

JBS&G 50970-101448
L01 Willoughby Rd Artarmon Review (Rev 0)

21 September 2015

Natasha Beljic
Government Property NSW
Via email: natasha.beljic@property.nsw.gov.au

Review of Contamination Status – Lot 2 DP 586037, Willoughby Road, Artarmon, NSW

Dear Natasha,

1. Introduction

1.1 Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Government Property NSW (the client) to provide contamination advice in relation to the property at Willoughby Road, Artarmon, NSW, identified as Lot 2 in DP 586037 (the site). The site is currently vacant and has a total site area of approximately 1,682 m².

A Preliminary Site Investigation (PSI) was completed at the site in 2013 (JBS 2013a¹) which included limited soil sampling and identified isolated asbestos in soil impacts. A remedial action plan (RAP) was subsequently prepared (JBS&G 2013b²) and remedial works implemented and validated (JBS&G 2013c³).

It is understood that the site is being reviewed to determine if environmental factors/conditions have changed since the previous reports, and if so, to update existing environmental reports.

1.2 Objectives

The objectives of the current investigation are to review the previous reports available, conduct a detailed site inspection, and assess the potential for contamination based on current and historical site activities.

1.3 Scope of Works

The following scope of works were undertaken:

- Review of the previous reports prepared by JBS&G, in particular the most recent validation report (JBS&G 2013c), to understand the condition of the site at the time the previous works were completed;

¹ JBS Environmental Pty Ltd, February 2013. Preliminary Site Investigation – Willoughby Road, Artarmon, NSW. Department of Planning and Infrastructure. JBS 42374-52090. (JBS 2013a)

² JBS&G Australia Pty Ltd, 27 September 2013. Remedial Action Plan – Lot 2 DP586037 Willoughby Road, Artarmon, NSW. Office of Strategic Lands within the Department of Planning and Infrastructure. 42374-55495. (JBS&G 2013b)

³ JBS&G Australia Pty Ltd, 29 October 2013. Validation Report, Willoughby road, Artarmon, NSW. Office of Strategic Lands within the Department of Planning and Infrastructure. JBS&G 43079-55844 (JBS&G 2013c)

- Review of updated background information where required for currency, including review of current EPA environmental/contamination notices/records, and aerial photographs in the intervening period;
- A detailed site inspection documenting the current site conditions. This was compared with site conditions reported previously; and
- Preparation of a brief letter report describing the current conditions (including photographic log) and recommendations for any additional contamination investigation or management actions that may be required should substantial changes be noted.

2. Site Condition and Surrounding Environment

2.1 Site Identification

The site details are summarised in **Table 2.1** below and shown on **Figure 2**.

Table 2.1 Site Details

Lot/DP	Lot 2 DP586037
Site Address	Willoughby Road, Artarmon, NSW
Local Government Authority	City of Willoughby
Approximate Geographical Coordinates	E: 333321.764 N: 6257262.005
Site Area	Approximately 1,682 m ²
Previous Use	Commercial/Industrial – Mechanics, Bakery and Ice Works
Current Use	Vacant land
Potential Post Sale Use	Residential Development

2.2 Site Description

A site inspection was conducted on 19 August 2015, and photographic log is provided in **Attachment 3**.

The site is a triangular shaped vacant lot accessible via Willoughby Road. Site entry is through a padlocked fence along the eastern border of the site. The site is bound along the south-western border by a brick wall and along the north-western border by a sheet metal fence.

Along the southern boundary of the site is concrete pavement, which extend approximately 5 m into the site. The concrete slabs were observed to be in poor condition due to significant cracks and vegetation present. The remaining site was grassed with several large trees present. The grassed area present on site was slightly raised compared to surrounding areas, which may indicate historical cut and/or fill activities. The overall slope of the site is to the east towards Willoughby Road.

Dumped building materials were present along the southern border of the site. This included concrete, wood, metal fencing, and a Willoughby Council green recycling bin. No asbestos was observed on-site. A small sand stockpile (less than 2 m³) was also observed directly against the eastern site fence, with a small amount of sand falling within the site.

2.3 Surrounding Land Use

The surrounding land uses have been identified as follows:

- North – residential properties;
- South – residential properties;
- East – Willoughby Road and Hallstrom Park; and
- West – residential properties and TCN Channel 9 Studios.

3. Review of Previous Reports

3.1 Preliminary Site Investigation – JBS 2013a

A PSI was undertaken by JBS Environmental to characterise the potential for contamination at the site and assess its suitability for rezoning.

The soil profile encountered at the site was generally brown to grey-brown silty sandy gravels and sand fill. Inclusions of igneous gravel, concrete and charcoal were also observed, however no odours, staining or asbestos containing material (ACM) were observed.

Concentrations of contaminants were below the laboratory limit of reporting (LOR) and within the site criteria for all soil samples analysed. Chrysotile asbestos fibres were detected at sample location HA03, however these were not above the LOR of 0.1g/kg and no respirable fibres were detected in any of other soil samples selected for asbestos. Based on this result, asbestos impacts were identified to be restricted to the site's surface (<0.2 mbgs) at HA03.

It was recommended that a remedial action plan (RAP) be developed to address identified impacts in order to make the site suitable for residential land use.

3.2 Remedial Action Plan – JBS&G 2013b

A part of rezoning the site for R3 Medium Density Residential under the Willoughby Local Environmental Plan 2012, a RAP was developed to document the procedures and standards to be followed to remove unacceptable risks posed by impacted soils.

Friable asbestos was previously identified in the north-eastern portion of the site at HA03. Minor remediation and validation works were required to make the site suitable for residential land use. This includes the excavation and off-site disposal of asbestos impacted soils, and validation against criteria for standard residential use with gardens and accessible soils. Following disposal of excavated soils, imported VENM material was to be used to make up volumes of excavated material.

3.3 Validation Report – JBS&G 2013c

The objectives of the validation works were to verify removal of unacceptable risks to human health and the environment relevant to the proposed rezoning of the site, validate the works in accordance with NSW EPA guidelines, transport impacted material to an appropriate waste facility, visually validate the excavated areas, collect validation samples and detail remediation and validation procedures and conclusions.

A remedial area of 6 m x 6 m x 0.2 m was excavated on-site. Fill material was observed to be grey to brown silty gravelly sand with inclusions of igneous gravels, concrete fragments, bricks and other building rubble. No odours, staining or ACM were observed during the excavation.

It was concluded that there were no risks to future on- or off-site receptors from any unacceptable contamination on site. No asbestos was found during analysis of samples and excavated material was disposed of at a suitably licensed waste facility.

4. Methodology

4.1 Detailed Site Inspection and Stockpile Sampling

A detailed site inspection was conducted 19 August 2015 by one of JBS&G's trained and experienced environmental scientists. A detailed inspection of the site was undertaken, followed by sampling of the stockpile identified. Three soil samples (1 x 250 mL jar plus 500 mL bag) were collected from the stockpile based on the minimum number of samples recommended for initial assessment of

stockpiles under 75 m³, outlined in Schedule B2 of NEPC 2013⁴. A new pair of nitrile gloves were used for the collected of each sample.

Collected samples were immediately transferred to laboratory supplied sample jars/zip lock bags which were then transferred to a chilled esky for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form was completed and forwarded with the samples to the testing laboratory. Selected soil samples were analysed for heavy metals, total petroleum hydrocarbons (TPH), benzene, toluene, ethyl benzene and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs), asbestos (500 mL consistent with NEPC 2013).

5. Laboratory Analysis

JBS&G contracted Eurofins | mgt Australia (Eurofins), NATA accredited for the analysis undertaken, at Lane Cove, NSW as the primary laboratory for the required analyses. In addition, the laboratory was required to meet JBS&G internal QA/QC requirements. Laboratory analysis of samples was conducted in accordance with **Table 4.1** below.

Table 4.1: Analytical Schedule

Location	Analysis (excludes QA/QC)
3 stockpile samples (3 samples required for stockpiles up to 75 m ³)	Heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) TPH/BTEX PAH OCPs/PCBs Asbestos

6. Assessment Criteria

Future zoning for the site was previously noted to be R3 Medium Density Residential. However, the majority of the stockpile is located on the site boundary and footpath to the east of the site along Willoughby Road. Therefore, stockpile samples were assessed against NEPC (2013) health-based investigation and screening levels (HILs and HSLs) for recreational land use and public open space, and ecological screening levels (ESLs) for urban residential land use and public open space. These are outlined below:

- HIL A – Residential with gardens and accessible soils.
- HSL A – Residential with gardens and accessible soils; and
- ESLs – urban residential and public open space.

7. Quality Assurance/Quality Control

For the limited number of samples collected during this investigation, duplicate and triplicate samples were not considered necessary. Laboratory duplicate samples, surrogate spikes, matrix spikes, laboratory control samples and laboratory blanks were within laboratory and JBS&G acceptance limits for quality assurance/quality control (QA/QC).

The results of the QA/QC analyses are considered to be of acceptable quality for the purpose of the assessment.

⁴ National Environmental Protection Measure 1999, Assessment of Site Contamination, amended 2013, (NEPC 2013)

8. Results

8.1 Observations

As detailed in Section 2.2, some dumped building material was observed at the south of the site including concrete, metal and recycling bins. No ACM was observed.

The stockpile was observed to be yellow to brown homogeneous sand. No odours, staining or ACM or other anthropogenic materials were observed within the stockpile.

8.2 Analytical Results

A table providing analytical results is presented in **Attachment 4**, and soil laboratory reports and chain of custody documentation are provided in **Attachment 5**. The results are discussed below.

Heavy Metals

All heavy metal concentrations in stockpiled soil samples collected were well below the adopted site criteria. Analytes observed above the limit of reporting (LOR) include cadmium, copper, lead, and zinc however these were within background concentrations.

PAHs

All PAH concentrations in the soil samples were below the LOR.

TPH/BTEX

All TPH/TRH and BTEX concentrations in the soil samples were below the LOR.

OCP/PCBs

All OCP and PCB concentrations in the soil samples were below the LOR.

Asbestos

No asbestos was detected at the reporting limit of 0.001% and no asbestos fibres were detected.

9. Conclusions

Based on the results discussed above, the limitations provided in **Attachment 1**, and the reliance letter provided in **Attachment 6**, the following conclusions are made with regards to potential contamination:

- Dumped building materials were present along the southern border of the site, however no visible ACM or other contamination indicators such as odours or staining were observed during the site inspection;
- Analyte concentrations in samples collected from the small sand stockpile to the east of the site, were all within the adopted site criteria;
- Based on previous investigations conducted at the site, there is no risk to future on- or off-site receptors from any fill contamination on site; and
- Review of the site and surrounding environment did not identify any additional environmental concerns that may affect the site use.

Based on the site history review, previous investigation findings, and the results presented above, it is considered unlikely that any widespread or gross contamination is present at the site. Therefore, additional contamination investigations or management actions are not considered necessary for the site in its current condition.

Should you require clarification, please contact Katie Linz on 02 8245 0300 or by email klinz@jbsg.com.au.

Yours sincerely:



Lauren Luedecke
Environmental Consultant
JBS&G Australia Pty Ltd

Reviewed/Approved by:



Matthew Bennett
Principal
JBS&G Australia Pty Ltd

Attachments:

- 1) Limitations
- 2) Figures
- 3) Photograph Log
- 4) Stockpile Analytical Results
- 5) Laboratory Reports and Chain of Custody Documentation
- 6) JBS&G Reliance Letter (Artarmon)

Attachment 1 – Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G.

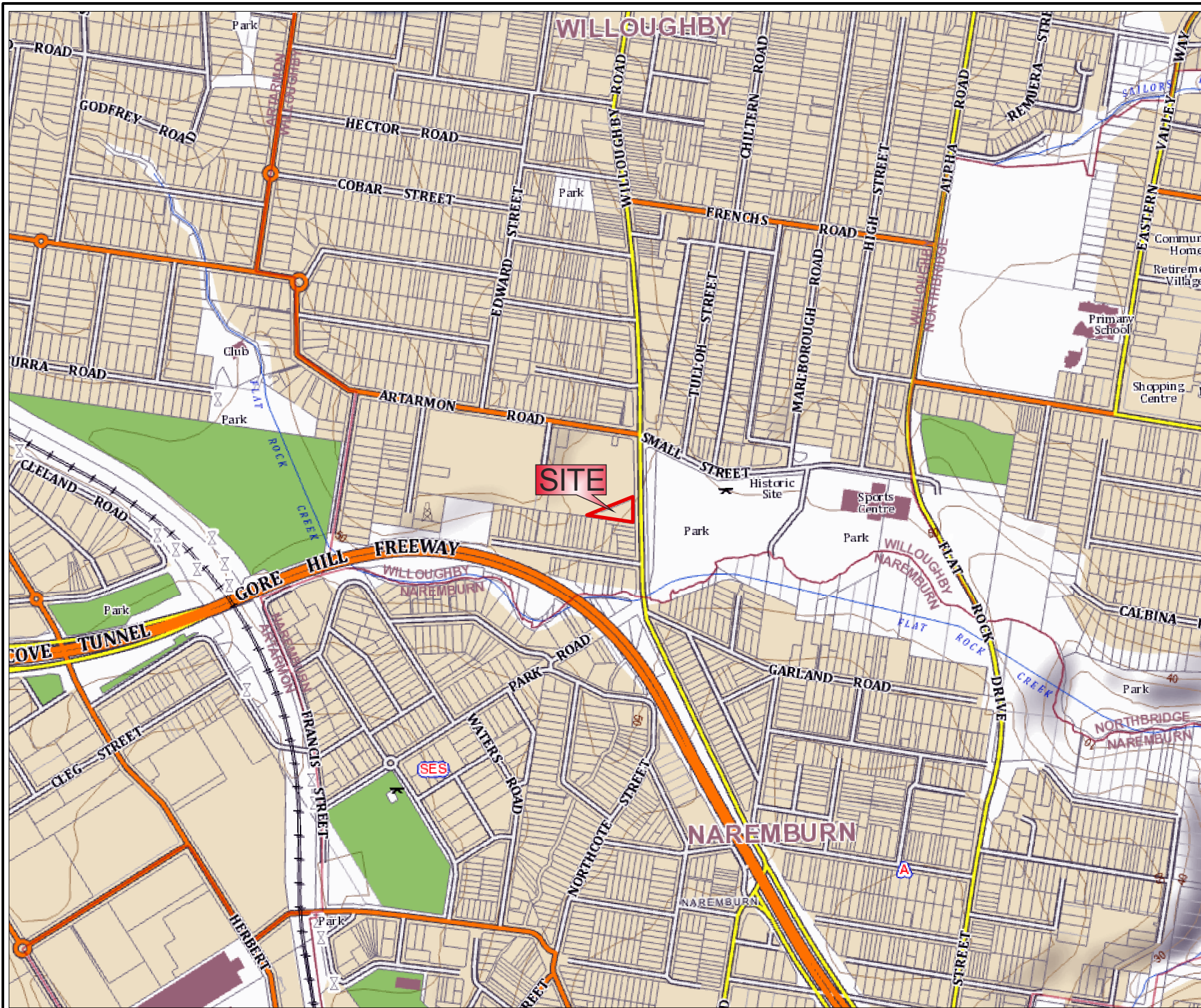
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Attachment 2 – Figures



Legend:

 Approximate Site Boundary



Job No: 50970

Client: Government Property

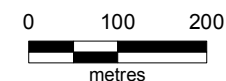
Version: L001

Date: 21-Aug-2015

Drawn By: SE

Checked By: LL

Scale 1:8,500

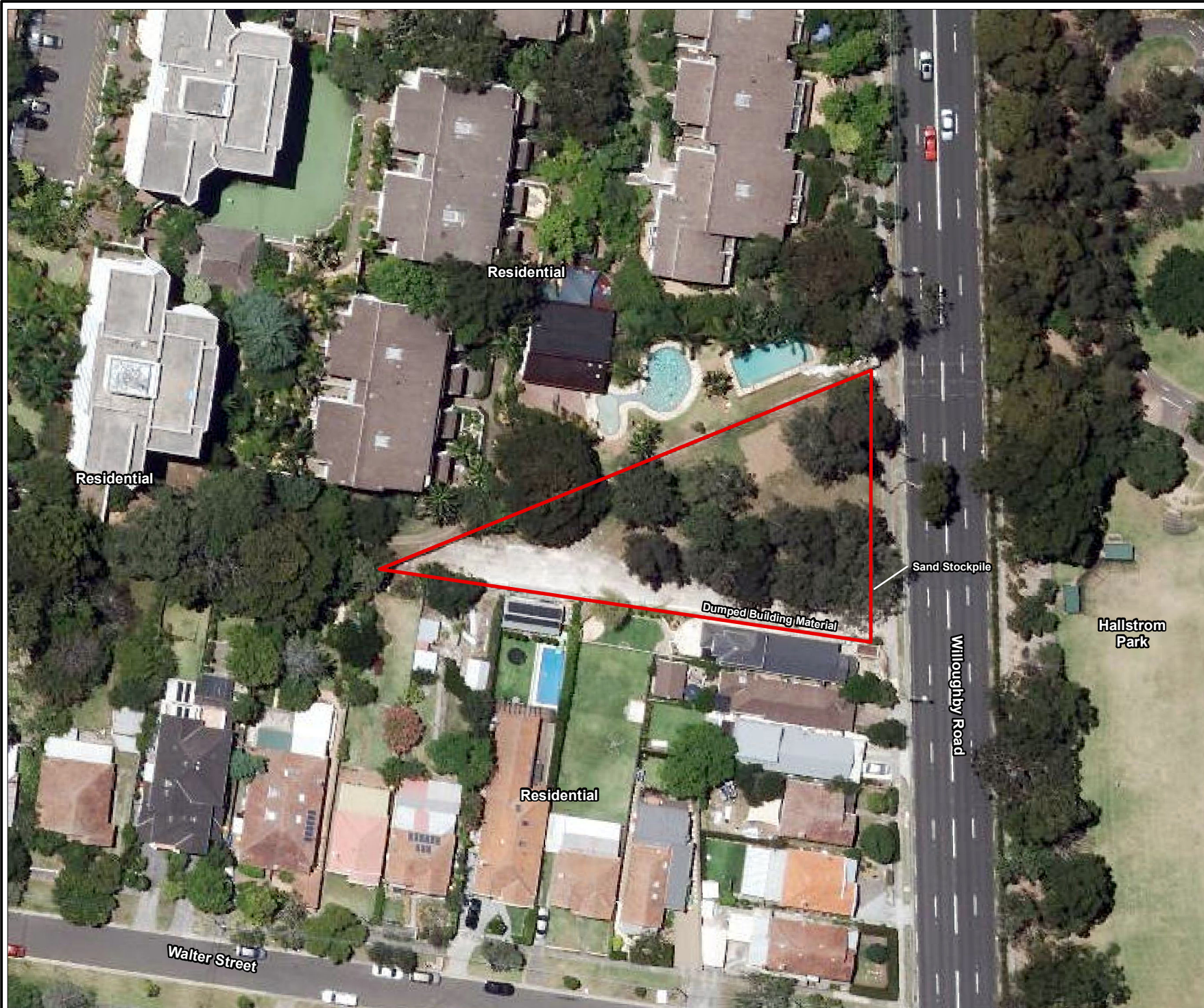


Coor. Sys. GDA 1994 MGA Zone 56

**Willoughby Road,
Willoughby, NSW**

SITE LOCATION

FIGURE 1



Legend:

Approximate Site Boundary



Job No: 50970

Client: Government Property

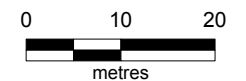
Version: L001

Date: 21-Aug-2015

Drawn By: SE

Checked By: LL

Scale 1:800



Coor. Sys. GDA 1994 MGA Zone 56

**Willoughby Road,
Willoughby, NSW**

SITE LAYOUT

FIGURE 2

Attachment 3 – Photographic Log



View from Willoughby Road, including sand stockpile



Building rubble on southern border of site



Building rubble on southern border of site



View looking to west



View looking to east



Sand stockpile on eastern border of the site

© JBS&G

Source:			
JBS&G Site Inspection			
A0	Original Issue - R01	LL	21/08/2015
Rev	Description	Drn.	Date

Attachment 4 – Stockpile Analytical Results



	Asbestos							Asbestos - Trace Analysis					Other
	Asbestos from ACM in soil	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos from FA & AF in soil	ACM - Comment	FA - Comment	AF - Comment	Organic Fibres - Comment	Respirable Fibres - Comment	% Moisture 103oC
	%w/w	g	g	g	g	g	%w/w	Comment	Comment	Comment	Comment	Comment	%
EQL													0.10
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil													
NEPM 2013 Soil HIL A													
NEPM 2013 Soil HSL A for Vapour Intrusion - Sand 0 to <1m													

Field ID	Sample Date	Lab Report Number													
SP1_01	19/08/2015	469247	0	0	0	0	0	0	0	1	1	1	1	1	2.6
SP1_02	19/08/2015	469247	0	0	0	0	0	0	0	1	1	1	1	1	2.9
SP1_03	19/08/2015	469247	0	0	0	0	0	0	0	1	1	1	1	1	2.9

Attachment 5 – Laboratory Reports and Chain of Custody Documentation

Certificate of Analysis

JBS & G Australia (NSW & WA) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000



NATA Accredited
Accreditation Number 1261
Site Number 1254

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.

Attention: Katie Linz

Report 469247-S
Project name WILLOUGHBY RD ARTARMON REVIEW
Project ID 50971
Received Date Aug 21, 2015

Client Sample ID			SP1_01	SP1_02	SP1_03
Sample Matrix			Soil	Soil	Soil
Eurofins mgt Sample No.			S15-Au15160	S15-Au15161	S15-Au15162
Date Sampled			Aug 19, 2015	Aug 19, 2015	Aug 19, 2015
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	20	mg/kg	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50
BTEX					
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	76	74	74
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50
Polycyclic Aromatic Hydrocarbons					
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5

Client Sample ID			SP1_01	SP1_02	SP1_03
Sample Matrix			Soil	Soil	Soil
Eurofins mgt Sample No.			S15-Au15160	S15-Au15161	S15-Au15162
Date Sampled			Aug 19, 2015	Aug 19, 2015	Aug 19, 2015
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	126	117	106
p-Terphenyl-d14 (surr.)	1	%	122	113	103
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	< 0.05	< 0.05
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
Dibutylchloroendate (surr.)	1	%	100	96	94
Tetrachloro-m-xylene (surr.)	1	%	106	94	97
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Dibutylchloroendate (surr.)	1	%	100	96	94
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100
Heavy Metals					
Arsenic	2	mg/kg	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	0.5
Chromium	5	mg/kg	< 5	< 5	< 5
Copper	5	mg/kg	7.4	8.9	7.8
Lead	5	mg/kg	16	18	16

Client Sample ID			SP1_01	SP1_02	SP1_03
Sample Matrix			Soil	Soil	Soil
Eurofins mgt Sample No.			S15-Au15160	S15-Au15161	S15-Au15162
Date Sampled			Aug 19, 2015	Aug 19, 2015	Aug 19, 2015
Test/Reference	LOR	Unit			
Heavy Metals					
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5
Zinc	5	mg/kg	32	53	45
% Moisture	0.1	%	2.6	2.9	2.9

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
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: TRH C6-C36 - LTM-ORG-2010	Sydney	Aug 24, 2015	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Aug 24, 2015	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Aug 24, 2015	14 Day
BTEX - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Aug 24, 2015	14 Day
Polycyclic Aromatic Hydrocarbons - Method: E007 Polyaromatic Hydrocarbons (PAH)	Sydney	Aug 24, 2015	14 Day
Organochlorine Pesticides - Method: E013 Organochlorine Pesticides (OC)	Sydney	Aug 24, 2015	14 Day
Polychlorinated Biphenyls (PCB) - Method: E013 Polychlorinated Biphenyls (PCB)	Sydney	Aug 24, 2015	28 Day
Metals M8 - Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS	Sydney	Aug 25, 2015	28 Day
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Aug 24, 2015	14 Day

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000
Project Name: WILLOUGHBY RD ARTARMON REVIEW
Project ID: 50971

Order No.:
Report #: 469247
Phone: 02 8245 0300
Fax:

Received: Aug 21, 2015 11:30 AM
Due: Aug 26, 2015
Priority: 5 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos - WA guidelines	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site # 1254 & 14271												
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794												
External Laboratory												
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
SP1_01	Aug 19, 2015		Soil	S15-Au15160	X	X	X	X	X	X	X	X
SP1_02	Aug 19, 2015		Soil	S15-Au15161	X	X	X	X	X	X	X	X
SP1_03	Aug 19, 2015		Soil	S15-Au15162	X	X	X	X	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								
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	
Nickel			mg/kg	< 5		5	Pass	
Zinc			mg/kg	< 5		5	Pass	
LCS - % Recovery								
Heavy Metals								
Arsenic			%	94		70-130	Pass	
Cadmium			%	101		70-130	Pass	
Chromium			%	97		70-130	Pass	
Copper			%	102		70-130	Pass	
Lead			%	101		70-130	Pass	
Nickel			%	94		70-130	Pass	
Zinc			%	93		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	S15-Au15162	CP	%	109		70-130	Pass	
Acenaphthylene	S15-Au15162	CP	%	106		70-130	Pass	
Anthracene	S15-Au15162	CP	%	109		70-130	Pass	
Benz(a)anthracene	S15-Au15162	CP	%	118		70-130	Pass	
Benzo(a)pyrene	S15-Au15162	CP	%	83		70-130	Pass	
Benzo(b&j)fluoranthene	S15-Au15162	CP	%	84		70-130	Pass	
Benzo(g,h,i)perylene	S15-Au15162	CP	%	106		70-130	Pass	
Benzo(k)fluoranthene	S15-Au15162	CP	%	86		70-130	Pass	
Chrysene	S15-Au15162	CP	%	96		70-130	Pass	
Dibenz(a,h)anthracene	S15-Au15162	CP	%	103		70-130	Pass	
Fluoranthene	S15-Au15162	CP	%	126		70-130	Pass	
Fluorene	S15-Au15162	CP	%	110		70-130	Pass	
Indeno(1,2,3-cd)pyrene	S15-Au15162	CP	%	106		70-130	Pass	
Naphthalene	S15-Au15162	CP	%	104		70-130	Pass	
Phenanthrene	S15-Au15162	CP	%	110		70-130	Pass	
Pyrene	S15-Au15162	CP	%	127		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic	S15-Au15162	CP	%	99		70-130	Pass	
Cadmium	S15-Au15162	CP	%	95		70-130	Pass	
Chromium	S15-Au15162	CP	%	91		70-130	Pass	
Copper	S15-Au15162	CP	%	98		70-130	Pass	
Lead	S15-Au15162	CP	%	93		70-130	Pass	
Mercury	S15-Au15162	CP	%	72		70-130	Pass	
Nickel	S15-Au15162	CP	%	89		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S15-Au14627	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S15-Au14052	NCP	mg/kg	40	37	10	30%	Pass	
TRH C15-C28	S15-Au14052	NCP	mg/kg	78	81	4.0	30%	Pass	
TRH C29-C36	S15-Au14052	NCP	mg/kg	240	260	10	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S15-Au14627	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S15-Au14627	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S15-Au14627	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S15-Au14627	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S15-Au14627	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S15-Au14627	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S15-Au16333	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4,4'-DDD	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDE	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDT	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S15-Au16333	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S15-Au16333	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S15-Au16333	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S15-Au16333	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S15-Au16333	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S15-Au16333	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S15-Au16333	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S15-Au16333	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S15-Au16333	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S15-Au14052	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S15-JI23361	NCP	%	16	17	10	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S15-Au15161	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S15-Au15161	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S15-Au15161	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S15-Au15161	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S15-Au15161	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S15-Au15161	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S15-Au15161	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S15-Au15161	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S15-Au15161	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S15-Au15161	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S15-Au15161	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S15-Au15161	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S15-Au15161	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S15-Au15161	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S15-Au15161	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S15-Au15161	CP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	S15-Au15161	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S15-Au15161	CP	mg/kg	< 5	5.4	19	30%	Pass
Copper	S15-Au15161	CP	mg/kg	8.9	9.0	1.0	30%	Pass
Lead	S15-Au15161	CP	mg/kg	18	17	5.0	30%	Pass
Mercury	S15-Au15161	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Nickel	S15-Au15161	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	S15-Au15161	CP	mg/kg	53	45	16	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
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
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

Authorised By

Charl Du Preez	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)
Ryan Hamilton	Senior Analyst-Volatile (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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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.

JBS & G Australia (NSW & WA) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: Katie Linz
Report 469247-AID
Project Name WILLOUGHBY RD ARTARMON REVIEW
Project ID 50971
Received Date Aug 21, 2015
Date Reported Aug 26, 2015

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 WILLOUGHBY RD ARTARMON REVIEW
Project ID 50971
Date Sampled Aug 19, 2015
Report 469247-AID

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
SP1_01	15-Au15160	Aug 19, 2015	Approximate Sample 775g Sample consisted of: Brown coarse-grained sandy soil	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
SP1_02	15-Au15161	Aug 19, 2015	Approximate Sample 688g Sample consisted of: Brown coarse-grained sandy soil	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}
SP1_03	15-Au15162	Aug 19, 2015	Approximate Sample 658g Sample consisted of: Brown coarse-grained sandy soil	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected. ^{M11}

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	Aug 26, 2015	Indefinite

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000
Project Name: WILLOUGHBY RD ARTARMON REVIEW
Project ID: 50971

Order No.:
Report #: 469247
Phone: 02 8245 0300
Fax:

Received: Aug 21, 2015 11:30 AM
Due: Aug 26, 2015
Priority: 5 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos - WA guidelines	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site # 1254 & 14271												
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794												
External Laboratory												
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
SP1_01	Aug 19, 2015		Soil	S15-Au15160	X	X	X	X	X	X	X	X
SP1_02	Aug 19, 2015		Soil	S15-Au15161	X	X	X	X	X	X	X	X
SP1_03	Aug 19, 2015		Soil	S15-Au15162	X	X	X	X	X	X	X	X

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. 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.

UNITS

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
COC	Chain of custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substantial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

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
M11	NATA accreditation does not cover the performance of this service.

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

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

03939

CHAIN OF CUSTODY

[illegible]

Sample Receipt Advice

Company name: **JBS & G Australia (NSW & WA) P/L**

Contact name: **Katie Linz**

Project name: **HOLD: WILLOUGHBY RD ARTARMON REVIEW**

Project ID: **50971**

COC number: **03939**

Turn around time: **5 Day**

Date/Time received: **Aug 19, 2015 5:40 PM**

Eurofins | mgt reference: **469247**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 6.6 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Charl Du Preez on Phone : +61 (2) 9900 8400 or by e.mail: charldupreez@eurofins.com.au

Results will be delivered electronically via e.mail to Katie Linz - klinz@jbsg.com.au.

Attachment 6 – JBS&G Reliance Letter (Artarmon)



21 September 2015

Dear Sirs,

**Lot 2, DP586037, Willoughby Road, Artarmon NSW –
Reliance Letter: Review of Contamination Status**

1 Introduction

- (a) In connection with the proposed sale (Sale) by Government Property NSW (**Vendor**) of Willoughby Road, Artarmon NSW also identified as Lot 2 in DP 586037 (**Property**), the Vendor requested JBS&G (**Consultant**), as its environmental consultant, to undertake a Review of Contamination Status (**Environmental Report**). The Addressee is the purchaser of the property who intends to acquire it from the Vendor.
- (b) As consultant to the Vendor and solely on the instruction of the Vendor, we consent to the provision of the Environmental Reports to the Addressee (as a purchaser of the property) on a reliance basis in accordance with the terms set out in this letter. All of the terms of the Environmental Report, are deemed to be incorporated by reference into this letter and form part of the terms agreed with the Addressee and apply to the Addressee in the same manner as they apply to the Vendor.
- (c) Where there is a conflict between the terms of this letter and those set out in the Environmental Report, the terms of this letter prevail.
- (d) The Addressee acknowledges that the information contained in and the conclusions of the Environmental Report apply only to the designated property as it existed at the time of the work undertaken by the Consultant in accordance with the applicable guidelines at that time. The Addressee also acknowledges that the Reports (and the information, comments, conclusions and opinions contained in them) are strictly limited to the matters stated in them and do not extend by implication to any other matter.
- (e) No other party may rely on the Environmental Report without our prior written consent.
- (f) The only purpose for which the Addressee may use the Environmental Report is in connection with its purchase of the property and the purchaser is not entitled to put the report to any other use or purpose.

2 Acceptance

- (a) We will only provide the Addressee with a copy of the Reports strictly on the understanding and condition that the Addressee acknowledges reading and understanding, and accepts, the terms of this letter by providing us with a signed copy of this letter. However, any retention of, and any review of, the Environmental Reports by the Addressee will constitute deemed acceptance of the terms of this letter and the terms of our engagement with the Vendor.

3 Confidentiality and non-disclosure

- (a) There are matters referred to in the Reports which are confidential to the Vendor. The Addressee undertakes that it will not replicate, reproduce, refer to, or quote from the whole or any part of the Reports in any way, including in any prospectus, registration statement, offering circular, public filing, loan or other agreement or document without our prior written consent (which we may withhold in our absolute discretion).
- (b) This letter and the Environmental Report are confidential and must not be disclosed to any third party without our prior written consent and the Vendor's prior written consent, with the exception of:
 - (i) the provision of the Environmental Report to those of the Addressee's directors, officers, employees, affiliates, rating agencies and professional advisers who reasonably require it and who must be informed by the Addressee of the confidential nature of the Reports and the terms of this letter and agree to observe those terms (each a **Specified Person**); or
 - (ii) disclosure required by law.

4 No waiver of legal professional privilege

- (a) The Addressee acknowledges and agrees that:
 - (i) the Vendor may be entitled to claim legal professional privilege with respect to some or all of the information contained or referred to in the Environmental Report;
 - (ii) disclosure of the Environmental Report to the Addressee (and any Specified Person), does not constitute a waiver by the Vendor of any of its rights to legal professional privilege;
 - (iii) the parties intend that any rights and obligations conferred through legal professional privilege remain intact should any person become subject to any actual or threatened proceedings in relation to any of the information contained or referred to in the Environmental Report; and
 - (iv) it will not claim or contend, in proceedings involving either the Addressee or the Vendor, that the Vendor waived the protections of the legal professional privilege as a result of the disclosure of the Reports to the Addressee.

5 General

- (a) This letter may be signed in counterparts and all counterparts taken together constitute one document.
- (b) The Addressee is not permitted to charge, declare a trust in respect of or transfer any rights or obligations arising out of or in connection with this letter.
- (c) Capitalised words not defined in this letter have the same meaning given in the consultancy agreement between the Vendor and the Consultant.

6 Governing law and jurisdiction

- (a) This letter is governed by and must be construed in accordance with the law of New South Wales.

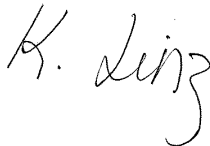
The courts of New South Wales have exclusive jurisdiction to hear and decide any suit, action or proceeding, and to settle any disputes, which may arise in connection with this letter or the Environmental Report and, for these purposes, the Addressee agrees to submit to the jurisdiction of the courts of New South Wales.

Please confirm your agreement to these terms by signing, dating and returning to us a copy of this letter.

Should you require clarification, please contact the undersigned on 02 8245 0300 or by email klinz@jbsg.com.au.

Yours faithfully,

Yours sincerely:



Katie Linz
Senior Environmental Consultant
JBS&G Australia Pty Ltd

Reviewed/Approved by:



Matthew Bennett
Principal
JBS&G Australia Pty Ltd

In consideration of and as a condition of the Addressee's receipt of and reliance on the Reports, the terms of this letter are acknowledged, accepted and agreed.

Signed for and on behalf of the Addressee referred to above.

By

Signature: _____

Print Name: _____

Capacity: _____

Date: _____