3	9.1	16

Client Sample ID			C9-C10	C11-C12	C13-C14	C15-C16
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No00981	S14-No00982	S14-No00983	S14-No00984
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.18	0.40	0.30	0.47
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			C9-C10	C11-C12	C13-C14	C15-C16
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No00981	S14-No00982	S14-No00983	S14-No00984
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	71	70	72	73
Tetrachloro-m-xylene (surr.)	1	%	86	89	85	91
Heavy Metals						
Arsenic	2	mg/kg	6.9	11	20	15
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	16	23	38	27
Copper	5	mg/kg	19	38	34	37
Lead	5	mg/kg	18	23	37	65
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	6.1	8.4	5.6	6.6
Zinc	5	mg/kg	23	54	47	110
% Moisture	0.1	%	15	13	8.9	12

Client Sample ID			C17-C18	C19-C20	C21-C22	C25-C26
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No00985	S14-No00986	S14-No00987	S14-No00988
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.37	0.40	0.15	0.59
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.06
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	109	71	91	94
Tetrachloro-m-xylene (surr.)	1	%	82	89	96	95

Client Sample ID			C17-C18	C19-C20	C21-C22	C25-C26
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No00985	S14-No00986	S14-No00987	S14-No00988
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	-	-	-
Coumaphos	0.5	mg/kg	< 0.5	-	-	-
Demeton (total)	1	mg/kg	< 1	-	-	-
Diazinon	0.5	mg/kg	< 0.5	-	-	-
Dichlorvos	0.5	mg/kg	< 0.5	-	-	-
Dimethoate	0.5	mg/kg	< 0.5	-	-	-
Disulfoton	0.5	mg/kg	< 0.5	-	-	-
Ethoprop	0.5	mg/kg	< 0.5	-	-	-
Fenitrothion	0.5	mg/kg	< 0.5	-	-	-
Fensulfothion	0.5	mg/kg	< 0.5	-	-	-
Fenthion	0.5	mg/kg	< 0.5	-	-	-
Methyl azinphos	0.5	mg/kg	< 0.5	-	-	-
Malathion	0.5	mg/kg	< 0.5	-	-	-
Methyl parathion	0.5	mg/kg	< 0.5	-	-	-
Mevinphos	0.5	mg/kg	< 0.5	-	-	-
Monocrotophos	10	mg/kg	< 10	-	-	-
Parathion	0.5	mg/kg	< 0.5	-	-	-
Phorate	0.5	mg/kg	< 0.5	-	-	-
Profenofos	0.5	mg/kg	< 0.5	-	-	-
Prothiofos	0.5	mg/kg	< 0.5	-	-	-
Ronnel	0.5	mg/kg	< 0.5	-	-	-
Stirophos	0.5	mg/kg	< 0.5	-	-	-
Trichloronate	0.5	mg/kg	< 0.5	-	-	-
Triphenylphosphate (surr.)	1	%	109	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	19	13	14	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	58	27	30	23
Copper	5	mg/kg	32	29	28	47
Lead	5	mg/kg	46	24	38	27
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	16	6.9	12	14
Zinc	5	mg/kg	91	42	80	78
% Moisture	0.1	%	9.2	13	13	13

Client Sample ID			C29-C30	C31-C32	C33-C34	C35-C36
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No00989	S14-No00990	S14-No00991	S14-No00992
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	0.94	0.99	-	0.72
4.4'-DDT	0.05	mg/kg	0.15	0.09	-	0.16
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05

Client Sample ID			C29-C30	C31-C32	C33-C34	C35-C36
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No00989	S14-No00990	S14-No00991	S14-No00992
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	92	115	-	112
Tetrachloro-m-xylene (surr.)	1	%	91	98	-	99
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	< 0.5	-	< 0.5
Coumaphos	0.5	mg/kg	-	< 0.5	-	< 0.5
Demeton (total)	1	mg/kg	-	< 1	-	< 1
Diazinon	0.5	mg/kg	-	< 0.5	-	< 0.5
Dichlorvos	0.5	mg/kg	-	< 0.5	-	< 0.5
Dimethoate	0.5	mg/kg	-	< 0.5	-	< 0.5
Disulfoton	0.5	mg/kg	-	< 0.5	-	< 0.5
Ethoprop	0.5	mg/kg	-	< 0.5	-	< 0.5
Fenitrothion	0.5	mg/kg	-	< 0.5	-	< 0.5
Fensulfothion	0.5	mg/kg	-	< 0.5	-	< 0.5
Fenthion	0.5	mg/kg	-	< 0.5	-	< 0.5
Methyl azinphos	0.5	mg/kg	-	< 0.5	-	< 0.5
Malathion	0.5	mg/kg	-	< 0.5	-	< 0.5
Methyl parathion	0.5	mg/kg	-	< 0.5	-	< 0.5
Mevinphos	0.5	mg/kg	-	< 0.5	-	< 0.5
Monocrotophos	10	mg/kg	-	< 10	-	< 10
Parathion	0.5	mg/kg	-	< 0.5	-	< 0.5
Phorate	0.5	mg/kg	-	< 0.5	-	< 0.5
Profenofos	0.5	mg/kg	-	< 0.5	-	< 0.5
Prothiofos	0.5	mg/kg	-	< 0.5	-	< 0.5
Ronnel	0.5	mg/kg	-	< 0.5	-	< 0.5
Stirophos	0.5	mg/kg	-	< 0.5	-	< 0.5
Trichloronate	0.5	mg/kg	-	< 0.5	-	< 0.5
Triphenylphosphate (surr.)	1	%	-	109	-	111
Heavy Metals						
Arsenic	2	mg/kg	8.2	9.8	14	16
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	22	31	31	35
Copper	5	mg/kg	37	45	32	27
Lead	5	mg/kg	21	29	36	33
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			C29-C30	C31-C32	C33-C34	C35-C36
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No00989	S14-No00990	S14-No00991	S14-No00992
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel	5	mg/kg	14	16	8.8	8.9
Zinc	5	mg/kg	77	92	92	58
% Moisture	0.1	%	12	12	8.2	13

Client Sample ID			C37-C38	C39-C40	C41-C42	C45-C46
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No00993	S14-No00994	S14-No00995	S14-No00996
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.59	-	0.47	0.21
4.4'-DDT	0.05	mg/kg	0.10	-	0.11	0.07
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	91	-	90	115
Tetrachloro-m-xylene (surr.)	1	%	97	-	89	103
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	-	-	< 0.5
Coumaphos	0.5	mg/kg	-	-	-	< 0.5
Demeton (total)	1	mg/kg	-	-	-	< 1
Diazinon	0.5	mg/kg	-	-	-	< 0.5
Dichlorvos	0.5	mg/kg	-	-	-	< 0.5
Dimethoate	0.5	mg/kg	-	-	-	< 0.5
Disulfoton	0.5	mg/kg	-	-	-	< 0.5
Ethoprop	0.5	mg/kg	-	-	-	< 0.5
Fenitrothion	0.5	mg/kg	-	-	-	< 0.5
Fensulfothion	0.5	mg/kg	-	-	-	< 0.5
Fenthion	0.5	mg/kg	-	-	-	< 0.5
Methyl azinphos	0.5	mg/kg	-	-	-	< 0.5
Malathion	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID			C37-C38	C39-C40	C41-C42	C45-C46
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No00993	S14-No00994	S14-No00995	S14-No00996
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Methyl parathion	0.5	mg/kg	-	-	-	< 0.5
Mevinphos	0.5	mg/kg	-	-	-	< 0.5
Monocrotophos	10	mg/kg	-	-	-	< 10
Parathion	0.5	mg/kg	-	-	-	< 0.5
Phorate	0.5	mg/kg	-	-	-	< 0.5
Profenofos	0.5	mg/kg	-	-	-	< 0.5
Prothiofos	0.5	mg/kg	-	-	-	< 0.5
Ronnel	0.5	mg/kg	-	-	-	< 0.5
Stirophos	0.5	mg/kg	-	-	-	< 0.5
Trichloronate	0.5	mg/kg	-	-	-	< 0.5
Triphenylphosphate (surr.)	1	%	-	-	-	109
Heavy Metals						
Arsenic	2	mg/kg	11	8.8	14	15
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	22	18	32	34
Copper	5	mg/kg	20	15	35	25
Lead	5	mg/kg	27	27	26	29
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	6.4	6.5	8.6	10
Zinc	5	mg/kg	39	31	68	53
% Moisture	0.1	%	18	18	9.5	9.1

Client Sample ID			C49-C50	C51-C52	C53-C54	C55-C56
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No00997	S14-No00998	S14-No00999	S14-No01000
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	0.32	0.66	-	0.63
4.4'-DDT	0.05	mg/kg	0.09	0.13	-	0.18
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05

Client Sample ID			C49-C50	C51-C52	C53-C54	C55-C56
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No00997	S14-No00998	S14-No00999	S14-No01000
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	90	89	-	97
Tetrachloro-m-xylene (surr.)	1	%	94	93	-	101
Heavy Metals						
Arsenic	2	mg/kg	22	16	17	12
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	51	39	32	27
Copper	5	mg/kg	23	34	28	33
Lead	5	mg/kg	35	26	28	24
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	8.0	7.5	14	6.7
Zinc	5	mg/kg	50	49	83	52
% Moisture	0.1	%	8.1	8.6	9.4	11

Client Sample ID			C57-C58	C59-C60	TP5 0.2-0.3	TP6 0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No01001	S14-No01002	S14-No01003	S14-No01004
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	-	< 0.5
Total PAH	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	-	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	-	-	1.2
2-Fluorobiphenyl (surr.)	1	%	-	-	-	99
p-Terphenyl-d14 (surr.)	1	%	-	-	-	102

Client Sample ID			C57-C58	C59-C60	TP5 0.2-0.3	TP6 0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No01001	S14-No01002	S14-No01003	S14-No01004
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	0.32	0.64	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	0.11	-	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	-
Toxaphene	1	mg/kg	< 1	< 1	-	-
Dibutylchlorendate (surr.)	1	%	93	112	-	-
Tetrachloro-m-xylene (surr.)	1	%	100	101	-	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	< 0.5	-	-
Coumaphos	0.5	mg/kg	-	< 0.5	-	-
Demeton (total)	1	mg/kg	-	< 1	-	-
Diazinon	0.5	mg/kg	-	< 0.5	-	-
Dichlorvos	0.5	mg/kg	-	< 0.5	-	-
Dimethoate	0.5	mg/kg	-	< 0.5	-	-
Disulfoton	0.5	mg/kg	-	< 0.5	-	-
Ethoprop	0.5	mg/kg	-	< 0.5	-	-
Fenitrothion	0.5	mg/kg	-	< 0.5	-	-
Fensulfothion	0.5	mg/kg	-	< 0.5	-	-
Fenthion	0.5	mg/kg	-	< 0.5	-	-
Methyl azinphos	0.5	mg/kg	-	< 0.5	-	-
Malathion	0.5	mg/kg	-	< 0.5	-	-
Methyl parathion	0.5	mg/kg	-	< 0.5	-	-
Mevinphos	0.5	mg/kg	-	< 0.5	-	-
Monocrotophos	10	mg/kg	-	< 10	-	-
Parathion	0.5	mg/kg	-	< 0.5	-	-
Phorate	0.5	mg/kg	-	< 0.5	-	-
Profenofos	0.5	mg/kg	-	< 0.5	-	-
Prothiofos	0.5	mg/kg	-	< 0.5	-	-
Ronnel	0.5	mg/kg	-	< 0.5	-	-
Stirophos	0.5	mg/kg	-	< 0.5	-	-
Trichloronate	0.5	mg/kg	-	< 0.5	-	-
Triphenylphosphate (surr.)	1	%	-	113	-	-

Client Sample ID			C57-C58	C59-C60	TP5 0.2-0.3	TP6 0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No01001	S14-No01002	S14-No01003	S14-No01004
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	24	12	14	23
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	52	29	35	46
Copper	5	mg/kg	34	19	14	22
Lead	5	mg/kg	42	27	44	89
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	9.9	6.5	7.2	9.0
Zinc	5	mg/kg	61	42	110	200
% Moisture	0.1	%	8.5	15	6.6	9.3

Client Sample ID			TP7 0.2-0.3	TP12 0.1-0.2	C61 0.1-0.2	PACM1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No01005	S14-No01006	S14-No01007	S14-No01008
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	1.7	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	0.46	-
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	-
Toxaphene	1	mg/kg	< 1	-	< 1	-
Dibutylchlorendate (surr.)	1	%	86	-	126	-
Tetrachloro-m-xylene (surr.)	1	%	104	-	103	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	-	< 0.5	-
Coumaphos	0.5	mg/kg	-	-	< 0.5	-
Demeton (total)	1	mg/kg	-	-	< 1	-
Diazinon	0.5	mg/kg	-	-	< 0.5	-
Dichlorvos	0.5	mg/kg	-	-	< 0.5	-
Dimethoate	0.5	mg/kg	-	-	< 0.5	-
Disulfoton	0.5	mg/kg	-	-	< 0.5	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TP7 0.2-0.3 Soil S14-No01005 Oct 30, 2014	TP12 0.1-0.2 Soil S14-No01006 Oct 30, 2014	C61 0.1-0.2 Soil S14-No01007 Oct 30, 2014	PACM1 Soil S14-No01008 Oct 30, 2014
Organophosphorus Pesticides (OP)						
Ethoprop	0.5	mg/kg	-	-	< 0.5	-
Fenitrothion	0.5	mg/kg	-	-	< 0.5	-
Fensulfothion	0.5	mg/kg	-	-	< 0.5	-
Fenthion	0.5	mg/kg	-	-	< 0.5	-
Methyl azinphos	0.5	mg/kg	-	-	< 0.5	-
Malathion	0.5	mg/kg	-	-	< 0.5	-
Methyl parathion	0.5	mg/kg	-	-	< 0.5	-
Mevinphos	0.5	mg/kg	-	-	< 0.5	-
Monocrotophos	10	mg/kg	-	-	< 10	-
Parathion	0.5	mg/kg	-	-	< 0.5	-
Phorate	0.5	mg/kg	-	-	< 0.5	-
Profenofos	0.5	mg/kg	-	-	< 0.5	-
Prothiofos	0.5	mg/kg	-	-	< 0.5	-
Ronnel	0.5	mg/kg	-	-	< 0.5	-
Stirophos	0.5	mg/kg	-	-	< 0.5	-
Trichloronate	0.5	mg/kg	-	-	< 0.5	-
Triphenylphosphate (surr.)	1	%	-	-	123	-
Heavy Metals						
Arsenic	2	mg/kg	17	21	15	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	38	49	35	-
Copper	5	mg/kg	13	22	37	-
Lead	5	mg/kg	62	44	34	-
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Nickel	5	mg/kg	10	7.8	7.8	-
Zinc	5	mg/kg	170	170	57	-
% Moisture	0.1	%	6.6	8.5	15	-
Asbestos Absence /Presence			-	-	-	see attached

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	PACM3 Soil S14-No01009 Oct 30, 2014	DUP1 Soil S14-No01010 Oct 30, 2014	DUP2 Soil S14-No01011 Oct 30, 2014
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	1.9
4.4'-DDT	0.05	mg/kg	-	< 0.05	0.48
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05

Client Sample ID			PACM3	DUP1	DUP2
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-No01009	S14-No01010	S14-No01011
Date Sampled			Oct 30, 2014	Oct 30, 2014	Oct 30, 2014
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
Endrin	0.05	mg/kg	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	88	103
Tetrachloro-m-xylene (surr.)	1	%	-	125	94
Organophosphorus Pesticides (OP)					
Chlorpyrifos	0.5	mg/kg	-	-	< 0.5
Coumaphos	0.5	mg/kg	-	-	< 0.5
Demeton (total)	1	mg/kg	-	-	< 1
Diazinon	0.5	mg/kg	-	-	< 0.5
Dichlorvos	0.5	mg/kg	-	-	< 0.5
Dimethoate	0.5	mg/kg	-	-	< 0.5
Disulfoton	0.5	mg/kg	-	-	< 0.5
Ethoprop	0.5	mg/kg	-	-	< 0.5
Fenitrothion	0.5	mg/kg	-	-	< 0.5
Fensulfothion	0.5	mg/kg	-	-	< 0.5
Fenthion	0.5	mg/kg	-	-	< 0.5
Methyl azinphos	0.5	mg/kg	-	-	< 0.5
Malathion	0.5	mg/kg	-	-	< 0.5
Methyl parathion	0.5	mg/kg	-	-	< 0.5
Mevinphos	0.5	mg/kg	-	-	< 0.5
Monocrotophos	10	mg/kg	-	-	< 10
Parathion	0.5	mg/kg	-	-	< 0.5
Phorate	0.5	mg/kg	-	-	< 0.5
Profenofos	0.5	mg/kg	-	-	< 0.5
Prothiofos	0.5	mg/kg	-	-	< 0.5
Ronnel	0.5	mg/kg	-	-	< 0.5
Stirophos	0.5	mg/kg	-	-	< 0.5
Trichloronate	0.5	mg/kg	-	-	< 0.5
Triphenylphosphate (surr.)	1	%	-	-	104
Heavy Metals					
Arsenic	2	mg/kg	-	20	15
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4
Chromium	5	mg/kg	-	44	35
Copper	5	mg/kg	-	9.2	32
Lead	5	mg/kg	-	29	35
Mercury	0.05	mg/kg	-	< 0.05	< 0.05
Nickel	5	mg/kg	-	16	9.4
Zinc	5	mg/kg	-	130	64
% Moisture	0.1	%	-	7.1	15
Asbestos Absence /Presence			see attached	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Sydney	Nov 06, 2014	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Organochlorine Pesticides	Sydney	Nov 06, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Organophosphorus Pesticides (OP)	Sydney	Nov 06, 2014	14 Day
- Method: E014 Organophosphorus Pesticides (OP)			
Metals M8	Sydney	Nov 07, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
% Moisture	Sydney	Nov 03, 2014	28 Day
- Method: E005 Moisture Content			
Asbestos Absence /Presence	Sydney	Nov 03, 2014	0 Day
- Method: Asbestos – LTM-ASB-8020			

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NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Geotest Services	**Order No.:**		**Received:**	Nov 3, 2014 4:50 PM
Address:	Unit 18/24 Garling Rd	**Report #:**	437424	**Due:**	Nov 10, 2014
	Kings Park	**Phone:**	02 9671 4443	**Priority:**	5 Day
	NSW 2148	**Fax:**	02 9671 4343	**Contact Name:**	Dave Spasojevic
Project Name:	LOT 1 AND LOT 2 CAMDEN VALLEY WAY 7503/1				

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					% Moisture	Asbestos Absence /Presence	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	Organophosphorus Pesticides (OP)
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
C1-C2	Oct 30, 2014		Soil	S14-No00977	X			X	X	
C3-C4	Oct 30, 2014		Soil	S14-No00978	X				X	
C5-C6	Oct 30, 2014		Soil	S14-No00979	X			X	X	
C7-C8	Oct 30, 2014		Soil	S14-No00980	X			X	X	X
C9-C10	Oct 30, 2014		Soil	S14-No00981	X			X	X	
C11-C12	Oct 30, 2014		Soil	S14-No00982	X			X	X	
C13-C14	Oct 30, 2014		Soil	S14-No00983	X			X	X	
C15-C16	Oct 30, 2014		Soil	S14-No00984	X			X	X	
C17-C18	Oct 30, 2014		Soil	S14-No00985	X			X	X	X
C19-C20	Oct 30, 2014		Soil	S14-No00986	X			X	X	

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: Geotest Services
Address: Unit 18/24 Garling Rd
Kings Park
NSW 2148

Project Name: LOT 1 AND LOT 2 CAMDEN VALLEY WAY 7503/1

Order No.:
Report #: 437424
Phone: 02 9671 4443
Fax: 02 9671 4343

Received: Nov 3, 2014 4:50 PM
Due: Nov 10, 2014
Priority: 5 Day
Contact Name: Dave Spasojevic

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					% Moisture	Asbestos Absence /Presence	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	Organophosphorus Pesticides (OP)
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
C21-C22	Oct 30, 2014		Soil	S14-No00987	X			X	X	
C25-C26	Oct 30, 2014		Soil	S14-No00988	X			X	X	
C29-C30	Oct 30, 2014		Soil	S14-No00989	X			X	X	
C31-C32	Oct 30, 2014		Soil	S14-No00990	X			X	X	X
C33-C34	Oct 30, 2014		Soil	S14-No00991	X				X	
C35-C36	Oct 30, 2014		Soil	S14-No00992	X			X	X	X
C37-C38	Oct 30, 2014		Soil	S14-No00993	X			X	X	
C39-C40	Oct 30, 2014		Soil	S14-No00994	X				X	
C41-C42	Oct 30, 2014		Soil	S14-No00995	X			X	X	
C45-C46	Oct 30, 2014		Soil	S14-No00996	X			X	X	X
C49-C50	Oct 30, 2014		Soil	S14-No00997	X			X	X	

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Geotest Services	**Order No.:**		**Received:**	Nov 3, 2014 4:50 PM
Address:	Unit 18/24 Garling Rd	**Report #:**	437424	**Due:**	Nov 10, 2014
	Kings Park	**Phone:**	02 9671 4443	**Priority:**	5 Day
	NSW 2148	**Fax:**	02 9671 4343	**Contact Name:**	Dave Spasojevic
Project Name:	LOT 1 AND LOT 2 CAMDEN VALLEY WAY 7503/1				

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					% Moisture	Asbestos Absence /Presence	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	Organophosphorus Pesticides (OP)
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
C51-C52	Oct 30, 2014		Soil	S14-No00998	X			X	X	
C53-C54	Oct 30, 2014		Soil	S14-No00999	X				X	
C55-C56	Oct 30, 2014		Soil	S14-No01000	X			X	X	
C57-C58	Oct 30, 2014		Soil	S14-No01001	X			X	X	
C59-C60	Oct 30, 2014		Soil	S14-No01002	X			X	X	X
TP5 0.2-0.3	Oct 30, 2014		Soil	S14-No01003	X				X	
TP6 0.1-0.2	Oct 30, 2014		Soil	S14-No01004	X		X		X	
TP7 0.2-0.3	Oct 30, 2014		Soil	S14-No01005	X			X	X	
TP12 0.1-0.2	Oct 30, 2014		Soil	S14-No01006	X				X	
C61 0.1-0.2	Oct 30, 2014		Soil	S14-No01007	X			X	X	X
PACM1	Oct 30, 2014		Soil	S14-No01008		X				

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NATA # 1261 Site # 20794

Company Name: Geotest Services
Address: Unit 18/24 Garling Rd
Kings Park
NSW 2148

Project Name: LOT 1 AND LOT 2 CAMDEN VALLEY WAY 7503/1

Order No.:
Report #: 437424
Phone: 02 9671 4443
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Received: Nov 3, 2014 4:50 PM
Due: Nov 10, 2014
Priority: 5 Day
Contact Name: Dave Spasojevic

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					% Moisture	Asbestos Absence /Presence	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	Organophosphorus Pesticides (OP)
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
PACM3	Oct 30, 2014		Soil	S14-No01009		X				
DUP1	Oct 30, 2014		Soil	S14-No01010	X			X	X	
DUP2	Oct 30, 2014		Soil	S14-No01011	X			X	X	X

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	mg/kg	< 0.5			0.5	Pass	
Coumaphos	mg/kg	< 0.5			0.5	Pass	
Demeton (total)	mg/kg	< 1			1	Pass	
Diazinon	mg/kg	< 0.5			0.5	Pass	
Dichlorvos	mg/kg	< 0.5			0.5	Pass	
Dimethoate	mg/kg	< 0.5			0.5	Pass	
Disulfoton	mg/kg	< 0.5			0.5	Pass	
Ethoprop	mg/kg	< 0.5			0.5	Pass	
Fenitrothion	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fensulfothion	mg/kg	< 0.5			0.5	Pass	
Fenthion	mg/kg	< 0.5			0.5	Pass	
Methyl azinphos	mg/kg	< 0.5			0.5	Pass	
Malathion	mg/kg	< 0.5			0.5	Pass	
Methyl parathion	mg/kg	< 0.5			0.5	Pass	
Mevinphos	mg/kg	< 0.5			0.5	Pass	
Monocrotophos	mg/kg	< 10			10	Pass	
Parathion	mg/kg	< 0.5			0.5	Pass	
Phorate	mg/kg	< 0.5			0.5	Pass	
Profenofos	mg/kg	< 0.5			0.5	Pass	
Prothiofos	mg/kg	< 0.5			0.5	Pass	
Ronnel	mg/kg	< 0.5			0.5	Pass	
Stirophos	mg/kg	< 0.5			0.5	Pass	
Trichloronate	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	126			70-130	Pass	
Acenaphthylene	%	127			70-130	Pass	
Anthracene	%	109			70-130	Pass	
Benz(a)anthracene	%	115			70-130	Pass	
Benzo(a)pyrene	%	105			70-130	Pass	
Benzo(b&j)fluoranthene	%	100			70-130	Pass	
Benzo(g.h.i)perylene	%	101			70-130	Pass	
Benzo(k)fluoranthene	%	112			70-130	Pass	
Chrysene	%	117			70-130	Pass	
Dibenz(a.h)anthracene	%	108			70-130	Pass	
Fluoranthene	%	104			70-130	Pass	
Fluorene	%	130			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	108			70-130	Pass	
Naphthalene	%	125			70-130	Pass	
Phenanthrene	%	126			70-130	Pass	
Pyrene	%	127			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	84			70-130	Pass	
4.4'-DDD	%	92			70-130	Pass	
4.4'-DDE	%	122			70-130	Pass	
4.4'-DDT	%	84			70-130	Pass	
a-BHC	%	75			70-130	Pass	
Aldrin	%	95			70-130	Pass	
b-BHC	%	89			70-130	Pass	
d-BHC	%	83			70-130	Pass	
Dieldrin	%	84			70-130	Pass	
Endosulfan I	%	79			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	%	82			70-130	Pass	
Endosulfan sulphate	%	83			70-130	Pass	
Endrin	%	90			70-130	Pass	
Endrin aldehyde	%	88			70-130	Pass	
Endrin ketone	%	89			70-130	Pass	
g-BHC (Lindane)	%	91			70-130	Pass	
Heptachlor	%	85			70-130	Pass	
Heptachlor epoxide	%	88			70-130	Pass	
Methoxychlor	%	89			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	%	104			70-130	Pass	
Coumaphos	%	100			70-130	Pass	
Demeton (total)	%	102			70-130	Pass	
Diazinon	%	102			70-130	Pass	
Dichlorvos	%	100			70-130	Pass	
Disulfoton	%	107			70-130	Pass	
Ethoprop	%	102			70-130	Pass	
Fenitrothion	%	114			70-130	Pass	
Fensulfothion	%	80			70-130	Pass	
Fenthion	%	105			70-130	Pass	
Methyl azinphos	%	86			70-130	Pass	
Malathion	%	124			70-130	Pass	
Mevinphos	%	101			70-130	Pass	
Monocrotophos	%	99			70-130	Pass	
Parathion	%	128			70-130	Pass	
Phorate	%	98			70-130	Pass	
Profenofos	%	104			70-130	Pass	
Prothiofos	%	100			70-130	Pass	
Ronnel	%	109			70-130	Pass	
Stirophos	%	96			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	110			70-130	Pass	
Cadmium	%	111			70-130	Pass	
Chromium	%	112			70-130	Pass	
Copper	%	119			70-130	Pass	
Lead	%	116			70-130	Pass	
Mercury	%	109			70-130	Pass	
Nickel	%	110			70-130	Pass	
Zinc	%	103			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-No00978	CP	%	96			70-130	Pass	
Cadmium	S14-No00978	CP	%	99			70-130	Pass	
Chromium	S14-No00978	CP	%	97			70-130	Pass	
Copper	S14-No00978	CP	%	85			70-130	Pass	
Lead	S14-No00978	CP	%	102			70-130	Pass	
Mercury	S14-No00978	CP	%	102			70-130	Pass	
Nickel	S14-No00978	CP	%	97			70-130	Pass	
Zinc	S14-No00978	CP	%	104			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Coumaphos	S14-No00985	CP	%	97			70-130	Pass	
Diazinon	S14-No00985	CP	%	94			70-130	Pass	
Fenitrothion	S14-No00985	CP	%	105			70-130	Pass	
Methyl azinphos	S14-No00985	CP	%	81			70-130	Pass	
Malathion	S14-No00985	CP	%	114			70-130	Pass	
Phorate	S14-No00985	CP	%	78			70-130	Pass	
Stirophos	S14-No00985	CP	%	89			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-No00988	CP	%	101			70-130	Pass	
Cadmium	S14-No00988	CP	%	100			70-130	Pass	
Chromium	S14-No00988	CP	%	119			70-130	Pass	
Copper	S14-No00988	CP	%	124			70-130	Pass	
Lead	S14-No00988	CP	%	121			70-130	Pass	
Mercury	S14-No00988	CP	%	111			70-130	Pass	
Nickel	S14-No00988	CP	%	109			70-130	Pass	
Zinc	S14-No00988	CP	%	125			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-No00998	CP	%	96			70-130	Pass	
Cadmium	S14-No00998	CP	%	100			70-130	Pass	
Chromium	S14-No00998	CP	%	126			70-130	Pass	
Copper	S14-No00998	CP	%	92			70-130	Pass	
Lead	S14-No00998	CP	%	98			70-130	Pass	
Mercury	S14-No00998	CP	%	110			70-130	Pass	
Nickel	S14-No00998	CP	%	98			70-130	Pass	
Zinc	S14-No00998	CP	%	108			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-No04734	NCP	%	127			70-130	Pass	
Acenaphthylene	S14-No04734	NCP	%	123			70-130	Pass	
Anthracene	S14-No04734	NCP	%	128			70-130	Pass	
Benz(a)anthracene	S14-No04734	NCP	%	123			70-130	Pass	
Benzo(a)pyrene	S14-No04734	NCP	%	108			70-130	Pass	
Benzo(b&j)fluoranthene	S14-No04734	NCP	%	105			70-130	Pass	
Benzo(g.h.i)perylene	S14-No04734	NCP	%	103			70-130	Pass	
Benzo(k)fluoranthene	S14-No04734	NCP	%	116			70-130	Pass	
Chrysene	S14-No04734	NCP	%	117			70-130	Pass	
Dibenz(a.h)anthracene	S14-No04734	NCP	%	110			70-130	Pass	
Fluoranthene	S14-No04734	NCP	%	125			70-130	Pass	
Fluorene	S14-No04734	NCP	%	127			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-No04734	NCP	%	109			70-130	Pass	
Naphthalene	S14-No04734	NCP	%	121			70-130	Pass	
Phenanthrene	S14-No04734	NCP	%	126			70-130	Pass	
Pyrene	S14-No04734	NCP	%	127			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-No01010	CP	%	84			70-130	Pass	
Cadmium	S14-No01010	CP	%	111			70-130	Pass	
Copper	S14-No01010	CP	%	121			70-130	Pass	
Mercury	S14-No01010	CP	%	110			70-130	Pass	
Nickel	S14-No01010	CP	%	82			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-No00977	CP	mg/kg	7.6	5.1	40	30%	Fail	Q15
Cadmium	S14-No00977	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-No00977	CP	mg/kg	15	12	20	30%	Pass	
Copper	S14-No00977	CP	mg/kg	18	16	15	30%	Pass	
Lead	S14-No00977	CP	mg/kg	54	43	23	30%	Pass	
Mercury	S14-No00977	CP	mg/kg	0.09	0.08	9.0	30%	Pass	
Nickel	S14-No00977	CP	mg/kg	9.6	7.3	27	30%	Pass	
Zinc	S14-No00977	CP	mg/kg	73	63	15	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
4.4'-DDD	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-No00980	CP	mg/kg	0.15	0.15	1.0	30%	Pass	
4.4'-DDT	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-No00980	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-No00980	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Chlorpyrifos	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Demeton (total)	S14-No00980	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Diazinon	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S14-No00980	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Stirophos	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloronate	S14-No00980	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-No00987	CP	mg/kg	14	22	42	30%	Fail	Q15
Cadmium	S14-No00987	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-No00987	CP	mg/kg	30	31	3.0	30%	Pass	
Copper	S14-No00987	CP	mg/kg	28	23	20	30%	Pass	
Lead	S14-No00987	CP	mg/kg	38	33	15	30%	Pass	
Mercury	S14-No00987	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-No00987	CP	mg/kg	12	15	20	30%	Pass	
Zinc	S14-No00987	CP	mg/kg	80	78	2.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-No00988	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-No00988	CP	mg/kg	0.59	0.56	5.0	30%	Pass	
4.4'-DDT	S14-No00988	CP	mg/kg	0.06	< 0.05	43	30%	Fail	Q15
a-BHC	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-No00988	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-No00988	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-No00988	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-No00997	CP	mg/kg	22	18	20	30%	Pass	
Cadmium	S14-No00997	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-No00997	CP	mg/kg	51	45	12	30%	Pass	
Copper	S14-No00997	CP	mg/kg	23	22	5.0	30%	Pass	
Lead	S14-No00997	CP	mg/kg	35	36	3.0	30%	Pass	
Mercury	S14-No00997	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-No00997	CP	mg/kg	8.0	9.6	18	30%	Pass	
Zinc	S14-No00997	CP	mg/kg	50	58	15	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Benzo(k)fluoranthene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-No04082	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-No01007	CP	mg/kg	15	16	5.0	30%	Pass	
Cadmium	S14-No01007	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-No01007	CP	mg/kg	35	35	<1	30%	Pass	
Copper	S14-No01007	CP	mg/kg	37	30	20	30%	Pass	
Lead	S14-No01007	CP	mg/kg	34	40	16	30%	Pass	
Mercury	S14-No01007	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-No01007	CP	mg/kg	7.8	11	33	30%	Fail	Q15
Zinc	S14-No01007	CP	mg/kg	57	67	17	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q09A	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference and is unquantifiable. A result of 1 has been reported for the purposes of providing a numerical result. Acceptance criteria were met for all other QC.
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details

Authorised By

Mary Makarios	Analytical Services Manager
Bob Symons	Senior Analyst-Inorganic (NSW)
Ivan Taylor	Senior Analyst-Metal (NSW)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)

Glenn Jackson

National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Geotest Services
Unit 18/24 Garling Rd
Kings Park
NSW 2148

Attention:	Dave Spasojevic
Report	437424-AID
Project Name	LOT 1 AND LOT 2 CAMDEN VALLEY WAY 7503/1
Received Date	Nov 03, 2014
Date Reported	Nov 03, 2014

Methodology:

Asbestos ID	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. Bulk samples include building materials, soils and ores.
Subsampling Soil Samples	The whole sample submitted is first dried and then sieved through a 10mm sieve followed by a 2mm sieve. All fibrous matter viz greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) Iron ores - Sampling and Sample preparation procedures is employed. Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis in accordance with AS 4964-2004.
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated and where required interfering organic fibres or matter may be removed by treating the sample for several hours at a temperature not exceeding 400 ± 30°C. The resultant material is then ground and examined in accordance with AS 4964-2004.
Limit of Reporting	The nominal detection limit of the AS4964 method is around 0.01%. The examination of large sample sizes (at least 500 ml is recommended) may improve the likelihood of identifying asbestos material in the greater than 2 mm fraction. The NEPM screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. NOTE: NATA News, September 2011 – page 34, states, “Weighing of fibres is problematic and can lead to loss of fibres and potential exposure for laboratory analysts. To request laboratories to report information which is outside the scope of AS 4964-2004 and the scope of their accreditation is misleading and is most unwise” therefore such values reported are outside the scope of Eurofins | mgt NATA accreditation as designated by an asterisk.

Project Name LOT 1 AND LOT 2 CAMDEN VALLEY WAY 7503/1
Project ID
Date Sampled Oct 30, 2014
Report 437424-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
PACM1	14-No01008	Oct 30, 2014	Approximate Sample 63x47x6mm Sample consisted of: Grey compressed fibre cement material	Chrysotile asbestos detected. Amosite asbestos detected. Crocidolite asbestos detected.
PACM3	14-No01009	Oct 30, 2014	Approximate Sample 35x28x4mm Sample consisted of: Grey compressed fibre cement material	Chrysotile asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos – LTM-ASB-8020	Sydney	Nov 03, 2014	Indefinite

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Authorised by:

Nibha Vaidya Senior Analyst-Asbestos (NSW)

Glenn Jackson
National Laboratory Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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☐ **Melbourne**
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Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GEOTEST SERVICES PTY LTD	**Contact Name :** DAVID SPASOJEVIC	**Purchase Order :**	**COC Number :**
Office Address : 18/24 GARLING ROAD	**Project Manager :** A . Halpin	**PROJECT Number :** 7503/1	**Eurofins | mgt quote ID :**
KINGS PARK, N.S.W. 2148	**Email for results :** admin@geotestservices.com.au	**PROJECT Name :** Lots 1 and 2 Camden Valley Way	**Data output format:**
PH: 9671 4443 FAX: 9671 4343			

Special Directions & Comments :

7503/1 Craig and Rhodes

Lots 1 and 2 Camden Valley Way

EDMONDSON PARK

Eurofins | mgt DI water batch number:

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Analytes

	Sample ID	Date	Matrix	8 Metals (Cr, Ni, Cu, Zn, As, Cd, Hg, Pb)	OCP	OCP / OPP	PAH	TRH / BTEX	SUITE B7	ASBESTOS	ON HOLD AT GEOTEST LAB	Containers: 1LP	250P	125P	1LA	40mL vial	125mL A	Jar	DBL.BAG	Sample comments:
1	C1-C2	30/10/14	SOIL	X	X													X		
2	C3-C4	30/10/14	SOIL	X														X		
3	C5-C6	30/10/14	SOIL	X	X													X		
4	C7-C8	30/10/14	SOIL	X		X												X		
5	C9-C10	30/10/14	SOIL	X	X													X		
6	C11-C12	30/10/14	SOIL	X	X													X		
7	C13-C14	30/10/14	SOIL	X	X													X		
8	C15-C16	30/10/14	SOIL	X	X													X		
9	C17-C18	30/10/14	SOIL	X		X												X		
10	C19-C20	30/10/14	SOIL	X	X													X		
11	C21-C22	30/10/14	SOIL	X	X													X		
12	C23-C24	30/10/14	SOIL								X							X		
13	C25-C26	30/10/14	SOIL	X	X													X		
14	C27-C28	30/10/14	SOIL								X							X		
15	C29-C30	30/10/14	SOIL	X	X													X		
16	C31-C32	30/10/14	SOIL	X		X												X		

Laboratory Staff

Relinquished By: A . HALPIN
Date & Time : 3/11/14
Signature:

Received By: Matt
Date & Time : 3/11/14 4:50
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☑ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 16

Report number: 437424

* PLEASE FORWARD "DUP1a" + "DUP2a" TO S.G.S ALEXANDRIA.

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☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
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Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
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Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GEOTEST SERVICES PTY LTD	**Contact Name :** DAVID SPASOJEVIC	**Purchase Order :**	**COC Number :**
Office Address : 18/24 GARLING ROAD	**Project Manager :** A . Halpin	**PROJECT Number :** 7503/1	**Eurofins | mgt quote ID :**
KINGS PARK, N.S.W. 2148	**Email for results :** admin@geotestservices.com.au	**PROJECT Name :** Lots 1 and 2 Camden Valley Way	**Data output format:**
PH: 9671 4443 FAX: 9671 4343			

Special Directions & Comments :

7503/1 Craig and Rhodes

Lots 1 and 2 Camden Valley Way

EDMONDSON PARK

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	8 Metals (Cr, Ni, Cu, Zn, As, Cd, Hg, Pb)	OCP	OCP / OPP	PAH	TRH / BTEX	SUITE B7	ASBESTOS	ON HOLD AT GEOTEST LAB
17	C33-C34	30/10/14	SOIL	X							
18	C35-C36	30/10/14	SOIL	X		X					
19	C37-C38	30/10/14	SOIL	X	X						
20	C39-C40	30/10/14	SOIL	X							
21	C41-C42	30/10/14	SOIL	X	X						
22	C43-C44	30/10/14	SOIL								X
23	C45-C46	30/10/14	SOIL	X		X					
24	C47-C48	30/10/14	SOIL								X
25	C49-C50	30/10/14	SOIL	X	X						
26	C51-C52	30/10/14	SOIL	X	X						
27	C53-C54	30/10/14	SOIL	X							
28	C55-C56	30/10/14	SOIL	X	X						
29	C57-C58	30/10/14	SOIL	X	X						
30	C59-C60	30/10/14	SOIL	X		X					
31	TP5 0.2-0.3	30/10/14	SOIL	X							
32	TP6 0.1-0.2	30/10/14	SOIL	X			X				

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar	DBL BAG
						X	
						X	
						X	
						X	
						X	
						X	
						X	
						X	
						X	
						X	
						X	
						X	
						X	
						X	
						X	
						X	
						X	

Sample comments:

Laboratory Staff

Relinquished By: A . HALPIN

Date & Time : 3/11/14

Signature:

Received By: Matt

Date & Time : 3/11/14 4:50

Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐

5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☑ Hand Delivered
☐ Postal

Courier Consignment # :

Temperature on arrival: 16

Report number: 437424

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Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GEOTEST SERVICES PTY LTD	**Contact Name :** DAVID SPASOJEVIC	**Purchase Order :**	**COC Number :**
Office Address : 18/24 GARLING ROAD	**Project Manager :** A . Halpin	**PROJECT Number :** 7503/1	**Eurofins | mgt quote ID :**
KINGS PARK, N.S.W. 2148	**Email for results :** admin@geotestservices.com.au	**PROJECT Name :** Lots 1 and 2 Camden Valley Way	**Data output format:**
PH: 9671 4443 FAX: 9671 4343			

Special Directions & Comments :

7503/1 Craig and Rhodes

Lots 1 and 2 Camden Valley Way

EDMONDSON PARK

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	8 Metals (Cr, Ni, Cu, Zn, As, Cd, Hg, Pb)	OCP	OCP / OPP	PAH	TRH / BTEX	SUITE B7	ASBESTOS	ON HOLD AT GEOTEST LAB
33	TP7 0.2-0.3	30/10/14	SOIL	X	X						
34	TP12 0.1-0.2	30/10/14	SOIL	X							
35	C61 0.1-0.2	30/10/14	SOIL	X		X					
36	PACM1	30/10/14	SOIL							X	
37	PACM2	30/10/14	SOIL								X
38	PACM3	30/10/14	SOIL							X	
39	PACM4	30/10/14	SOIL								X
40	DUP1	30/10/14	SOIL	X	X						
41	DUP2	30/10/14	SOIL	X		X					
42	DUP1a	30/10/14	SOIL	X	X						
43	DUP2a	30/10/14	SOIL	X	X						

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar	DBL.BAG	Sample comments:
						X		
						X		
						X		
							X	
							X	
							X	
							X	
						X		
						X		
						X		*FORWARD TO S.G.S
						X		*FORWARD TO S.G.S

Laboratory Staff

Relinquished By: A . HALPIN
Date & Time : 3/11/14
Signature:

Received By: Matt
Date & Time : 3/11/14 4:50
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☑ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 16

Report number: 437424

STATEMENT OF QA/QC PERFORMANCE

SE132917 R0

CLIENT DETAILS

Contact	Dave Spasojevic
Client	Geotest Services Pty Ltd
Address	16/11 Romford Road KINGS PARK NSW 2148
Telephone	02 9671 4443 / 0408 099 516
Facsimile	02 9671 4343
Email	admin@geotestservices.com.au
Project	**7503-1 Lots 1 and 2 Camden Valley Way**
Order Number	(Not specified)
Samples	2

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
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SGS Reference	SE132917 R0
Report Number	0000095383
Date Reported	11 Nov 2014

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS Environmental Services' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document and was supplied by the Client.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Matrix Spike	Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest	1 item

SAMPLE SUMMARY

Sample counts by matrix	2 Soils	Type of documentation received	COC
Date documentation received	4/11/2014	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	4°C
Sample container provider	Other Lab	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes	Number of eskies/boxes received	

HOLDING TIME SUMMARY

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SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS “Field Sampling Guide for Containers and Holding Time” (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUP1a	SE132917.001	LB067117	30 Oct 2014	04 Nov 2014	27 Nov 2014	10 Nov 2014	27 Nov 2014	11 Nov 2014
DUP2a	SE132917.002	LB067117	30 Oct 2014	04 Nov 2014	27 Nov 2014	10 Nov 2014	27 Nov 2014	11 Nov 2014

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUP1a	SE132917.001	LB067093	30 Oct 2014	04 Nov 2014	13 Nov 2014	10 Nov 2014	15 Nov 2014	11 Nov 2014
DUP2a	SE132917.002	LB067093	30 Oct 2014	04 Nov 2014	13 Nov 2014	10 Nov 2014	15 Nov 2014	11 Nov 2014

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUP1a	SE132917.001	LB066932	30 Oct 2014	04 Nov 2014	13 Nov 2014	06 Nov 2014	16 Dec 2014	11 Nov 2014
DUP2a	SE132917.002	LB066932	30 Oct 2014	04 Nov 2014	13 Nov 2014	06 Nov 2014	16 Dec 2014	11 Nov 2014

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUP1a	SE132917.001	LB067116	30 Oct 2014	04 Nov 2014	28 Apr 2015	10 Nov 2014	28 Apr 2015	11 Nov 2014
DUP2a	SE132917.002	LB067116	30 Oct 2014	04 Nov 2014	28 Apr 2015	10 Nov 2014	28 Apr 2015	11 Nov 2014

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil — **Method: ME-(AU)-[ENV]AN400/AN420**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	DUP1a	SE132917.001	%	60 - 130%	95
	DUP2a	SE132917.002	%	60 - 130%	101

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB067117.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB066932.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	95

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB067116.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Nickel, Ni	mg/kg	0.5	<0.5
	Zinc, Zn	mg/kg	2	<2

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE133050.003	LB067117.014	Mercury	mg/kg	0.05	0.004188119	0.007285575	200	0
SE133050.008	LB067117.020	Mercury	mg/kg	0.05	0.019945341	90.029132727	200	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE132915.001	LB067093.011	% Moisture	%w/w	0.5	9.0	9.2	41	2
SE133060.005	LB067093.022	% Moisture	%	0.5	19.00237529	695.955056179	36	17
SE133060.009	LB067093.027	% Moisture	%	0.5	14	13.14432989	69 37	6

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE132917.001	LB066932.004		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.15	30	8

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE132972.001	LB067116.011	Arsenic, As	mg/kg	1	5	5	51	10
		Cadmium, Cd	mg/kg	0.3	1.5	1.6	49	2
		Chromium, Cr	mg/kg	0.5	30	31	32	3
		Copper, Cu	mg/kg	0.5	230	250	30	6
		Lead, Pb	mg/kg	1	180	190	31	6
		Nickel, Ni	mg/kg	0.5	26	27	32	4
		Zinc, Zn	mg/kg	2	510	530	30	5

LABORATORY CONTROL SAMPLES

SE132917 R0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB067117.002	Mercury	mg/kg	0.05	0.20	0.2	70 - 130	100

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB066932.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	85
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	95
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	86
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	94
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	99
		p,p'-DDT	mg/kg	0.1	0.1	0.2	60 - 140	69
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.15	40 - 130	91

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB067116.002	Arsenic, As	mg/kg	1	47	50	80 - 120	94
	Cadmium, Cd	mg/kg	0.3	51	50	80 - 120	102
	Chromium, Cr	mg/kg	0.5	49	50	80 - 120	98
	Copper, Cu	mg/kg	0.5	48	50	80 - 120	96
	Lead, Pb	mg/kg	1	48	50	80 - 120	95
	Nickel, Ni	mg/kg	0.5	49	50	80 - 120	98
	Zinc, Zn	mg/kg	2	46	50	80 - 120	93

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE132896.001	LB067117.004	Mercury	mg/kg	0.05	0.19	0.00651043999	0.2	93

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE132896.001	LB067116.004	Arsenic, As	mg/kg	1	51	7.90470194367	50	86
		Cadmium, Cd	mg/kg	0.3	47	0.55521613865	50	92
		Chromium, Cr	mg/kg	0.5	58	16.22003818487	50	84
		Copper, Cu	mg/kg	0.5	80	37.35602464034	50	86
		Lead, Pb	mg/kg	1	53	13.29168847566	50	78
		Nickel, Ni	mg/kg	0.5	56	13.74924104683	50	85
		Zinc, Zn	mg/kg	2	100	71.55102999693	50	65 ④

MATRIX SPIKE DUPLICATES

SE132917 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here:
http://www.sgs.com.au/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

*	Non-accredited analysis.
-	Sample not analysed for this analyte.
^	Analysis performed by external laboratory.

IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.

①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to Analytical Report comments for further information.

ANALYTICAL REPORT

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Dave Spasojevic	Manager	Huong Crawford
Client	Geotest Services Pty Ltd	Laboratory	SGS Alexandria Environmental
Address	16/11 Romford Road KINGS PARK NSW 2148	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
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Project	**7503-1 Lots 1 and 2 Camden Valley Way**	SGS Reference	**SE132917 R0**
Order Number	(Not specified)	Report Number	0000095382
Samples	2	Date Reported	11 Nov 2014
Date Started	07 Nov 2014	Date Received	04 Nov 2014

COMMENTS

Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

SIGNATORIES

Dong Liang
Metals/Inorganics Team Leader

Huong Crawford
Production Manager

Ly Kim Ha
Organic Section Head

Parameter	Units	LOR	Sample Number: SE132917.001 Sample Matrix: Soil Sample Date: 30 Oct 2014 Sample Name: DUP1a	Sample Number: SE132917.002 Sample Matrix: Soil Sample Date: 30 Oct 2014 Sample Name: DUP2a
OC Pesticides in Soil Method: AN400/AN420				
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	**1.0**
Dieldrin	mg/kg	0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	**0.2**
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1
Surrogates				
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**95**	**101**
Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320				
Arsenic, As	mg/kg	1	**8**	**9**
Cadmium, Cd	mg/kg	0.3	**0.6**	**0.5**
Chromium, Cr	mg/kg	0.5	**19**	**25**
Copper, Cu	mg/kg	0.5	**9.7**	**20**
Lead, Pb	mg/kg	1	**32**	**16**
Nickel, Ni	mg/kg	0.5	**4.5**	**5.3**
Zinc, Zn	mg/kg	2	**99**	**41**
Mercury in Soil Method: AN312				
Mercury	mg/kg	0.05	<0.05	<0.05

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE132917.001 Soil 30 Oct 2014 DUP1a	SE132917.002 Soil 30 Oct 2014 DUP2a
Moisture Content Method: AN002				
% Moisture	%	0.5	**8.0**	**16**

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Mercury in Soil **Method: ME-(AU)-[ENV]AN312**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB067117	mg/kg	0.05	<0.05	0%	100%	93%

Moisture Content **Method: ME-(AU)-[ENV]AN002**

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB067093	%	0.5	6 - 17%

OC Pesticides in Soil **Method: ME-(AU)-[ENV]AN400/AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Hexachlorobenzene (HCB)	LB066932	mg/kg	0.1	<0.1	0%	NA
Alpha BHC	LB066932	mg/kg	0.1	<0.1	0%	NA
Lindane	LB066932	mg/kg	0.1	<0.1	0%	NA
Heptachlor	LB066932	mg/kg	0.1	<0.1	0%	85%
Aldrin	LB066932	mg/kg	0.1	<0.1	0%	95%
Beta BHC	LB066932	mg/kg	0.1	<0.1	0%	NA
Delta BHC	LB066932	mg/kg	0.1	<0.1	0%	86%
Heptachlor epoxide	LB066932	mg/kg	0.1	<0.1	0%	NA
o,p'-DDE	LB066932	mg/kg	0.1	<0.1	0%	NA
Alpha Endosulfan	LB066932	mg/kg	0.2	<0.2	0%	NA
Gamma Chlordane	LB066932	mg/kg	0.1	<0.1	0%	NA
Alpha Chlordane	LB066932	mg/kg	0.1	<0.1	0%	NA
trans-Nonachlor	LB066932	mg/kg	0.1	<0.1	0%	NA
p,p'-DDE	LB066932	mg/kg	0.1	<0.1	0%	NA
Dieldrin	LB066932	mg/kg	0.2	<0.2	0%	94%
Endrin	LB066932	mg/kg	0.2	<0.2	0%	99%
o,p'-DDD	LB066932	mg/kg	0.1	<0.1	0%	NA
o,p'-DDT	LB066932	mg/kg	0.1	<0.1	0%	NA
Beta Endosulfan	LB066932	mg/kg	0.2	<0.2	0%	NA
p,p'-DDD	LB066932	mg/kg	0.1	<0.1	0%	NA
p,p'-DDT	LB066932	mg/kg	0.1	<0.1	0%	69%
Endosulfan sulphate	LB066932	mg/kg	0.1	<0.1	0%	NA
Endrin Aldehyde	LB066932	mg/kg	0.1	<0.1	0%	NA
Methoxychlor	LB066932	mg/kg	0.1	<0.1	0%	NA
Endrin Ketone	LB066932	mg/kg	0.1	<0.1	0%	NA
Isodrin	LB066932	mg/kg	0.1	<0.1	0%	NA
Mirex	LB066932	mg/kg	0.1	<0.1	0%	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB066932	%	-	95%	8%	91%

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest **Method: ME-(AU)-[ENV]AN040/AN320**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB067116	mg/kg	1	<1	10%	94%	86%
Cadmium, Cd	LB067116	mg/kg	0.3	<0.3	2%	102%	92%
Chromium, Cr	LB067116	mg/kg	0.5	<0.5	3%	98%	84%
Copper, Cu	LB067116	mg/kg	0.5	<0.5	6%	96%	86%
Lead, Pb	LB067116	mg/kg	1	<1	6%	95%	78%
Nickel, Ni	LB067116	mg/kg	0.5	<0.5	4%	98%	85%
Zinc, Zn	LB067116	mg/kg	2	<2	5%	93%	65%

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analsysis by ASS or ICP as per USEPA Method 200.8.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN088	Orbital rolling for Organic pollutants are extracted from soil/sediment by transferring an appropriate mass of sample to a clear soil jar and extracting with 1:1 Dichloromethane/Acetone. Orbital Rolling method is intended for the extraction of semi-volatile organic compounds from soil/sediment samples, and is based somewhat on USEPA method 3570 (Micro Organic extraction and sample preparation). Method 3700.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN400	OC and OP Pesticides by GC-ECD: The determination of organochlorine (OC) and organophosphorus (OP) pesticides and polychlorinated biphenyls (PCBs) in soils, sludges and groundwater. (Based on USEPA methods 3510, 3550, 8140 and 8080.)
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	This analysis is not covered by the scope of accreditation.	QFH	QC result is above the upper tolerance
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
^	Performed by outside laboratory.	NVL	Not Validated

Samples analysed as received.
Solid samples expressed on a dry weight basis.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here:
http://www.sgs.com.au/~/media/Local/Australia/Documents/ Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

APPENDIX D

Site Photographs

Entrance to Site B, looking south.

Rubble to the east of the driveway at Site B, looking south.

AST and other items in to the east of the dwelling at Site B.

Site sheds at Site B.

Dwelling at Site B with PACM walls.

100 L oil drums to the south of the Site B dwelling.

ACM on ground surface in the vicinity of site sheds

Residual clay soil profile characteristic of the site and broader area

Salinity Assessment Report

Lot 1 Camden Valley Way (Lot 1 in DP 668728)
Edmondson Park NSW

Project Ref. 7503/2a

12 December 2014

Client: Okinawa Pty Ltd

Craig & Rhodes Pty Ltd

Minh Vu

PO Box 233

Epping NSW 1710

Report Approved by:

David Spasojevic

General Manager

Geotest Services

ACN: 089 302 009

18/24 Garling Road, Kings Park NSW 2148

Tel: (02) 9671 4443 Fax: (02) 9671 4343

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APPENDICES

1 INTRODUCTION

This report presents the results of a soil salinity assessment for a single parcel of land at 2108 Camden Valley Way, Edmondson Park. Throughout this assessment the site has been referred to as Lot 1 Camden Valley Way. Mr. Minh Vu of Craig & Rhodes Pty Ltd commissioned the assessment to address the development and planning requirements for the proposed low density residential subdivision at the site.

It is understood that the site is proposed for residential subdivision development, incorporating residential allotments, public roads and associated infrastructure. It is expected that an experienced earthworks contractor with knowledge of the soils in western Sydney will be engaged to undertake any earthmoving that may be required.

The salinity assessment was carried out with reference to the following Department of Infrastructure Planning and Natural Resources (DIPNR) publications.

- Salinity Potential Map - 2002
- Site Investigations for Urban Salinity – 2002
- Building in a Saline Environment – 2003
- Indicators of Urbane Salinity – 2002
- Piling – Design and Installation AS 2159 – 2009

2 SITE DESCRIPTION AND REGIONAL GEOLOGY

The site is comprised of the following registered lot –

- Lot 1 in DP 668728 (2108 Camden Valley Way, Edmondson Park)

The site has a street frontage to Camden Valley Way, a major arterial road. The lot is generally rectangular in shape and occupies an area of approximately 4.0 ha. The site is in rolling countryside where residential development is ongoing.

The 1:100,000 Penrith Geological Series Sheet 9030 (Geological Survey of New South Wales, Edition 1, 1991) indicates that the Site locality is underlain by Middle Triassic Wianamatta Group Bringelly Shale. The lithology is described as shale, carbonaceous claystone, claystone, laminating, fine to medium-grained lithic sandstone, rare coal and tuff.

The 1:100,000 Penrith Soil Landscape Series Sheet 9030 (Soil Conservation Service of NSW, 1989) indicates that the Site is located on the Blacktown Group soils. The Blacktown soil groups are described as shallow to moderately deep (<100cm) hardsetting mottled texture contrast soils, red and brown podzolic soils (Dr3.21, Dr3.31, Db2.11, Db2.21) on crests grading to yellow podzolic soils on lower slopes and in drainage lines. The limitations associated with this soil landscape are moderately reactive highly plastic subsoil, low soil fertility and poor soil drainage.

2.1 Sub-surface Conditions

Reference should be made to the engineering logs (Appendix A) for detailed sub surface conditions. A summary of the generalised profile is as follows:-

Topsoil	Sandy Silt / Silty Clay, brown
Residual	Silty Clays and Shaley Clays, red to brown, and grey (respectively)
Bedrock	Shale, distinctly weathered, grey

Groundwater was not observed in the test pits during the short time that they remained open. It must be noted however, that fluctuations in the level of ground water may occur due to variations in rainfall, temperature and/or other factors.

3 SITE WORKS

Field work for the assessment was carried out on the 30th October 2014, under the full time supervision of a member of our engineering staff and environmental consultant and consisted of walk over inspections of the site to see if any effects of salinity could be observed and the excavation of two test pits for sample recovery.

The locations of the test pits, which are indicated on Drawing No 7503/2-1 in Appendix A of this report, were obtained by taking measurements relative to on site in situ site features.

A summary of the field data obtained is presented in Appendix A.

3.1 Regional Hydrogeology

A search for registered groundwater bores within a 500m radius of the site was conducted using the NSW Natural Resources Atlas (http://www.nratlas.nsw.gov.au). No registered bore holes were located within 500 m of the site thus no further information on groundwater at the site can be concluded.

3.2 Acid Sulfate Soils

The NSW Department of Land and Water Conservation (1997) Liverpool Acid Sulfate Soil Risk Map (Edition 2) indicates that the Site is located in an area of no known occurrence of acid sulfate soil (ASS) materials and that land management activities are not likely to be affected by ASS materials.

4 LABORATORY ANALYSIS

During the course of the investigations various samples were taken from each of the test pits at appropriate depths and tested for pH, electrical conductivity and Emerson class number. Subsequently one sample was sent to Sydney Environmental and Soils Laboratory to determine the soils aggressivity towards concrete and steel. The results of the pH, electrical conductivity, and Emerson class number may be found in Appendix B. The aggressivity results may be found in Appendix C.

5 SALINITY ASSESSMENT

5.1 Salinity Potential

The 1:100000 Salinity Potential in Western Sydney Sheet shows the site in a zone of moderate salinity potential because it is possibly underlain by Wianamatta Shale. During the walk over of the site and the adjacent properties there were no salinity indicators found to be present. No signs of salt found on the adjoining dwellings, no distressed brick, mortar or concrete. No corroding metal pipes. No bare patches of soil showing scalding. Vegetation appeared normal for this part of Sydney with no indications of salinity affected trees. No salt tolerant vegetation was noted on the site.

5.2 Salinity Results

Nine samples were recovered from the site for the testing of; pH, electrical conductivity and Emerson class number.

The fundamental criteria for assessing soil salinity are based on electrical conductivity –

Class	EC_{e} (ds/m)	Comments
Non Saline	<2	Salinity effects negligible
Slightly Saline	2-4	Yields of very sensitive crops may be affected
Moderately Saline	4-8	Yields of many crops affected
Very Saline	8-16	Only tolerant crops yields satisfactorily
Highly Saline	>16	Few crops yield satisfactorily

Salinity Class for the soils on this site were found to be Non Saline to Highly Saline.

Soil salinity is a function of soil stability. Other parameters may be used to assess saline soil. The Emerson crumb test measures a soils dispersibility in water. The following is a measure of soil dispersion –

Emerson Class Number	Dispersibility
1	Very High
2	High
3	Moderate
4&5	Slight
6,7,8	Negligible

Emerson class indicates that over most of the site the soils are slightly to non dispersive (negligible). Sodic soils are normal for this part of Sydney however sodicity is not expected to be an issue on this site.

Importantly on a construction site soils may show aggressivity towards steel and concrete, particularly if the steel or concrete are in direct contact with the soil. The following is a measure of soil aggressivity based on AS 2159 2009 "Piling – Design and Installation"

Concrete Foundations#	
pH	Classification
>5	Non-aggressive
4.5-5	Mild
4.0-4.5	Moderate
<4.0	Severe

Steel Structures	
pH	Classification
>4	Non-aggressive
3-4	Mild
<3	Moderate

Where there is running water the rating should be moved up at least one level due to the increased risk of erosion

- PH test results ranged from 4.9 – 7.6.

According to AS2159-2009 the pH is considered mildly to non aggressive towards concrete and non-aggressive towards steel from all samples tested. Refer to Australian Standard AS2159-2009 "Piling- Design and Installation" and for guidelines on protection of buried steel and concrete structures.

Concrete Foundations#	
Sulfate (SO_4)	Classification
<6250	Non-aggressive
6250-12,500	Mild
12,500-25,000	Moderate
>25,000	Severe

Steel Structures	
Chloride	Classification
<20,000	Non-aggressive
20,000-50,000	Mild
>50,000	Moderate

Where there is running water the rating should be moved up at least one level due to the increased risk of erosion.

According to AS2159-2009 the chloride and sulphate levels are considered non aggressive to concrete and non corrosive towards steel from all samples tested.

Resistivity results indicate the soils to be moderately aggressive towards unprotected steel.

6 DISCUSSION AND MANGEMENT PLAN

Salinity management on the site during construction will depend on the final earthworks design and the volume of cut and fill works required on the site. We have identified an area of highly saline soil at Test Pit S1 , this sample was taken in a depressed area of the site and may not be representative of a larger area. We would recommend further investigation and testing to delineate the area of highly saline soil on this site. Options for managing non saline to highly saline soils on this site include the following

- Develop the best use of existing topography to minimise cut and fill operations.
- Maintenance and improvement of native vegetation along drainage courses.
- Water management of landscaped areas
- Utilise native and deep rooted plants in order to minimise soil erosion
- Minimise exposure of highly saline soils in temporary excavation faces
- Minimise exposure of highly saline soils in stockpiles during site works
- Minimise potential for ponding or water logging areas on the site

- Provision of lining in temporary ponds with non saline clays to minimise groundwater recharge through the soils
- Dispose of excavated highly saline salts to locations where salts cannot be leached to the environment.
- Natural drainage patterns to be maintained where possible.
- Drainage infrastructure in vulnerable areas to be installed as soon as practical to avoid excessive water infiltration, ponding of water on site and salt leaching.
- Imported material should be tested for salinity to avoid importing saline soils
- Roads should have well designed sub soil drainage.
- In fill areas place the more saline soils at the deepest levels.
- Application of gypsum to areas of exposed moderately saline soils if applicable.
- Concrete of suitable strength and reinforcement cover is to be used for drainage structures and wherever contact with water and increased soil moisture is expected.
- Pipes used for stormwater drainage should be sealed to minimise the risk of leakage.
- Roads must have well designed sub surface drainage.
- Soils that are excavated from either roads or service trenches throughout areas or the site found to be highly saline should be re-instated at the same horizontal level or lower where possible.
- Conduct a comprehensive post-earthworks salinity assessment to determine the final salinity status of each individual lot.

These and other techniques may be used by construction management teams to minimise the effects of salinity on this site.

Constructors and house builders should follow all relevant Australian Standards and should also be made aware of the Cement Concrete & Aggregates Australia publication “Guide to Residential Slabs and Footings in Saline Environments”.

Providing the management practices outlined in this report are followed during the construction period the proposed development of this site is unlikely to have any significant impact on the existing salinity on this site or on any downstream sites.

7 CLOSING

If you have any further questions regarding this matter please don’t hesitate to call me.

Yours Faithfully

D. Spasojevic

Geotest Services Pty Ltd

APPENDIX A

Engineering Logs

P7503/2a
Craig and Rhodes
Camden Valley Way
Edmondson Park

TP01 S1			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.5		Silty CLAY, (CH), brown grey, dry to moist, firm	
0.5-0.8		Silty CLAY (CH), grey red, dry, firm	
0.8-1.3		Silty CLAY (CH), brown orange grey, dry firm	
1.3-1.5		Shaley CLAY (GC), grey brown, dry, firm	
Test Pit Terminated @ 1.5m bgl			

TP02 S2			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-1.0		Silty CLAY, (CH), red grey, dry to moist, firm	
1.0-1.2		Shaley CLAY (GC), grey brown, dry, firm	
1.2-1.3		SHALE, weak, distinctly weathered, grey, hard	
Test Pit Terminated @ 1.3m bgl			

Geotest Services Pty Ltd	**Craig and Rhodes** **Camden Valley Way** **Edmondson Park** **Sample Location Plan**	LEGEND Test Pit Location • Drawn By: AH Approved: DS	Job No: 7503/2 Drawing No: 7503/2-1 Ref No: Scale: N.T.S.

APPENDIX B

Emerson pH ec Details

GEOTEST SERVICES Pty Ltd

7503/2a Craig & Rhodes Camden Valley Way Edmondson Park

Location	Depth (m)	Description	pH	EC (µS/m)	EC (Factor)	Ece (dS/m)	Emerson Number	Salinity Class
1	0.1	Sandy Silt / Silty Clay, brown	7.6	845	9.5	8.03	7	Moderately Saline
1	0.4	Silty Clay, red brown, traces of gravel	6.3	2060	7.0	14.42	7	Very Saline
1	0.7	Silty Clay, red brown, traces of gravel	5.6	3430	7.0	24.01		Highly Saline
1	1.0	Silty Clay, grey brown	6.0	3300	7.0	23.10		Highly Saline
1	1.3	Silty Clay, grey brown	6.7	1984	7.0	13.89		Very Saline
Location	**Depth (m)**	**Description**	**pH**	**EC (µS/m)**	**EC (Factor)**	**Ece (dS/m)**	**Emerson Number**	**Salinity Class**
2	0.1	Sandy Silt / Silty Clay, brown	6.7	123	9.5	1.17	8	Non Saline
2	0.4	Silty Clay, red brown grey	5.1	317	7.0	2.22		Slightly Saline
2	0.7	Silty Clay, red brown grey	4.9	497	7.0	3.48		Slightly Saline
2	1.0	Shaley Clay, red brown grey	5.0	379	7.0	2.65	4	Slightly Saline

APPENDIX C

Aggressivity Analytical Data

Corrosion & Scaling Assessment:
Soil Reporting Profile

SESL AUSTRALIA
Environment & Soil Sciences

Sample Drop Off: 16 Chilvers Road, Thornleigh NSW 2120
Mailing Address: PO Box 357, Pennant Hills NSW 1715
Tel: 1300 30 40 80
Fax: 1300 64 46 89
Em: info@sesl.com.au
Web: www.sesl.com.au

Batch N°: 32512 **Sample N°: 1** **Date Received: 4/11/14** **Report Status:** ○ Draft ◉ Final

Client Name:	**Geotest Services Pty Ltd**	Project Name:	**REF: 7503/2 - C&R Lots 1 & 2 Camden Valley Way, Edmondson**
Client Contact:	**David Spasojevic**	SESL Quote N°:	
Client Job N°:		Sample Name:	**7503/2-S1 TP1 (0.5-0.9m)**
Client Order N°:		Description:	**Soil**
Address:	**Unit 18/24 Garling Road KINGS PARK NSW 2148**	Test Type:	**CSCSS**

TEST	RESULT	COMMENTS
pH in water (1:5)	6.2	Slight Acidity
EC mS/cm (1:5)	2.54	Extreme Salinity
Texture Class	Light Clay	
Soil Permeability Class		Low
SOLUBLE ANION ANALYSIS		
Sulphate (1:5) mgSO_4 / kg	1920	Low (non-aggressive)
Chloride (1:5) mgCl / kg	3590	Low (non-aggressive)
* Resistivity Ω. m	1.57	Low (moderately-aggressive)

* Resistivity tested on a saturated sample/paste

(Note:- 10,000 mg/kg = 1%)

Recommendations

For the purposes of this corrosion and scaling assessment of soils towards concrete structures with steel reinforcement, concrete and steel piles, this soil shows slight acidity, extreme salinity, low sulphate and low chloride and low resistivity.

According to Australian Standard (AS) 2159-2009, the pH is considered to be non-aggressive towards concrete and non-aggressive towards steel. The sulphate levels are considered to be non-aggressive towards concrete. The chloride levels are considered to be non-aggressive towards steel. The resistivity is considered to be moderately-aggressive towards steel.

Factors affecting concrete scaling are: (a) elevated sulphate, becoming mildly aggressive at >2400mg/kg SO_4; and (b) low pH, becoming mildly aggressive at pH of <5-6.

Factors affecting steel corrosivity are: (a) elevated chloride, becoming mildly aggressive at >5,000mg/kg Cl; and (b) low pH, becoming mildly aggressive at pH of <4-5 and (c) low resistivity, becoming mildly aggressive with resistivity values less than 50Ω.m.

Overall, according AS2159:2009 the likelihood of aggressive corrosion is moderate.

pH, EC, Soluble SO_4: Bradley et al., (1983); **Cl,** (4500-Cl- E; APHA, 1998);
Resistivity, AS1289.4.4.1:1997, **Texture** - PM0003 (Texture- "Northcote" (1992))

Date Report Generated
7/11/2014

Consultant:
Andrew Jacovides

Authorised Signatory:
Kelly Lee

Salinity Assessment Report

Lot 1 Camden Valley Way (Lot 1 in DP 661031)
Edmondson Park NSW

Project Ref. 7503/2b

12 December 2014

Client:**Okinawa Pty Ltd**

Craig & Rhodes Pty Ltd

Minh Vu

PO Box 233

Epping NSW 1710

Report Approved by:

David Spasojevic

General Manager

Geotest Services

ACN: 089 302 009

18/24 Garling Road, Kings Park NSW 2148

Tel: (02) 9671 4443 Fax: (02) 9671 4343

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It is understood that the site is proposed for residential subdivision development, incorporating residential allotments, public roads and associated infrastructure. It is expected that an experienced earthworks contractor with knowledge of the soils in western Sydney will be engaged to undertake any earthmoving that may be required.

The salinity assessment was carried out with reference to the following Department of Infrastructure Planning and Natural Resources (DIPNR) publications.

- Salinity Potential Map - 2002
- Site Investigations for Urban Salinity – 2002
- Building in a Saline Environment – 2003
- Indicators of Urbane Salinity – 2002
- Piling – Design and Installation AS 2159 – 2009

2 SITE DESCRIPTION AND REGIONAL GEOLOGY

The site is comprised of the following registered lot –

- Lot 1 in DP 661031 (2108 Camden Valley Way, Edmondson Park)

The site has a street frontage to Camden Valley Way, a major arterial road. The lot is generally rectangular in shape and occupies an area of approximately 4.0 ha. The site is in rolling countryside where residential development is ongoing.

The 1:100,000 Penrith Geological Series Sheet 9030 (Geological Survey of New South Wales, Edition 1, 1991) indicates that the Site locality is underlain by Middle Triassic Wianamatta Group Bringelly Shale. The lithology is described as shale, carbonaceous claystone, claystone, laminating, fine to medium-grained lithic sandstone, rare coal and tuff.

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2.1 Sub-surface Conditions

Reference should be made to the engineering logs (Appendix A) for detailed sub surface conditions. A summary of the generalised profile is as follows:-

Topsoil	Sandy Silt / Silty Clay, brown
Residual	Silty Clays and Shaley Clays, red to brown, and grey (respectively)
Bedrock	Shale, distinctly weathered, grey

Groundwater was not observed in the test pits during the short time that they remained open. It must be noted however, that fluctuations in the level of ground water may occur due to variations in rainfall, temperature and/or other factors.

3 SITE WORKS

Field work for the assessment was carried out on the 30th October 2014, under the full time supervision of a member of our engineering staff and environmental consultant and consisted of walk over inspections of the site to see if any effects of salinity could be observed and the excavation of two test pits for sample recovery.

The locations of the test pits, which are indicated on Drawing No 7503/2-1 in Appendix A of this report, were obtained by taking measurements relative to on site in situ site features.

A summary of the field data obtained is presented in Appendix A.

3.1 Regional Hydrogeology

A search for registered groundwater bores within a 500m radius of the site was conducted using the NSW Natural Resources Atlas (http://www.nratlas.nsw.gov.au). No registered bore holes were located within 500 m of the site thus no further information on groundwater at the site can be concluded.

3.2 Acid Sulfate Soils

The NSW Department of Land and Water Conservation (1997) Liverpool Acid Sulfate Soil Risk Map (Edition 2) indicates that the Site is located in an area of no known occurrence of acid sulfate soil (ASS) materials and that land management activities are not likely to be affected by ASS materials.

4 LABORATORY ANALYSIS

During the course of the investigations various samples were taken from each of the test pits at appropriate depths and tested for pH, electrical conductivity and Emerson class number. Subsequently one sample was sent to Sydney Environmental and Soils Laboratory to determine the soils aggressivity towards concrete and steel. The results of the pH, electrical conductivity, and Emerson class number may be found in Appendix B. The aggressivity results may be found in Appendix C.

5 SALINITY ASSESSMENT

5.1 Salinity Potential

The 1:100000 Salinity Potential in Western Sydney Sheet shows the site in a zone of moderate salinity potential because it is possibly underlain by Wianamatta Shale. During the walk over of the site and the adjacent properties there were no salinity indicators found to be present. No signs of salt found on the adjoining dwellings, no distressed brick, mortar or concrete. No corroding metal pipes. No bare patches of soil showing scalding. Vegetation appeared normal for this part of Sydney with no indications of salinity affected trees. No salt tolerant vegetation was noted on the site.

5.2 Salinity Results

Nine samples were recovered from the site for the testing of; pH, electrical conductivity and Emerson class number.

The fundamental criteria for assessing soil salinity are based on electrical conductivity –

Class	EC_{e} (ds/m)	Comments
Non Saline	<2	Salinity effects negligible
Slightly Saline	2-4	Yields of very sensitive crops may be affected
Moderately Saline	4-8	Yields of many crops affected
Very Saline	8-16	Only tolerant crops yields satisfactorily
Highly Saline	>16	Few crops yield satisfactorily

Salinity Class for the soils on this site were found to be Non Saline to Moderately Saline.

Soil salinity is a function of soil stability. Other parameters may be used to assess saline soil. The Emerson crumb test measures a soils dispersibility in water. The following is a measure of soil dispersion –

Emerson Class Number	Dispersibility
1	Very High
2	High
3	Moderate
4&5	Slight
6,7,8	Negligible

Emerson class indicates that over most of the site the soils are slightly to non dispersive (negligible). Sodic soils are normal for this part of Sydney however sodicity is not expected to be an issue on this site.

Importantly on a construction site soils may show aggressivity towards steel and concrete, particularly if the steel or concrete are in direct contact with the soil. The following is a measure of soil aggressivity based on AS 2159 2009 "Piling – Design and Installation"

Concrete Foundations#	
pH	Classification
>5	Non-aggressive
4.5-5	Mild
4.0-4.5	Moderate
<4.0	Severe

Steel Structures	
pH	Classification
>4	Non-aggressive
3-4	Mild
<3	Moderate

Where there is running water the rating should be moved up at least one level due to the increased risk of erosion

- PH test results ranged from 4.8 – 6.7.

According to AS2159-2009 the pH is considered mildly to non aggressive towards concrete and non-aggressive towards steel from all samples tested. Refer to Australian Standard AS2159-2009 "Piling- Design and Installation" and for guidelines on protection of buried steel and concrete structures.

Concrete Foundations#	
Sulfate (SO_4)	Classification
<6250	Non-aggressive
6250-12,500	Mild
12,500-25,000	Moderate
>25,000	Severe

Steel Structures	
Chloride	Classification
<20,000	Non-aggressive
20,000-50,000	Mild
>50,000	Moderate

Where there is running water the rating should be moved up at least one level due to the increased risk of erosion.

According to AS2159-2009 the chloride and sulphate levels are considered non aggressive to concrete and non corrosive towards steel from all samples tested.

Resistivity results indicate the soils to be moderately aggressive towards unprotected steel.

6 DISCUSSION AND MANGEMENT PLAN

Salinity management on the site during construction will depend on the final earthworks design and the volume of cut and fill works required on the site. Options for managing non saline to moderately saline soils on this site include the following

- Develop the best use of existing topography to minimise cut and fill operations.
- Maintenance and improvement of native vegetation along drainage courses.
- Water management of landscaped areas
- Utilise native and deep rooted plants in order to minimise soil erosion
- Minimise exposure of moderately saline soils in temporary excavation faces
- Minimise exposure of moderately saline soils in stockpiles during site works
- Minimise potential for ponding or water logging areas on the site
- Provision of lining in temporary ponds with non saline clays to minimise groundwater recharge through the soils
- Dispose of excavated moderately saline salts to locations where salts cannot be leached to the environment.

- Natural drainage patterns to be maintained where possible.
- Drainage infrastructure in vulnerable areas to be installed as soon as practical to avoid excessive water infiltration, ponding of water on site and salt leaching.
- Imported material should be tested for salinity to avoid importing saline soils
- Roads should have well designed sub soil drainage.
- In fill areas place the more saline soils at the deepest levels.
- Application of gypsum to areas of exposed moderately saline soils if applicable.
- Concrete of suitable strength and reinforcement cover is to be used for drainage structures and wherever contact with water and increased soil moisture is expected.
- Pipes used for stormwater drainage should be sealed to minimise the risk of leakage.
- Roads must have well designed sub surface drainage.
- Soils that are excavated from either roads or service trenches throughout areas or the site found to be highly saline should be re-instated at the same horizontal level or lower where possible.
- Conduct a comprehensive post-earthworks salinity assessment to determine the final salinity status of each individual lot.

These and other techniques may be used by construction management teams to minimise the effects of salinity on this site.

Constructors and house builders should follow all relevant Australian Standards and should also be made aware of the Cement Concrete & Aggregates Australia publication “Guide to Residential Slabs and Footings in Saline Environments”.

Providing the management practices outlined in this report are followed during the construction period the proposed development of this site is unlikely to have any significant impact on the existing salinity on this site or on any downstream sites.

7 CLOSING

If you have any further questions regarding this matter please don’t hesitate to call me.

Yours Faithfully

D. Spasojevic

Geotest Services Pty Ltd

APPENDIX A

Engineering Logs

P7503/2b
Craig and Rhodes
Camden Valley Way
Edmondson Park

TP03 S3			
Depth (m)	Sample	Description	Additional Observations
0.0-0.3		FILL: Silty Clay, brown, dry firm	
0.3-0.5		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.5-1.6		Silty CLAY, (CH), red brown, dry to moist, firm	
1.6-1.7		Shaley CLAY (GC), grey brown, dry, firm	
1.7-1.8		SHALE, weak, distinctly weathered, grey, hard	
Test Pit Terminated @ 1.8m bgl			

TP04 S4			
Depth (m)	Sample	Description	Additional Observations
0.0-0.2		Topsoil: Sandy Silty CLAY; low plasticity, brown to dark brown, dry, soft	
0.2-0.4		Silty CLAY, (CH), red, dry to moist, firm	
0.4-1.1		Shaley CLAY (GC), grey, dry, firm	
1.1-1.2		SHALE, weak, distinctly weathered, grey, hard	
Test Pit Terminated @ 1.2m bgl			

Geotest Services Pty Ltd	**Craig and Rhodes** **Camden Valley Way** **Edmondson Park** **Sample Location Plan**	LEGEND Test Pit Location • Drawn By: AH Approved: DS	Job No: 7503/2 Drawing No: 7503/2-2 Ref No: Scale: N.T.S.

APPENDIX B

Emerson pH ec Details

GEOTEST SERVICES Pty Ltd

7503/2b Craig & Rhodes Camden Valley Way Edmondson Park

Location	Depth (m)	Description	pH	EC (µS/m)	EC (Factor)	Ece (dS/m)	Emerson Number	Salinity Class
S3	0.1	Sandy silt / Silty Clay, brown	5.8	538	9.5	5.11	4	Moderately Saline
S3	0.4	Silty Clay, brown traces of gravel	6.7	206	7.0	1.44		Non Saline
S3	0.7	Silty Clay, brown	5.4	274	7.0	1.92		Non Saline
S3	1.0	Silty Clay, red brown	4.8	270	7.0	1.89		Non Saline
S3	1.3	Silty Clay, grey red brown	5.2	136	7.0	0.95	4	Non Saline
Location	**Depth (m)**	**Description**	**pH**	**EC (µS/m)**	**EC (Factor)**	**Ece (dS/m)**	**Emerson Number**	**Salinity Class**
S4	0.1	Sandy silt / Silty Clay, brown	6.3	122	9.5	1.16		Non Saline
S4	0.4	Silty Clay, red brown grey	4.8	111	7.0	0.78	7	Non Saline
S4	0.7	Shaley Clay, grey	5.3	123	7.0	0.86	4	Non Saline
S4	1.0	Shaley Clay, grey	4.9	193	7.0	1.35		Non Saline

APPENDIX C

Aggressivity Analytical Data

SESL AUSTRALIA
Environment & Soil Sciences

Corrosion & Scaling Assessment:
Soil Reporting Profile

Sample Drop Off: 16 Chilvers Road, Thornleigh NSW 2120
Mailing Address: PO Box 357, Pennant Hills NSW 1715
Tel: 1300 30 40 80
Fax: 1300 64 46 89
Em: info@sesl.com.au
Web: www.sesl.com.au

Batch N°: 32512 **Sample N°: 2** **Date Received: 4/11/14** **Report Status:** ○ Draft ◉ Final

Client Name:	**Geotest Services Pty Ltd**	Project Name:	**REF: 7503/2 - C&R Lots 1 & 2 Camden Valley Way, Edmondson**
Client Contact:	**David Spasojevic**	SESL Quote N°:	
Client Job N°:		Sample Name:	**7503/2-S4 TP4 (0.5-0.9m)**
Client Order N°:		Description:	**Soil**
Address:	**Unit 18/24 Garling Road KINGS PARK NSW 2148**	Test Type:	**CSCSS**

TEST	RESULT	COMMENTS
pH in water (1:5)	5.7	Medium Acidity
EC mS/cm (1:5)	0.06	Low Salinity
Texture Class	Silty Clay	
Soil Permeability Class		Low
SOLUBLE ANION ANALYSIS		
Sulphate (1:5) mgSO_4 / kg	80	Low (non-aggressive)
Chloride (1:5) mgCl / kg	130	Low (non-aggressive)
* Resistivity Ω. m	23.37	Moderate (non-aggressive)

* Resistivity tested on a saturated sample/paste

(Note:- 10,000 mg/kg = 1%)

Recommendations

For the purposes of this corrosion and scaling assessment of soils towards concrete structures with steel reinforcement, concrete and steel piles, this soil shows medium acidity, low salinity, low sulphate, low chloride and moderate resistivity.

According to Australian Standard (AS) 2159-2009, the pH is considered to be non-aggressive towards concrete and non-aggressive towards steel. The sulphate levels are considered to be non-aggressive towards concrete. The chloride levels are considered to be non-aggressive towards steel. The resistivity is considered to be non-aggressive towards steel.

Factors affecting concrete scaling are: (a) elevated sulphate, becoming mildly aggressive at >2400mg/kg SO_4; and (b) low pH, becoming mildly aggressive at pH of <5-6.

Factors affecting steel corrosivity are: (a) elevated chloride, becoming mildly aggressive at >5,000mg/kg Cl; and (b) low pH, becoming mildly aggressive at pH of <4-5 and (c) low resistivity, becoming mildly aggressive with resistivity values less than 50Ω.m.

Overall, according AS2159:2009 the likelihood of aggressive corrosion is low.

pH, EC, Soluble SO_4: Bradley et al., (1983); **Cl,** (4500-Cl- E; APHA, 1998);
Resistivity, AS1289.4.4.1:1997, **Texture** - PM0003 (Texture- "Northcote" (1992))

Date Report Generated
7/11/2014

Consultant:
Andrew Jacovides

Authorised Signatory:
Kelly Lee