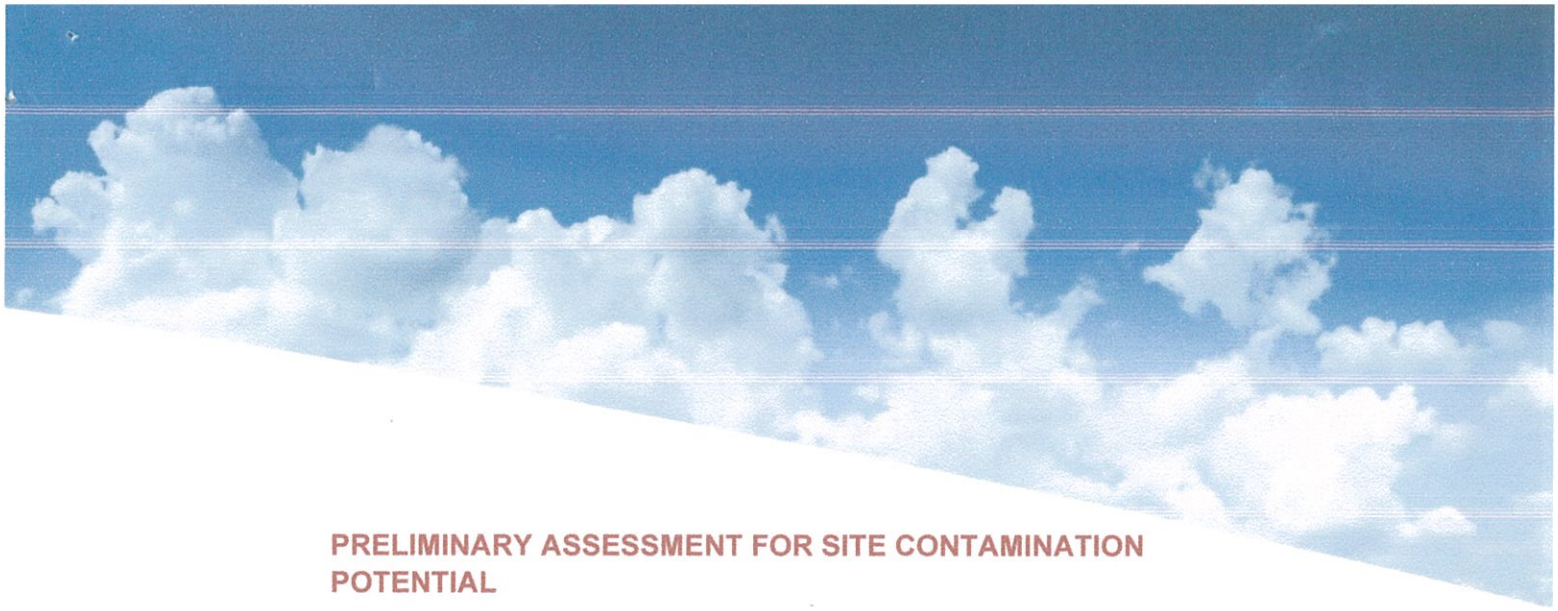


PRELIMINARY ASSESSMENT FOR SITE CONTAMINATION POTENTIAL

Proposed Subdivision – Middlebrook Road, Scone NSW

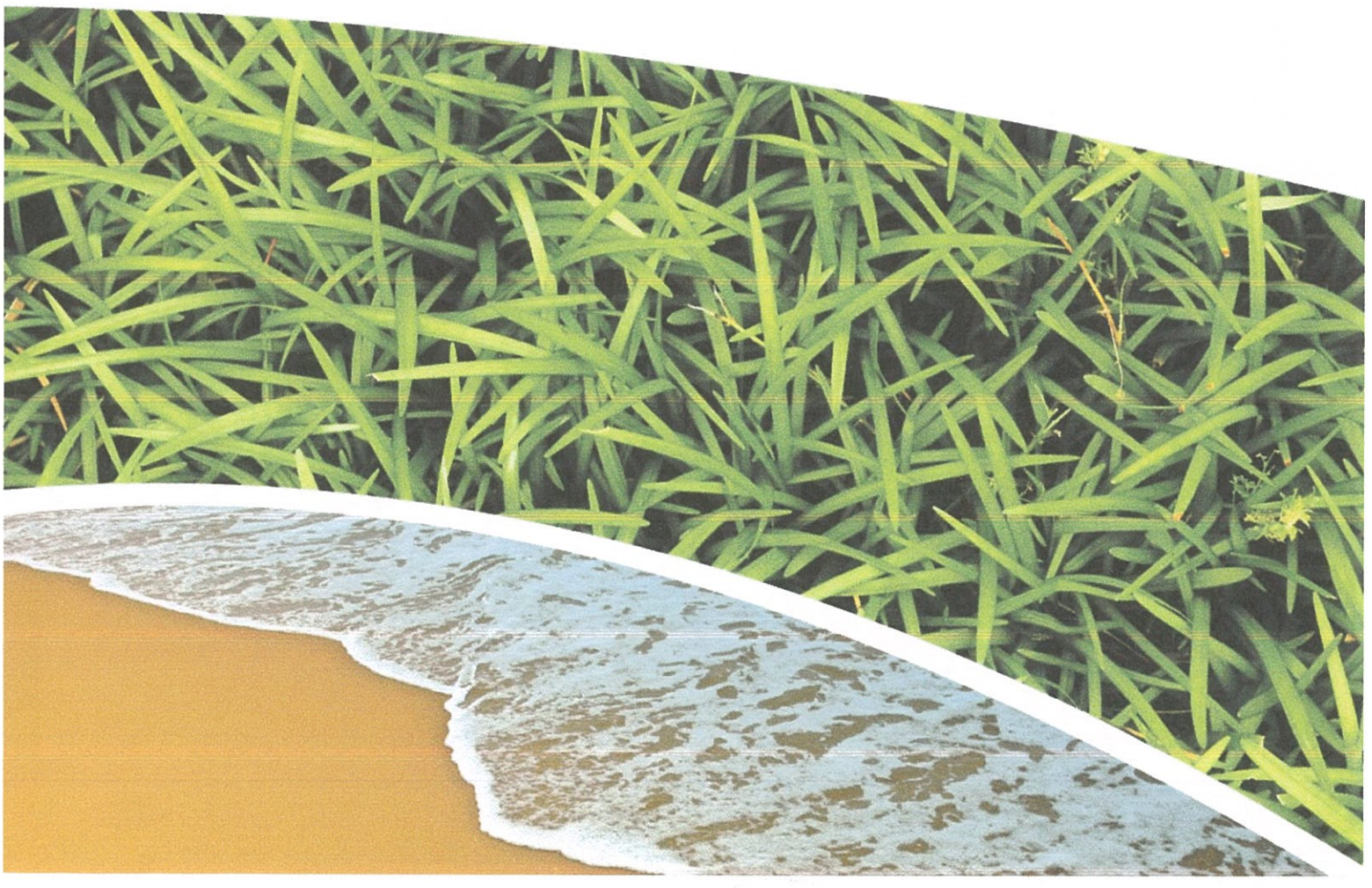
Prepared for Shayne Clarke

Prepared by RCA Australia

RCA ref 9523-701/1

April 2013

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL



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Contents

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Engineering Geology
Environmental Engineering
Hydrogeology
Construction Materials Testing
Environmental Monitoring
Noise & Vibration
Occupational Hygiene

15 April 2013

Mr Shayne Clarke
C/- MM Hyndes Bailey & Co
PO Box 106
SCONE NSW 2337

Attention: David Casson

PRELIMINARY AND LIMITED SITE CONTAMINATION ASSESSMENT
PROPOSED SUBDIVISION – MIDDLEBROOK ROAD, SCONE NSW

1 INTRODUCTION AND BACKGROUND

RCA Australia (RCA) was commissioned by Shayne Clarke to conduct a preliminary and limited site contamination assessment for land within a private property located in Scone NSW, identified as Lot 52 in DP 750941.

Throughout this report, this land is known as "the property". A location plan, and plan of the Land are shown in **Appendix A** attached.

It is understood that the owner of the property intends to subdivide this property for residential purposes. The property is approximately 37 ha in size.

This assessment follows a requirement from the NSW Department of Planning (as provided to RCA by MM Hyndes Bailey & Co):

> "Council is to demonstrate that the planning proposal satisfies the requirements of State Environmental Planning Policy No. 55 (SEPP55) – Remediation of Land and the *Contaminated Land Planning Guidelines*. Council is to prepare an initial site contamination investigation to demonstrate that the site is suitable for rezoning to the proposed zone. This report is to be included as part of the public exhibition material."

This report presents the findings of a preliminary and limited assessment to identify the potential for contamination at the site described above.

2 SITE HISTORY

RCA obtained the following verbal information from the owner of the property (Mr Shayne Clarke). RCA understands that the property had only been used for grazing and holding areas for animals (eg by cattle); and the growing of some lucerne. Some weed spraying had been carried out recently at the property due to the prevalence of weeds in some areas of this property; and the most recent spraying was carried out in early 2013. The current owner bought the property in 1989. No fill material had been imported to the site by the current owners. The current owner also stated that the property had also been used by the NSW Police Force in the early 1900's (ie before the purchase of this property by the current owners), to hold and graze horses.

3 FIELDWORK AND METHODOLOGY

A senior environmental engineer experienced in carrying out site contamination assessments undertook the fieldwork on 26 March 2013. The scope of work included:

- a site inspection including the recording of observations and taking of photographs; and
- visual and odour observations regarding potential contamination at the property.

In addition, RCA was prepared for the collection of soil samples for the analysis of potential contamination. The collection of soil samples was considered necessary in an isolated and central section of the site, given the recent spraying of weeds in that area (refer to **Appendix B**, **Photographs 6**, **7 and 8**).

RCA collected three (3) shallow soil samples (all at 0.3m depth) from this area of the property; and in accordance with RCA's soil sampling methodology. The samples were also taken in a grid pattern and approximately 10m apart, and in positions where it was observed weed spraying had taken place.

Soil samples below the surface were recovered using a hand auger within this area. The general locations of these soil samples are shown **Appendix B**, **Photograph 9**. The samples were retained for the analyses as described above. An example of one of the samples taken is shown in **Photograph 9**.

All soil sample collection was undertaken in compliance with RCA methodology. Soil sample collection methods comprised:

- disturbed samples direct from the auger;
- brushing of excess soil material from the auger, followed by water cleaning of the auger between sample locations; and
- samples were immediately contained within individually and labelled glass sample jars, and within an esky, for transport to the laboratory.
- All samples were preserved as recommended by the analytical laboratory and stored in the field in an Esky on ice. Samples were sent to the laboratory within 24 hours of sampling.

All samples were sent under Chain of Custody (COC) documentation detailing the sample identification, required analysis, the name of the sampler and date released from custody. The laboratory acknowledged the receipt of samples by signature and date and returned the COC with a sample receipt notice indicating the condition of the samples as received upon receipt.

ALS Warabrook undertook the laboratory testing. Samples were analysed for the identified contaminants of concern being Organochlorine and Organophosphorus Pesticides (OCP/OPP). Results are contained within the laboratory report sheets, **Appendix C** and for **sample no's 9523-1; 9523-2 and 9523-3.** The results are also discussed in the following section of RCA's report.

4 INSPECTION RESULTS AND DISCUSSION

The property located at Middlebrook Road, Scone NSW slopes gently towards the west and contains healthy foliage (refer to **Appendix B**, **Photographs 1**, **2**, **3**, **5 and 6**). A creek is located at the western boundary of the property (**Photograph 2**). There were no indications of visual or odour contamination in this creek. There is also a residence located near the eastern boundary of this property (**Photograph 1**); and there were no activities which may be creating contamination issues observed at this property at the time of inspection.

There was no evidence of potentially contaminating land uses at the property other than for grazing and the growing of lucerne in a paddock near the eastern boundary of the property (**Photograph 1**). Small amounts of cow manure were observed within the property.

RCA visually inspected the soil within a limited number of superficial (surface to 50mm depth) locations within the property. The soil within the property was brown, natural soil (silt and clay) with no visual or odour signs of contamination (example shown in **Photograph 4**).

The vegetation immediately outside the property, e.g. trees, is healthy (example shown in **Photograph 5**). There was no visual or olfactory evidence of contamination or contaminating activities observed in close proximity to the site from the neighbouring properties.

As mentioned in Section 3 of this RCA report, a limited number of soil samples were taken in an isolated area of the property, and given the recent spraying of weeds in that area. As shown in the Laboratory report attached in Appendix C, and for the relevant sample no's (**9523-1; 9523-2 and 9523-3**):

- Results for all soil samples reported concentrations of OCP and OPP below the laboratory detection levels; and
- Laboratory results for all soil samples reported concentrations below the strictest Health Investigation Levels (HIL's, and where a criteria applies), as sourced from the National Environment Protection Measure (NEPM) for the Assessment of Site Contamination, 1999 (Reference [1]). The strictest HIL criteria is "A", which is applies to residential applications and examples of some OC/OPP criteria are (a) Heptachlor 10mg/kg; and (b) Aldrin and Dieldrin 10mg/kg.

RCA considers that this site has a low risk of contamination due to the following observations and reasons:

- The current and previous land use, i.e., grazing and the holding of animals, with some growing of lucerne;
- No visual or olfactory evidence of contamination was observed at the site during inspection;
- No evidence of potentially contaminating activities were observed during site inspection;
- The laboratory test results, for three (3) soil samples taken in an area of recent weed spraying all reported concentrations below the strictest Health Investigation Levels (HIL A). Please note that despite the indications of weed spraying in the central area, the foliage was generally healthy and there were no visual or olfactory indications of contamination; and
- The soils were observed to comprise natural materials only. No evidence of fill material was observed within the property area during the inspection.

5 CONCLUSIONS AND RECOMMENDATIONS

RCA was commissioned by Shayne Clarke to carry out a preliminary and limited site contamination assessment for land within a private property located in Scone NSW.

On the basis of the information obtained by RCA including a site inspection and soil analysis for potential contaminants of concern, RCA considers that the risk of contamination from this property is not significant. RCA also considers that the property is suitable for the proposed residential sub-division.

6 LIMITATIONS

This report has been prepared for Shayne Clarke in accordance with an agreement with RCA dated March 12, 2013. The services performed by RCA have been conducted in a manner consistent with that generally exercised by members of its profession and consulting practice.

This report has been prepared for the sole use of Shayne Clarke and MM Hyndes Bailey and Co. The report may not contain sufficient information for purposes of other uses or for parties other than Shayne Clarke. This report shall only be presented in full and may not be used to support objectives other than those stated in the report without written permission from RCA.

The information in this report is considered accurate at the date of issue with regard to the current conditions of the site. Conditions can vary across any site that cannot be explicitly defined by investigation. RCA will not be held responsible for the location of contaminated materials at locations other than those inspected by RCA.

Environmental conditions including contaminant concentrations can change in a limited period of time. This should be considered if the report is used following a significant period of time after the date of issue.

Yours faithfully

RCA AUSTRALIA

Martin Belk
Associate Environmental Engineer

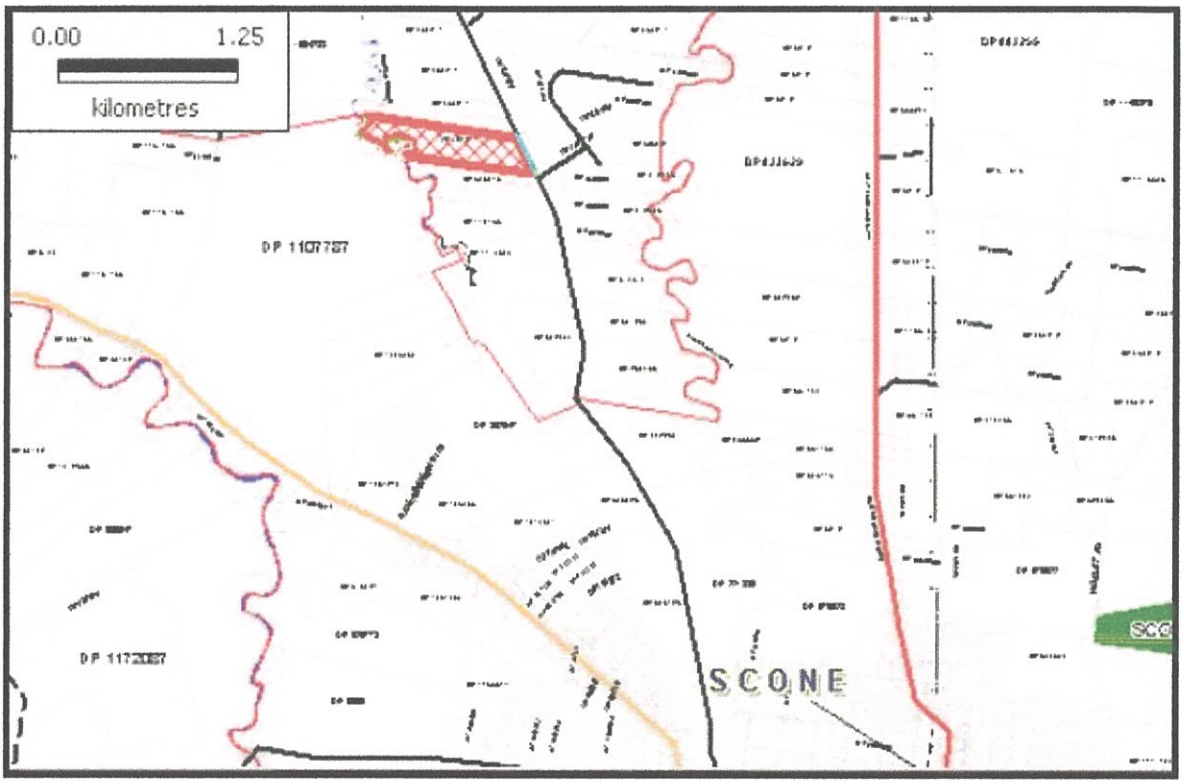
Matthew Clark
Associate Environmental Scientist

References

[1] NEPC, *National Environment Protection (Assessment of Site Contamination) Measure*, 1999.

Appendix A

Location Plan and plan of the land for Proposed Sub-division, as Provided by MM Hyndes Bailey & Co


0.00
1.25
kilometres
DP 1107727
SCONE

Property is within the red boundary

Note: The property is within the red bordering.

Appendix B

Site Photographs

PHOTOGRAPH 1 *Property located at Middlebrook Road, Scone(Lot 52 in DP 750941) and the subject of this assessment. View is to the north east and the residence is shown to the left of this image. Healthy green lucerne is also shown, with no signs of contamination.*

PHOTOGRAPH 2 *Property view to the western boundary, view to the west, A creek is shown in centre of image. No contamination was observed in the creek, and all the foliage was healthy.*

PHOTOGRAPH 3 *Paddock area to the west of the property, view to the east. Healthy foliage and no signs of contamination.*

PHOTOGRAPH 4 *Subsurface soils within western end of property. Natural and brown soil (silt and clay) and there were no visual or odour signs of contamination.*

PHOTOGRAPH 5 *Near to the northern boundary of the property, view to the east. No visual or odour signs of contamination; and the foliage is healthy within the property (right of fence line); and outside the property (left of fence line).*

PHOTOGRAPH 6 *Central area of the property, view to the west. Evidence of recent weed spraying Soil samples (3) were taken in the brown patched area to the left of the track.* ***Note: despite the indications of weed spraying in isolated areas, the foliage was healthy and there were no visual or odour indications of contamination.***

PHOTOGRAPH 7 *Central area of the property, view to the east (i.e. "reverse" view of **Photograph 6**). Soil samples (3) were taken in brown patched area to the right of the track.*

PHOTOGRAPH 8 *Central area of the property, and this photograph was taken from the access track, looking south. The soil samples (3) were taken from the locations of brown patches, and approximately 10m apart.*

PHOTOGRAPH 9 *Example of soil sample (**sample no. 9523-1**) taken in the central area of the property vicinity and as shown in **Photograph 8** , to check the presence of Organochloro and Organophosphate Pesticides in the soil following limited weed spraying in that area.* ***All soil samples (3) reported laboratory results less than the detection limits, and also below the strictest Health Investigation Level (HIL "A", residential) for Organochloro and Organophosphate Pesticides.***

Appendix C

Laboratory Report – Soil Samples

ALS Group

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **ES1307181**	Page	: 1 of 5
Client	: **ROBERT CARR & ASSOCIATES P/L**	Laboratory	: Environmental Division Sydney
Contact	: MR MARTIN BELK	Contact	: Client Services
Address	: P O BOX 175 CARRINGTON NSW, AUSTRALIA 2294	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: martinb@rca.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 4902 9200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 4902 9299	Facsimile	: +61-2-8784 8500
Project	: SCONE 9523	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 27-MAR-2013
Sampler	: M.BELK	Issue Date	: 05-APR-2013
Site	: ----		
		No. of samples received	: 4
Quote number	: SY/479/12	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Christopher Owler	Asbestos Identifier	Newcastle - Asbestos
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **EA200 Legend**
- **EA200 'Am' Amosite (brown asbestos)**
- **EA200 'Ch' Chrysotile (white asbestos)**
- **EA200 'Cr' Crocidolite (blue asbestos)**
- **EA200 't' Trace levels**
- **EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.**
- **EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.**
- **EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	9523-1	9523-2	9523-3	9523-4	----
				Client sampling date / time	26-MAR-2013 15:00	26-MAR-2013 15:00	26-MAR-2013 15:00	26-MAR-2013 15:00	----
Compound	CAS Number	LOR	Unit		ES1307181-001	ES1307181-002	ES1307181-003	ES1307181-004	----
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		26.4	22.4	24.1	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples									
Asbestos Detected	1332-21-4	0.1	g/kg		----	----	----	Yes	----
Asbestos Type	1332-21-4	0.1	--		----	----	----	Ch + Am + Cr	----
Synthetic Mineral Fibre	----	0.1	--		----	----	----	No	----
Organic Fibre	----	0.1	--		----	----	----	No	----
Sample weight (dry)	----	0.01	g		----	----	----	19.9	----
Unknown Mineral Fibre	----	0.1	g/kg		----	----	----	No	----
APPROVED IDENTIFIER:	----	-	--		----	----	----	C.OWLER	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	9523-1	9523-2	9523-3	9523-4	----
				Client sampling date / time	26-MAR-2013 15:00	26-MAR-2013 15:00	26-MAR-2013 15:00	26-MAR-2013 15:00	----
Compound	CAS Number	LOR	Unit		ES1307181-001	ES1307181-002	ES1307181-003	ES1307181-004	----
EP068A: Organochlorine Pesticides (OC) - Continued									
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		108	103	101	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		125	117	114	----	----

Analytical Results

Descriptive Results

Sub-Matrix: SOIL

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	9523-4 - 26-MAR-2013 15:00	One piece of bonded asbestos cement sheeting approximately 85 x 60 x 5 mm.

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	145
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	32	142