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30 September 2022

Mr John Sabbouh
Richard Crookes Constructions
Level 3, 4 Broadcast Way
Artarmon NSW 2064

**RE: WASTE CLASSIFICATION OF STOCKPILED FILL SOIL CONTAINING ASBESTOS
CEMENT SHEET DEBRIS IN THE CHAPEL, MEDICAL CENTRE, MONASTERY AREAS AT ST
JOHN OF GOD RICHMOND HOSPITAL, 177 GROSE VALE ROAD, NORTH RICHMOND NSW**

Dear Sir,

INTRODUCTION

This letter report presents the findings of a waste classification assessment conducted on fill soils that have been excavated and stockpiled in the areas on which the former chapel, medical centre and monastery buildings were located within the St John of God Richmond Hospital at 177 Grose Vale Road, North Richmond NSW (the site). Following demolition of the chapel and medical centre buildings, fill soil below the concrete slab floors of these buildings was found to contain random fragments of asbestos cement sheet debris.

In the former monastery building area, fill soil on the southern side of the building that was located behind a brick retaining wall has been excavated to allow the retaining wall to be demolished. This fill has also been found to contain fragments of asbestos cement sheet debris.

The fill soil containing asbestos cement sheet debris in each of these three areas has been stockpiled to allow for waste classification sampling and reporting to be completed. The soil in each of these three areas cannot be retained on site and is to be excavated for off-site disposal at a landfill facility licenced to accept the soil. Soil sampling from the stockpiles to allow for the soil to be classified for off-site disposal was undertaken on Tuesday 27 September 2022.

SITE IDENTIFICATION DETAILS

Site address: 177 Grose Vale Road, North Richmond NSW

Le Identification: Lot 12 DP1134453 and Lot 11 DP11134453

LGA: Hawkesbury City Council

Zoning: RU1 Primary Production, W1 Natural Waterways



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SITE OBSERVATIONS AND SOIL SAMPLING

Fieldwork was undertaken on Tuesday 27 September 2022 and comprised an inspection of the fill soil in each of the three soil stockpile areas. The soil in each of the stockpiles comprises sandy and silty clay soil in which there are pieces of brick and concrete debris from the recently completed demolition work. See attached photograph Nos. 1, 2 and 3.

In each of the soil stockpiles there are numerous fragments of asbestos cement sheet debris. See attached photograph Nos. 4 and 5.

During the site inspection four soil samples were collected from the stockpiled fill soil for laboratory analysis to ascertain the levels of potential chemical contaminants to enable this waste classification report to be prepared to allow for the fill soil to be disposed of to a suitably licenced landfill site.

The stockpiled fill soil in the chapel, medical centre and monastery demolition areas has no noticeable odour or discolouration from oil or chemical contamination.

Four soil sample were collected during the site inspection on 27 September 2022 for laboratory analysis to determine the waste classification of the stockpiled fill soil containing asbestos cement sheet debris that is to be loaded out from the site for off-site disposal at a NSW EPA licenced landfill site.

ANALYTICAL REGIME

The soil samples collected on 27 September 2022 were placed into clean laboratory supplied sample jars fitted with Teflon lined lids that were each marked with the date, sample number and project number. The sample jars were filled with soil with no airspace remaining.

The sampled soil was collected using disposable surgical-type gloves. No tools requiring cleaning prior to or following sample collection were used for the sample collection.

Following collection, the samples were placed into a chilled esky and were delivered to Envirolab Services NATA accredited laboratory at Chatswood NSW on 28 September 2022 for waste classification analysis for the following suite of common contaminants including:



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- 8 priority heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc);
- Polycyclic Aromatic Hydrocarbons (PAH);
- Total Recoverable Hydrocarbons (TRH);
- Monocyclic Aromatic Hydrocarbons (Benzene, Toluene, Ethyl benzene and Xylene: BTEX);
- Organochlorine pesticides (OCP),
- Polychlorinated Biphenyls (PCB) and
- Asbestos.

ASSESSMENT CRITERIA

With regard to the stockpiled fill soil at the site which is to be excavated for disposal at a licenced landfill facility, waste classification assessment was conducted with reference to the NSW Environment Protection Authority (NSW EPA) Waste Classification Guidelines (November 2014). According to these guidelines, waste material is to be assessed by the following six step process, viz.

Steps Description

1. Is the waste Special Waste? – Yes, the soil contains asbestos cement sheet debris.
2. Is the waste Liquid Waste? - No, the sampled material comprises mostly sand fill soil with some building debris inclusions.
3. Has the waste been pre-classified? - No, the soil is not pre-classified as per the NSW EPA 2014 waste guideline.
4. Is the waste Hazardous Waste? – No, the waste soil does not comprise hazardous waste.
5. Chemical Assessment in accordance with the specified total and or leachable contaminant concentration thresholds? – Yes, see attached summary table of laboratory results.
6. Is the waste putrescible? – No putrescible waste was sighted on or in the sandy clay fill soil located in the wellness centre construction area at the site that is to be excavated for off-site disposal and which is the subject of this waste classification report.

In particular, with regard to Step 6, wastes that are generally not classified as putrescible include soils, timber, garden trimmings, agricultural, forestry and crop materials, and natural fibrous organic and vegetative materials (NSW EPA, 2014).



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SUMMARY OF RESULTS AND WASTE CLASSIFICATION

The analytical results for the soil samples are presented in the attached table (Table 1). The NATA endorsed laboratory reports are attached to this letter report.

The contaminant levels within the stockpiled fill soil in the Chapel, Medical Centre and Monastery areas within the St John of God Richmond Hospital site at 177 Grose Vale Road, North Richmond NSW were found to be below the maximum guideline levels for classification as general solid waste (non-putrescible) based on the contaminant threshold (CT1) with the exception of organochlorine pesticides (OCP) in sample 2.

Each of the soil stockpiles contains asbestos cement sheet debris. The soil in the stockpile Nos. 1, 3 and 4 (medical centre and monastery areas) must only be disposed of at a landfill facility licenced by the NSW EPA to accept soils classified as general solid waste – special waste asbestos.

The level of OCP in sample 2 (chapel) is above the maximum concentration for general solid waste classification and restricted solid waste classification and this soil must be disposed of as hazardous waste to a landfill facility that can lawfully accept this soil.

It is recommended that the receiving NSW EPA landfill site(s) should check the incoming materials and ensure that the waste received matches the material description provided in this letter report.

Important Note:

PCA's assessment is necessarily based on the result of limited site investigation and sample testing. Neither PCA, nor any other reputable consultant, can provide unqualified warranties nor does PCA assume any liability for site conditions not observed, or accessible during the time of the investigations.

Despite all reasonable care and diligence, the materials encountered and concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated.

In addition, site characteristics may change at any time in response to variations in natural conditions, chemical reactions and other events, e.g. groundwater movement and or spillages of contaminating substances. These changes may occur subsequent to PCA's investigations and assessment.



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This report and associated documentation and the information herein have been prepared solely for the use of Richard Crookes Constructions, their excavation and transport contractors as well as interested parties at the time and is valid (for the purposes of transport of material) for a period of one month only from the date of issue.

Any other reliance assumed by third parties on this report shall be at such parties' own risk. Any ensuing liability resulting from use of the report by third parties cannot be transferred to PCA.

Please note that Part 5.6, Section 143 of the Protection of the Environment Operations (POEO) Act 1997 states that it is an offence for waste to be transported to a place that cannot lawfully be used as a facility to accept that waste. It is the duty of the owner and transporter of the waste to ensure that the waste is disposed of appropriately. PCA accept no liability for the unlawful disposal of waste materials from any site. PCA accepts no responsibility for the material tracking, loading, management, transport or disposal of waste from the site. Before disposal of the material to a licensed landfill is undertaken, the waste producer is required to obtain consent from the landfill.

If you require any further information, please contact the undersigned on 0437 251 358.

Yours faithfully
P. CLIFTON & ASSOCIATES PTY LTD

A handwritten signature in black ink that appears to read "P. Clifton".

Philip Clifton
Principal

Attachments:
Photographs
Laboratory Report and Chain of Custody Documentation



PHOTOGRAPHS



23 August 2022



Photograph No. 1: Sandy clay fill soil stockpiled in former medical centre building area



Photograph No. 2: Sandy clay fill soil stockpiled in former chapel building area



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**Photograph No. 13 Sandy clay fill soil stockpiled in the
rear area of the former monastery building**



**Photograph No. 4: Fragments of asbestos cement
sheet identified in fill soil in the chapel area**



30 September 2022



Photograph No. 5: Fragments of asbestos cement sheet identified in fill soil in the monastery building area



LABORATORY REPORT AND CHAIN OF CUSTODY DOCUMENTATION

CERTIFICATE OF ANALYSIS 306774

Client Details

Client	P Clifton & Assoc
Attention	Phil Clifton
Address	PO Box 447, Pymble Business Ctre, NSW, 2073

Sample Details

Your Reference	<u>North Richmond</u>
Number of Samples	4 Soil
Date samples received	28/09/2022
Date completed instructions received	28/09/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
 Samples were analysed as received from the client. Results relate specifically to the samples as received.
 Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	29/09/2022
Date of Issue	29/09/2022
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Asbestos Approved By

Analysed by Asbestos Approved Analyst: Nyovan Moonean
 Authorised by Asbestos Approved Signatory: Lucy Zhu

Authorised By



Nancy Zhang, Laboratory Manager

Results Approved By

Hannah Nguyen, Metals Supervisor
 Josh Williams, Organics and LC Supervisor
 Kyle Gavrily, Senior Chemist
 Lucy Zhu, Asbestos Supervisor

Client Reference: North Richmond

vTRH(C6-C10)/BTEXN in Soil					
Our Reference	UNITS	306774-1	306774-2	306774-3	306774-4
Your Reference		1 SP Medical	2 SP Chapel	3 SP Monastery - W	4 SP Monastery - E
Date Sampled		27/09/2022	27/09/2022	27/09/2022	27/09/2022
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	28/09/2022	28/09/2022	28/09/2022	28/09/2022
Date analysed	-	29/09/2022	29/09/2022	29/09/2022	29/09/2022
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	110	122	139	124

Client Reference: North Richmond

svTRH (C10-C40) in Soil					
Our Reference	UNITS	306774-1	306774-2	306774-3	306774-4
Your Reference		1 SP Medical	2 SP Chapel	3 SP Monastery - W	4 SP Monastery - E
Date Sampled		27/09/2022	27/09/2022	27/09/2022	27/09/2022
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	28/09/2022	28/09/2022	28/09/2022	28/09/2022
Date analysed	-	29/09/2022	29/09/2022	29/09/2022	29/09/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	120	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	140	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	260	<50	<50
TRH >C ₁₀ - C ₁₆	mg/kg	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50
TRH >C ₁₆ - C ₃₄	mg/kg	<100	230	<100	<100
TRH >C ₃₄ - C ₄₀	mg/kg	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	230	<50	<50
Surrogate o-Terphenyl	%	71	71	68	69

Client Reference: North Richmond

PAHs in Soil					
Our Reference	UNITS	306774-1	306774-2	306774-3	306774-4
Your Reference		1 SP Medical	2 SP Chapel	3 SP Monastery - W	4 SP Monastery - E
Date Sampled		27/09/2022	27/09/2022	27/09/2022	27/09/2022
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	28/09/2022	28/09/2022	28/09/2022	28/09/2022
Date analysed	-	28/09/2022	28/09/2022	28/09/2022	28/09/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	77	79	81	79

Client Reference: North Richmond

Organochlorine Pesticides in soil					
Our Reference	UNITS	306774-1	306774-2	306774-3	306774-4
Your Reference		1 SP Medical	2 SP Chapel	3 SP Monastery - W	4 SP Monastery - E
Date Sampled		27/09/2022	27/09/2022	27/09/2022	27/09/2022
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	28/09/2022	28/09/2022	28/09/2022	28/09/2022
Date analysed	-	28/09/2022	28/09/2022	28/09/2022	28/09/2022
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	48	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	15	<0.1	<0.1
Endrin	mg/kg	<0.1	0.5	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	0.1	<0.1	<0.1
Surrogate TCMX	%	98	82	92	86

Client Reference: North Richmond

PCBs in Soil					
Our Reference	UNITS	306774-1	306774-2	306774-3	306774-4
Your Reference		1 SP Medical	2 SP Chapel	3 SP Monastery - W	4 SP Monastery - E
Date Sampled		27/09/2022	27/09/2022	27/09/2022	27/09/2022
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	28/09/2022	28/09/2022	28/09/2022	28/09/2022
Date analysed	-	28/09/2022	28/09/2022	28/09/2022	28/09/2022
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	82	92	86

Client Reference: North Richmond

Acid Extractable metals in soil						
Our Reference	UNITS	306774-1	306774-2	306774-3	306774-4	306774-5
Your Reference		1 SP Medical	2 SP Chapel	3 SP Monastery - W	4 SP Monastery - E	1 SP Medical - [TRIPPLICATE]
Date Sampled		27/09/2022	27/09/2022	27/09/2022	27/09/2022	27/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	29/09/2022	29/09/2022	29/09/2022	29/09/2022	29/09/2022
Date analysed	-	29/09/2022	29/09/2022	29/09/2022	29/09/2022	29/09/2022
Arsenic	mg/kg	5	4	11	9	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	23	6	6	8
Copper	mg/kg	21	20	33	34	24
Lead	mg/kg	36	14	33	43	54
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	10	29	9	9	11
Zinc	mg/kg	75	130	100	130	140

Client Reference: North Richmond

Moisture					
Our Reference		306774-1	306774-2	306774-3	306774-4
Your Reference	UNITS	1 SP Medical	2 SP Chapel	3 SP Monastery - W	4 SP Monastery - E
Date Sampled		27/09/2022	27/09/2022	27/09/2022	27/09/2022
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	28/09/2022	28/09/2022	28/09/2022	28/09/2022
Date analysed	-	29/09/2022	29/09/2022	29/09/2022	29/09/2022
Moisture	%	14	12	14	16

Client Reference: North Richmond

Asbestos ID - soils					
Our Reference		306774-1	306774-2	306774-3	306774-4
Your Reference	UNITS	1 SP Medical	2 SP Chapel	3 SP Monastery - W	4 SP Monastery - E
Date Sampled		27/09/2022	27/09/2022	27/09/2022	27/09/2022
Type of sample		Soil	Soil	Soil	Soil
Date analysed	-	29/09/2022	29/09/2022	29/09/2022	29/09/2022
Sample mass tested	g	Approx. 40g	Approx. 40g	Approx. 45g	Approx. 45g
Sample Description	-	Brown coarse-grained soil and rocks			
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Client Reference: North Richmond

TCLP Preparation - Acid					
Our Reference	UNITS	306774-1	306774-2	306774-3	306774-4
Your Reference		1 SP Medical	2 SP Chapel	3 SP Monastery - W	4 SP Monastery - E
Date Sampled		27/09/2022	27/09/2022	27/09/2022	27/09/2022
Type of sample		Soil	Soil	Soil	Soil
pH of soil for fluid# determ.	pH units	7.5	10.8	7.8	8.0
pH of soil TCLP (after HCl)	pH units	1.7	1.9	1.7	1.7
Extraction fluid used		1	1	1	1
pH of final Leachate	pH units	5.2	6.3	5.1	5.0

Client Reference: North Richmond

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-004	<p>Toxicity Characteristic Leaching Procedure (TCLP) using AS 4439 and USEPA 1311.</p> <p>Please note that the mass used may be scaled down from default based on sample mass available.</p> <p>Samples are stored at 2-6oC before and after leachate preparation.</p>
Inorg-008	Moisture content determined by heating at 105+-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	<p>Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.</p> <p>F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.</p>
Org-020	<p>Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.</p> <p>F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.</p> <p>Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).</p>
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	<p>Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.</p> <p>Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.</p>
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.

Client Reference: North Richmond

Method ID	Methodology Summary
Org-022/025	<p>Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS.</p> <p>Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.</p>
Org-022/025	<p>Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.</p> <p>For soil results:-</p> <ol style="list-style-type: none"> 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. <p>Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.</p>
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	<p>Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.</p> <p>Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.</p>

Client Reference: North Richmond

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil							Duplicate		Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-22	306774-2
Date extracted	-			28/09/2022	1	28/09/2022	28/09/2022		28/09/2022	28/09/2022
Date analysed	-			29/09/2022	1	29/09/2022	29/09/2022		29/09/2022	29/09/2022
TRH C ₆ - C ₉	mg/kg	25	Org-023	<25	1	<25	<25	0	114	116
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	<25	1	<25	<25	0	114	116
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	113	123
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	114	123
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	117	112
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	117	116
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	116	118
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	131	1	110	132	18	124	139

Client Reference: North Richmond

QUALITY CONTROL: svTRH (C10-C40) in Soil							Duplicate		Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-22	306774-2
Date extracted	-			28/09/2022	1	28/09/2022	28/09/2022		28/09/2022	28/09/2022
Date analysed	-			29/09/2022	1	29/09/2022	29/09/2022		29/09/2022	29/09/2022
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	<50	1	<50	<50	0	114	102
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	<100	1	<100	<100	0	118	102
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	<100	1	<100	<100	0	100	123
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	<50	1	<50	<50	0	114	102
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	<100	1	<100	<100	0	118	102
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	<100	1	<100	<100	0	100	123
Surrogate o-Terphenyl	%		Org-020	77	1	71	75	5	112	71

Client Reference: North Richmond

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-22	306774-2	
Date extracted	-			28/09/2022	1	28/09/2022	28/09/2022		28/09/2022	28/09/2022	
Date analysed	-			28/09/2022	1	28/09/2022	28/09/2022		28/09/2022	28/09/2022	
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	103	111	
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]	
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	93	
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	99	86	
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	120	110	
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]	
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	96	86	
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	91	
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]	
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	71	65	
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]	
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	108	82	
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]	
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]	
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]	
Surrogate p-Terphenyl-d14	%		Org-022/025	83	1	77	82	6	84	114	

Client Reference: North Richmond

QUALITY CONTROL: Organochlorine Pesticides in soil							Duplicate		Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-22	306774-2
Date extracted	-			28/09/2022	1	28/09/2022	28/09/2022		28/09/2022	28/09/2022
Date analysed	-			28/09/2022	1	28/09/2022	28/09/2022		28/09/2022	28/09/2022
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	86
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	103	82
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	95
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	109	#
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	104	94
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	99
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	#
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	94	79
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	91
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	80	80
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TC MX	%		Org-022/025	82	1	98	93	5	92	122

Client Reference: North Richmond

QUALITY CONTROL: PCBs in Soil							Duplicate		Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-22	306774-2
Date extracted	-			28/09/2022	1	28/09/2022	28/09/2022		28/09/2022	28/09/2022
Date analysed	-			28/09/2022	1	28/09/2022	28/09/2022		28/09/2022	28/09/2022
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	99	80
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	82	1	98	93	5	92	122

Client Reference: North Richmond

QUALITY CONTROL: Acid Extractable metals in soil							Duplicate		Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-21	306774-2
Date prepared	-			29/09/2022	1	29/09/2022	29/09/2022		29/09/2022	29/09/2022
Date analysed	-			29/09/2022	1	29/09/2022	29/09/2022		29/09/2022	29/09/2022
Arsenic	mg/kg	4	Metals-020	<4	1	5	6	18	106	100
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	104	84
Chromium	mg/kg	1	Metals-020	<1	1	7	7	0	104	87
Copper	mg/kg	1	Metals-020	<1	1	21	30	35	107	117
Lead	mg/kg	1	Metals-020	<1	1	36	77	73	105	88
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	123	120
Nickel	mg/kg	1	Metals-020	<1	1	10	13	26	106	76
Zinc	mg/kg	1	Metals-020	<1	1	75	80	6	105	#

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOP Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

OC's in Soil - # Percent recovery for the surrogate/matrix spike is not possible to report as the high concentration of analytes in sample/s 306774-2ms have caused interference.

Acid Extractable Metals in Soil:

-The laboratory RPD acceptance criteria has been exceeded for 306774-1 for Pb. Therefore a triplicate result has been issued as laboratory sample number 306774-5.

-# Percent recovery is not possible to report due to the inhomogeneous nature of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Asbestos: A portion of the supplied sample was sub-sampled for asbestos according to ASB-001 asbestos subsampling procedure. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab/MPL recommends supplying 40-60g or 500ml of sample in its own container.

Note: Samples 306774-1-4 were sub-sampled from jars provided by the client.



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CHAIN OF CUSTODY FORM - Client

[Copyright and Confidential]

Company:	P Clifte & Assoc		
Contact Person:			
Project Mgr:			
Sampler:			
Address:			
Phone:		Mob:	
Email Results to:	philcliften@philcliften.com		
Email Invoice to:			

Client Project Name/Number/Site etc (ie report title):
North Richmond

PO No. (if applicable)

Envirolab Quote No. :

Date results required

Date results required:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Or choose:	Standard	Same Day	1 day	2 day	3 day

Note: Inform lab in advance if urgent turnaround is required - surcharges apply

Additional report format: Esdat Equis

Lab Comments:

Please tick the box if observed settled sediment present in water samples is to be included in the extraction and/or analysis.

Relinquished by (Company):	Christen & Associates	Received by (Company):	ERS 33 YD	Lab Use Only	
Print Name:	Phil Christen	Print Name:	Christine	Job number:	306774
Date & Time:	28-9-22 12:45	Date & Time:	28/09/22 12:55	Temperature:	14 °C
Signature:	P. Christen	Signature:	K	TAT Req - SAME day / 1 / 2 / 3 / 4 / STD	/

SAMPLE RECEIPT ADVICE

Client Details

Client	P Clifton & Assoc
Attention	Phil Clifton

Sample Login Details

Your reference	North Richmond
Envirolab Reference	306774
Date Sample Received	28/09/2022
Date Instructions Received	28/09/2022
Date Results Expected to be Reported	29/09/2022

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	4 Soil
Turnaround Time Requested	1 day
Temperature on Receipt (°C)	14
Cooling Method	None
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	Phone: 02 9910 6200
Fax: 02 9910 6201	Fax: 02 9910 6201
Email: ahie@envirolab.com.au	Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:

Sample ID	VTRH(C6-C10)/BTEXN in Soil	sVTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	PCBs in Soil	Acid Extractable metals in soil	Asbestos ID - soils	TCLP Preparation - Acid
1 SP Medical	✓	✓	✓	✓	✓	✓	✓	✓
2 SP Chapel	✓	✓	✓	✓	✓	✓	✓	✓
3 SP Monastery - W	✓	✓	✓	✓	✓	✓	✓	✓
4 SP Monastery - E	✓	✓	✓	✓	✓	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default).

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.



SUMMARY TABLE OF ANALYTICAL RESULTS



Table 1 – Summary of Analytical Results 30 September 2022

Richard Crookes Constructions – Chapel, Medical Centre and Monastery Areas at St John of God Richmond Hospital, North Richmond NSW

Sampled Tuesday 27 September 2022

Analyte	Sample 1 Medical Centre Stockpile 306774-1	Sample 2 Chapel Stockpile 306774-2	Sample 3 Monastery Stockpile, west 306774-3	Sample 4 Monastery Stockpile, east 306774-4	NSW EPA Waste Classification General Solid Waste Threshold Levels			NSW EPA Waste Classification Restricted Solid Waste Threshold Levels		NSW EPA Waste Classification
	Total concentration (mg/kg)	Total Concentration (mg/kg)	Total concentration (mg/kg)	Total concentration (mg/kg)	CT1 concentration (mg/kg)	SCC1 concentration (mg/kg)	TCLP1 concentration (mg/L)	SCC2 concentration (mg/kg)	TCLP2 concentration (mg/L)	
Sample depth	Stockpile 0.1m	Stockpile 0.1m	Stockpile 0.1m	Stockpile 0.1m	-	-	-			-
Arsenic	5	4	11	9	100	500	5	2,000	20	General solid waste
Cadmium	<0.4	<0.4	<0.4	<0.4	20	100	1	400	4	General solid waste
Chromium	7	23	6	6	100	1900	5	7,600	20	General solid waste
Copper	21	20	33	34	-	-	-	-	-	General solid waste
Lead	54	14	33	43	100	1500	5	6,000	20	General solid waste
Mercury	<0.1	<0.1	<0.1	<0.1	4	50	0.2	200	0.8	General solid waste
Nickel	10	29	9	9	40	1050	2	4,200	8	General solid waste
Zinc	75	130	100	130	-	-	-	-	-	General solid waste
Benzene	<0.2	<0.2	<0.2	<0.2	10	18	0.5	72	2	General solid waste
Toluene	<0.5	<0.5	<0.5	<0.5	288	1080	14.4	2,073	57.6	General solid waste
Ethyl Benzene	<1.0	<1.0	<1.0	<1.0	600	1080	30	4,320	120	General solid waste
Total Xylenes	<1.0	<1.0	<1.0	<1.0	1000	1800	50	7,200	200	General solid waste
TPH C6-9	<25	<25	<25	<25	650	650	N/A	2,600	N/A	General solid waste
TPH C10-40	<100	230	<100	<100	10000	10000	N/A	40,000	N/A	General solid waste
Total PAH	<0.2	<0.2	<0.2	<0.2	200	200	N/A	800	N/A	General solid waste
Benzo(a)pyrene	<0.05	<0.05	<0.05	<0.05	0.8	10	0.04	23	0.16	General solid waste
OCP (Pesticides)	<0.1	63.1	<0.1	<0.1	<50	<50	N/A	<50	N/A	Hazardous Waste
PCB	<0.1	<0.1	<0.1	<0.1	<50	<50	N/A	<50	N/A	General solid waste
Asbestos in soil	Visible ACM present	Visible ACM present	Visible ACM present	Visible ACM present	-	-	-			Special waste asbestos