



Douglas Partners

Geotechnics | Environment | Groundwater

Report on
Hazardous Building Materials (HBM) Survey

DHL Stage 1
Part of 1953 - 2109 Elizabeth Drive
Badgerys Creek

Prepared for
DHL Supply Chain (Australia) Pty Limited

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Integrated Practical Solutions



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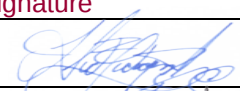
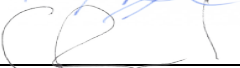
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The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

	Signature	Date
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Douglas Partners acknowledges Australia's First Peoples as the Traditional Owners of the Land and Sea on which we operate. We pay our respects to Elders past and present and to all Aboriginal and Torres Strait Islander peoples across the many communities in which we live, visit and work. We recognise and respect their ongoing cultural and spiritual connection to Country.



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Executive Summary

Douglas Partners Pty Ltd (DP) was engaged by DHL Supply Chain (Australia) Pty Limited (DHL) to document the findings of a Hazardous Building Materials (HBM) survey previously undertaken for the structures located at The Northern Gateway site Project 1953 - 2109 Elizabeth Drive, Badgerys Creek NSW ('TNG site – report reference 86548.07.R.001.Rev2) and of relevance to DHL Stage 1 ('the Site'), which encompasses the southern portion of the DHL Masterplan site.

Given that the site was occupied, the HBM survey comprised a non-destructive, non-intrusive visual inspection of safely accessible areas to assess the general location, extent, and condition of asbestos-containing materials (ACM) and other HBM. The survey was supplemented by a limited program of sample collection and laboratory analysis.

HBM were identified or assumed present during the survey as indicated in Table 1 below.

Table 1: Hazardous Building Materials (HBM) Risk Profile

Building/Area	Non-Friable Asbestos	Friable Asbestos	SMF	Lead Paint	Lead Dust	PCB
HS	✓	✗	✗	✓	✓	✗
GS	✗	✗	✓	✓	✓	✗

HS= House structure, GS= Garage structure, SMF = synthetic mineral fibre, PCB = polychlorinated biphenyls, ✓= identified and / or suspected present, ✗ = not identified and/or not suspected present. Refer to the HBM Register in Appendix B for details/clarification.

Limited or no access was available to certain areas of the buildings and/or the site (refer Section 5, Table 4 and Appendix B). Inaccessible areas should be assumed to potentially contain HBM unless assessment of these areas by a Competent Person confirms otherwise.

HBM are to be managed in accordance with the requirements of the NSW Work Health and Safety (WHS) Act 2011 (WHS Act), NSW WHS Regulation 2017 (WHS Regulation) and relevant Codes of Practice, Australian Standards, and guidelines.

HBM should be removed prior to any significant disturbance including from maintenance, refurbishment, and demolition work. Refer to Section 6 for further requirements relating to management and disposal of HBM.

Limitations apply to this HBM survey and report as outlined in Section 7.

This report should be read in its entirety and may not be reproduced other than in full, except with the prior written approval of DP.

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Report on Hazardous Building Materials (HBM) Survey

DHL Stage 1

Part of 1953 - 2109 Elizabeth Drive, Badgerys Creek

1. Introduction

Douglas Partners Pty Ltd (DP) was engaged by DHL Supply Chain (Australia) Pty Limited (DHL) to document the findings of a Hazardous Building Materials (HBM) survey previously undertaken for the structures located at The Northern Gateway site Project 1953 - 2109 Elizabeth Drive, Badgerys Creek NSW ('TNG site – report reference 86548.07.R.001.Rev2) and of relevance to DHL Stage 1 ('the Site'), which encompasses the southern portion of the DHL Masterplan site.

It is noted that the field works for the HBM survey covered the original broader site which has since been reduced in area following compulsory acquisition processes for Government transport projects. This HBM report will be submitted by DHL as part of the State Significant Development Application (SSD 70818708) for the SSDA 1 area (Stage 1), as shown in Drawing 1, Appendix A which shows the location of the TNG site, the wider DHL site and Stage 1 site.

At the time of reporting, the site (Stage 1: 11.9 ha in size) is proposed to be developed into two large scale warehouse facilities, dock offices, hardstand and car parking, and higher order employment land uses.

The HBM survey comprised a walkthrough visual inspection of safely accessible areas to assess the location, extent, and condition of the following HBM:

- Asbestos containing materials (ACM);
- Lead paint;
- Lead dust in ceiling cavities and other selected locations;
- Synthetic mineral fibre (SMF) insulation; and
- Polychlorinated biphenyls (PCBs) in fluorescent light fittings.

The survey was undertaken using non-destructive and non-intrusive inspection techniques and was supplemented by a limited program of sample collection and laboratory analysis.

The results of the survey, including details of the HBM identified and the results of ACM risk assessments, are provided in the HBM Register (the Register) in Appendix B. Selected photographs are contained in Appendix C, which was part of a wider investigation of buildings and farm structures scattered across the TGN site.

The laboratory analysis certificate for the samples collected and analysed is provided in Appendix D.

Limited or no access was available to certain areas as outlined in the Register and Section 5 of this report (including Table 4).

2. Site Description

The site is currently registered as part Lot 1 on Deposited Plan (D.P) 1306448 which includes Stage 1. The site is bordered to the south by the TNG site, followed by Elizabeth Drive; to the west by the TNG site, followed by Cosgroves Creek and Oaky Creek, to the north by DHL Stage 2 followed by the remainder of the TNG site and to the east by rural properties and vacant land followed by Badgerys Creek (Refer to Drawing 1 in Appendix A).

The site is a rectangular shaped parcel of land which is mostly grass-covered and used for pastoral and rural residential purposes. Two structures (GS and HS) are located within the site (Refer to Drawing 2 in Appendix A).

3. Survey Scope and Method

DP conducted a walkthrough visual inspection of safely accessible areas in the nominated buildings/structures (refer to Table 1 in the Executive Summary) to identify HBM. Given that the site was occupied, the inspection was undertaken using non-destructive, non-intrusive techniques and was supplemented by a limited program of sample collection and laboratory analysis.

Samples of suspected ACM were collected by DP using hand tools (e.g., knife or pliers) and analysed for asbestos by a National Association of Testing Authorities (NATA) accredited laboratory. Sample size is typically limited to minimise disturbance of the material and potential structural or aesthetic impacts. The samples were analysed by polarised light microscopy (PLM) with dispersion staining in accordance with AS4964-2004 *Method for the qualitative identification of asbestos in bulk samples*.

Selected, safely accessible paints were sampled by DP and analysed for lead (Pb) (% w/w) by a NATA accredited laboratory. Analysis was by Inductively Coupled Plasma - Atomic Emission Spectrometry/Mass Spectrometry (ICP-AES/MS) or other relevant method. Paint samples typically reflect the average lead content of the overall paint system/layer at the location sampled.

Lead dust samples were collected from ceiling/wall cavities or other internal areas found to contain potentially significant settled dust loadings. Samples were collected from a specified surface area (100 cm²) and submitted for laboratory analysis to assess lead content. Analysis was conducted by a NATA accredited laboratory using ICP-AES/MS or other relevant method. The sampling area and laboratory analysis result (total lead in µg) was used to calculate the lead dust loading which is expressed as milligrams of lead per square metre (mg/m²).

The sampling and analysis conducted comprises a screening assessment only and is not designed to delineate the extent of HBM or hazard areas.

SMF insulation was identified primarily by visual inspection or incidentally as a result of laboratory analysis for asbestos.

Light fittings were visually inspected to assess the likely presence of PCB containing components such as capacitors. Light fittings were not dismantled to confirm capacitor type and details due to height and/or electrical hazards.

Surveys typically proceed on a 'risk management' basis whereby priority is given to addressing material(s) of higher quantity and/or risk and as they are encountered. Further, material sampling and analysis programs are necessarily limited and in the case of similar or repetitive buildings, building elements and/or rooms/areas, it is often necessary to assume consistent use of construction materials including HBM.

4. Asbestos Risk Assessment Method

ACM poses a significant health risk if asbestos fibres are released to the atmosphere and inhaled. There is also a risk of environmental contamination whenever asbestos is disturbed. The degree of risk associated with any given ACM depends on a range of factors such as the friability, extent, condition, and location/accessibility of the material, the asbestos mineral type(s) present, the nature of site activities and ventilation.

The asbestos risk assessment method employed by DP considers several key factors that influence risk and a numerical score is assigned to each (refer Table 2 below). These scores are then combined to determine an overall risk rating for the ACM (refer Table 3 below). A degree of professional judgement may be applied when determining the final risk rating since, for example, it is not reasonably practicable to include in Table 2 all risk factors that may be relevant to a given situation.

Risk assessments for ACM should be reviewed on a regular basis including when:

- The Asbestos Management Plan is reviewed;
- Further asbestos or ACM is identified at the workplace;
- Asbestos is removed, disturbed, sealed, enclosed, or undergoes any other change in condition;
- There is evidence that the risk assessment is no longer valid;
- There is evidence that control methods are not effective; or
- A significant change is proposed for the workplace or for work practices or procedures relevant to the risk assessment.

An asbestos risk assessment review is to be conducted at least every 5 years. The review is to be performed by a Competent Person or a Licensed Asbestos Assessor (LAA).

Table 2: Key Risk Factors

Risk Factor	Score	Description
Friability	0	Non-Friable (fibre reinforced vinyls, bituminous materials, adhesives)
	1	Non-Friable (fibre reinforced cement products such as wall and roof sheeting)
	2	Semi-Friable (low density insulation board, millboard, ropes, paper, textiles, gaskets, or highly weathered asbestos cement)
	3	Friable (thermal insulation to pipes/boilers, sprayed insulation, loose fill insulation)
Condition	0	Very Good. Very little or no visible indication of damage. Structurally sound. No significant repairs required. Material performs as intended.
	1	Good - Minor damage in small, localised areas. Structurally sound. Minor preventative action may be required as a precaution and/or to prolong material life. Material generally performs as intended.
	2	Fair. Localised damage in various areas. Material is generally structurally sound however local removal and replacement of damaged sections may be required. Material performance may be somewhat impaired in areas.
	3	Poor. Material exhibits significant damage throughout. Overall structural stability may be compromised. Material performance is significantly impaired.
Treatment	0	Fully enclosed, encapsulated, or sealed. ACM is entirely contained, and the enclosure/encapsulation/sealing material is in good condition.
	1	Generally enclosed, encapsulated, or sealed. ACM is generally contained however enclosure/encapsulation/sealing material may not be completely continuous or exhibits minor damage/penetrations.
	2	Partially enclosed, encapsulated, or sealed. ACM is contained in area(s) however enclosure/encapsulation/sealing material is not present, significantly damaged, or ineffective in area(s).
	3	Enclosure/encapsulation/sealing material is significantly damaged and/or generally ineffective or there is no treatment.
Accessibility	0	The ACM is not directly accessible to occupants. Contact is highly unlikely unless a significant, dedicated effort is made. Substantial demolition, dismantling and/or special access equipment would be required.
	1	The ACM is generally not accessible to occupants. Contact is unlikely but could be made with special tools or equipment (e.g. elevating work platform) or minor demolition/dismantling.
	2	Some portion(s) of ACM are accessible to occupants. Direct contact may occur periodically but often requires basic tools/equipment (e.g. step ladder).
	3	The majority of the ACM is accessible to occupants. Direct contact is a common occurrence and may be made with minimal effort or unintentionally.
Activity	0	Area generally not occupied. Normally very little or no activity. Activities may be highly restricted, or the area secured. Examples may include subfloor voids, ceiling cavities, confined spaces, and other inaccessible areas.
	1	Low level occupancy. Some activity in parts or area only occupied periodically. Examples may include plant rooms and storerooms.
	2	Moderate level occupancy. Activity normally present throughout area. May include offices, laboratories, classrooms, workshops, and warehouses.
	3	High level occupancy. Generally high levels of activity. Activities may be wide-ranging and/or largely unrestricted. Examples may include production/manufacturing areas, construction sites and public areas/thoroughfares.
Ventilation	0	Exterior area where natural ventilation and associated dilution is largely unlimited. Significant retention and/or build-up of airborne contaminants is unlikely.
	1	Interior area. Natural ventilation and dilution are limited but area is not particularly confined. Limited retention and/or build-up of airborne contaminants is possible.
	2	Confined areas where ventilation and associated dilution is significantly limited. Significant retention and/or build-up of airborne contaminants is possible or likely.
	3	Asbestos material subject to direct ventilation (e.g. inside an AC system or near a fan or air exhaust) which may result in disturbance and/or elevated fibre concentrations in air.

Table 3: Risk Rating

Overall Score	Risk Rating	Description
15-18	High (H)	The ACM poses an elevated and typically unacceptable risk of exposure and/or environmental contamination. Controls should generally be implemented as soon as possible to address the risk. Removal of the whole or part of the ACM is typically required. Other controls such as enclosure, encapsulation and/or sealing may also be necessary if portion(s) of ACM are to remain in place. As an interim measure, access to the area should be appropriately restricted. Air monitoring is often recommended to confirm airborne asbestos concentrations and provide a written record for future reference.
10-14	Moderate (M)	The ACM poses a moderate risk of exposure and/or environmental contamination. Often there has been minor damage or there is potential for disturbance/degradation in the foreseeable future. Consideration should be given to implementing appropriate controls in the short to medium term to address the risk(s) and/or prolong the lifespan of the material. Relevant controls typically include enclosure, encapsulation and/or sealing. Extensive removal is generally not required, and the material can generally be managed on site if desired and serving a useful purpose.
0-9	Low (L)	The risk of exposure and environmental contamination is generally low while the material remains undisturbed and in its present condition. The material may generally remain in place without the requirement for significant, material-specific control measures such as removal, enclosure, encapsulation or sealing.

Note: If the ACM is likely to be disturbed (e.g., by maintenance, refurbishment, or demolition work) and/or is no longer serving a useful purpose then the ACM should generally be removed. All ACM should be clearly identified with a label/signage where reasonably practicable.

5. Results

The overall results of the survey are summarised in Table 1 in the Executive Summary of this report. Further details of the HBM identified at the Site, including the results of asbestos risk assessments, are provided in the Register in Appendix B.

Limited or no access was available to certain areas as outlined below (including Table 4) and in Appendix B.

Table 4: Access Limitations*

Location/Area	Access Type	Reason(s)
Exterior west, 'high voltage' compound	Nil	Area secured (bordering operating services area).
Areas/materials at height (e.g., upper walls and roofs)	Limited	Access limited to safely accessible areas and use of 1.8 m step ladder. Work at height and use of specialised access equipment not included in survey scope.
Confined spaces (e.g. interior of tanks)	Nil	Not included in survey scope.
Ceiling cavities	Limited	Access limited to safely accessible areas (manholes) and use of 1.8 m step ladder. Work at height and use of specialised access equipment not included in survey scope.
Subfloor voids	Nil	None identified.
Below floor covering materials	Not applicable	None identified.
Below ceramic tiled surfaces (e.g., walls and floors in wet areas)	Not applicable	None identified.
Enclosed building cavities and voids (e.g., wall voids, service risers) and internals of building plant	Nil	None identified.
Light fittings, internal components	Nil	Safe access precluded by electrical hazard and height.
Other potentially energised plant, equipment, and services (e.g., electrical panels).	Limited	Full access requires certified isolation and de-energisation by a qualified/licensed technician or similar. Isolation and dismantling not included in survey scope.
Subsurface areas including building footings and contamination in soil/fill	Nil	Not included in survey scope.

* Refer also to the Register (Appendix B).

6. Recommendations

A summary note and/or recommendation for each HBM identified or suspected present at the site is provided in the Register (Appendix B).

The general recommendations in Section 6.1 onwards are provided for informative purposes and should be considered where the relevant HBM has been identified, is recorded by DP as suspected/potentially present, or is subsequently suspected or found to be present based on reasonable grounds.

The potential presence of any as-yet undetected HBM should be considered during the risk assessment for any proposed work at the site or site use. In particular:

- Consideration should be given to further targeted destructive and intrusive assessment of any areas that were not accessed, and areas where access was limited prior to demolition; and
- If suspected/assumed HBM have not been sampled and analysed then confirmatory sampling and analysis should be considered, and undertaken where necessary, prior to their disturbance.

6.1 General

HBM should be managed in accordance with the requirements of the WHS Act, WHS Regulation and subordinate Codes of Practice, Australian Standards, and guidelines.

HBM should be visually inspected on a regular basis. Any change to the condition of the material or relevant site conditions should be reported.

HBM should be removed prior to any significant disturbance such as maintenance, refurbishment, and demolition work.

A HBM management plan, and scope of work specification for any planned abatement, should be developed to aid compliance with the requirements of the WHS Act and Regulation including those that relate to the identification of hazards and control of associated risks.

HBM abatement work should be appropriately monitored to help ensure quality and compliance.

An appropriate level of stakeholder consultation and communication should be undertaken at all times to help ensure that all relevant operational and project risks are adequately controlled.

The scope, fees, and terms/conditions applicable to any HBM work, including abatement, should be carefully assessed by a suitably qualified, experienced and Competent Person to help ensure that associated costs remain within reasonable limits. Such assessment should include consideration of the fees that may apply to the management and control of any unexpected or additional finds.

Prior to any work involving HBM a risk assessment should be conducted, and Safe Work Method Statement (SWMS) developed. The SWMS should outline the controls necessary to ensure that the risks of exposure and environmental contamination are adequately controlled.

HBM remediation and removal work should be undertaken in controlled conditions.

Wastes should be assessed and classified for disposal in accordance with relevant legislation and EPA (2014).

At the completion of HBM abatement and/or removal work a clearance inspection must be conducted by a Competent Person, or in the case of friable asbestos, by a Licensed Asbestos Assessor.

6.2 Asbestos-Containing Material (ACM)

Asbestos and ACM must be managed in accordance the WHS Regulation, the SafeWork NSW *Code of Practice: How to Manage and Control Asbestos in the Workplace* and the SafeWork NSW *Code of Practice: How to Safely Remove Asbestos*.

Exposure to airborne asbestos in the workplace must be eliminated to the extent that is reasonably practicable. If it is not reasonably practicable to eliminate exposure it must be minimised to the extent that is reasonably practicable.

The presence and location of asbestos or ACM identified at a workplace must be clearly indicated by a label if it is reasonably practicable to do so.

Warning labels and signs should be consistent with the examples provided in the SafeWork NSW *Code of Practice: How to Manage and Control Asbestos in the Workplace* and comply with AS1319 *Safety Signs for the Occupational Environment*.

Non-friable ACM that are structurally intact and in good to fair condition may typically remain in place provided that they are not significantly disturbed.

Tools and equipment that generate dust must generally not be used on asbestos or ACM. These include high-speed abrasive power and pneumatic tools (e.g.: angle grinders, sanders, saws and high-speed drills, brooms, and brushes).

Tools and equipment that cause the release of asbestos, including power tools and brooms, may only be used on asbestos if the equipment is enclosed and/or designed to capture or suppress asbestos fibers and/or the equipment is used in a way that is designed to capture or suppress asbestos fibers safely. In such a case, other controls including PPE may also be required based upon the results of a pre-work risk assessment and the SWMS adopted.

The use of high-pressure water spray and compressed air on asbestos or ACM is specifically prohibited under the WHS Regulation.

If ACM become damaged they should be repaired or removed and replaced with an alternative, non-asbestos building product as soon as possible.

The scope of asbestos removal work should be outlined in a technical specification (i.e., Scope of Work Report) developed by a Competent Person (in the case of non-friable asbestos) or a Licensed Asbestos Assessor (in the case of friable asbestos).

Removal of friable asbestos must only be undertaken by a Class A licensed asbestos removalist. Removal of 10 m² or more of non-friable asbestos must only be undertaken by a Class A or Class B licensed asbestos removalist.

Air monitoring, including background, control, and clearance monitoring, is a mandatory requirement during removal of friable asbestos. Air monitoring should also be considered during removal of non-friable asbestos particularly if there is any concern regarding the effectiveness of the control measures employed or the potential for release of asbestos fibres outside the asbestos removal area.

Air monitoring must be undertaken in accordance with the National Occupational Health and Safety Commission (NOHSC) *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd Edition* [NOHSC:3003(2005)].

All air monitoring samples must be analysed by a NATA accredited laboratory that holds accreditation for the required analysis.

At the completion of licensed asbestos removal work, a clearance inspection must be conducted by a Licensed Asbestos Assessor (in the case of friable or non-friable asbestos removal) or a Competent Person (in the case of non-friable asbestos removal only).

Air monitoring and clearance inspections must be performed by person/s independent of the licensed asbestos removalist.

All waste should be classified for disposal in accordance with relevant legislation and EPA (2014). Asbestos waste, including soil contaminated with asbestos, is pre-classified as Special Waste under these guidelines.

Asbestos transporters and facilities receiving asbestos waste must report the movement of asbestos waste to the EPA. Entities involved with the transport or disposal of asbestos waste in NSW, or arranging the transport of asbestos waste in NSW, must use the EPA's online tool, WasteLocate.

All asbestos waste must be disposed at a waste collection facility licensed to receive asbestos waste. All disposal receipts should be retained.

A person who relinquishes management or control of the workplace must ensure that the Asbestos Register is given to the person, if any, assuming management or control of the workplace.

6.3 Synthetic Mineral Fibre (SMF)

SMF insulation materials may generally remain in place providing that they are in good condition and unlikely to be disturbed.

To reduce the potential for disturbance, exposure, and environmental contamination SMF insulation materials may be encapsulated or enclosed. Higher risk materials, such as loose fill insulation, may also be removed and replaced if necessary.

SMF work is to be undertaken in accordance with the requirements of the WHS Regulation and subordinate Codes of Practice, Guidance Notes, and other documents. These include:

- SafeWork NSW *Safe management of synthetic mineral fibres (SMF) - glasswool and rockwool*;
- Safe Work Australia *Guide to Handling Refractory Ceramic Fibres, December 2013*; and
- Guidance Note on the Membrane Filter Method for the Estimation of Airborne Synthetic Mineral Fibres [NOHSC:3006(1989)].

Reference should also be made to the Australian Institute of Occupational Hygienists (AIOH) *Synthetic Mineral Fibres (SMF) And Occupational Health Issues, Position Paper*, October 2011 (reformatted January 2018 or as otherwise revised/updated) for guidance and information.

Where reasonable concern exists over possible respirable fibre concentrations in any application, the first step is often to confirm that the work practices, as recommended for the particular product, are being followed. Air monitoring may not be required when it has been clearly established that appropriate work practices are being carried out.

Notwithstanding the above, exposures to airborne SMF should not exceed the relevant Safe Work Australia (SWA) exposure standards outlined in Table 5.

Table 5: SWA Exposure Standards for SMF

Standard Name	Time Weighted Average (TWA) Exposure Standard
Glass wool, rock (stone) wool, slag wool and continuous glass filament and low biopersistence Man Made Vitreous Fibres (MMVF)	2 mg/m ³ (inhalable dust)
Refractory ceramic fibres (RCF), special purpose glass fibres and high biopersistence MMVF	0.5 f/mL (respirable) 2 mg/m ³ (inhalable dust)

SMF waste should be disposed at a licensed waste collection facility. All disposal receipts should be retained.

6.4 Polychlorinated Biphenyls (PCBs)

Prior to any significant disturbance, such as demolition, refurbishment or maintenance works, fluorescent light fittings should be electrically isolated and inspected in detail for components (e.g., metal canister-type capacitors and ballasts, etc.) that may contain PCB's. Any components containing, or suspected to contain, PCB should be removed by a Competent Person.

PCB-containing components should be managed in accordance with the general requirements of the WHS Regulation and relevant environmental laws and guidelines including:

- Environmentally Hazardous Chemicals (EHC) Act 2008 and subordinate *Polychlorinated Biphenyl (PCB) Chemical Control Order 1997*; and
- *Polychlorinated Biphenyls Management Plan, Revised Edition, April 2003*, issued by the Environment Protection and Heritage Council (EPHC).

Any PCB-containing components that exhibit leakage should be removed and replaced by a Competent Person as soon as possible. Access to areas containing leaking components should be suitably restricted.

The conveyance and disposal of PCB material and PCB waste must be undertaken in accordance with the requirements outlined in the *Polychlorinated Biphenyl (PCB) Chemical Control Order 1997*.

All disposal receipts should be retained.

6.5 Lead Paints

The identified and potential presence of lead paint(s) at the site should be considered during the risk assessment for any proposed works.

Lead paints should be managed in accordance with the WHS Regulation (including Chapter 7, Part 7.2 Lead) and:

- AS4361.1 - 2017, *Guide to hazardous paint management - Lead and other hazardous metallic pigments in industrial applications*; and
- AS4361.2 - 2017, *Guide to hazardous paint management - Lead paint in residential, public and commercial buildings*.

Additional, targeted sampling and analysis of paints should be considered prior to any work that may result in significant disturbance of paint system(s).

Generally, when one or more tests from a building or portion of a building indicate that lead is present, the paint should be treated as lead paint. Further, a project should not be classified as free of lead unless all samples within the relevant area/building are proven to be free of lead and the sampling is comprehensive.

Lead paint that is in sound condition, not directly accessible (e.g., over-painted with non-hazardous paint) and unlikely to be disturbed may not require any immediate action.

Area(s) of lead paint that are in poor condition (e.g., flaking, delaminating) should generally be removed along with any associated paint debris and dust.

Exposed area(s) of lead paint that are intact may be stabilised by over-painting with a non-hazardous paint, or by covering with a suitable encapsulant. Stabilisation can provide an interim to long-term solution.

The lead paint removal method and control measures adopted should be determined by risk assessment and a detailed knowledge of the workplace and proposed use/activities.

Exposure to airborne contaminants associated with paints must be maintained below the relevant SWA exposure standards. The SWA 8-hour Time Weighted Average (TWA) exposure standard for lead (inorganic dusts and fumes) is 0.05 mg/m³. Other exposure standards apply for other substances.

Air monitoring may be required during lead paint remediation works based on risk assessment and the requirements to maintain airborne contaminant levels below the abovementioned exposure standards.

At the completion of lead paint abatement/removal, a clearance inspection should be conducted by a Competent Person. The Competent Person should determine the requirements for clearance including any air monitoring or sample analysis that may be required.

Lead paint waste should be assessed and classified for disposal in accordance with relevant legislation and EPA (2014).

Based on previous correspondence with the NSW EPA, DP understands that EPA (2014) does not consider AS4361.1 - 2017 or AS4361.2 - 2017 (including the definitions of lead/hazardous paints therein) for waste classification assessment. As such:

- These standards have no bearing on how waste is classified in NSW; and
- Waste classification should be carefully considered and an appropriate degree of liaison with the NSW EPA may be required to help ensure correct waste classification.

All disposal receipts should be retained.

6.6 Lead Dust

Laboratory analysis results for lead dust should only be taken as an approximate indication of site conditions since sampling is limited and the concentration of lead in dust may vary considerably between locations within the same general area.

No recognised Australian guidelines have been identified for the direct assessment of lead concentrations in settled dust. Notwithstanding this, the United States Environmental Protection Authority (US EPA) 40 CFR Part 745 *Lead; Identification of Dangerous Levels of Lead; Final Rule* identifies the following clearance standards following abatement:

- Floors - 40 $\mu\text{g}/\text{ft}^2$ ($\sim 0.43 \text{ mg}/\text{m}^2$) lead;
- Interior window sills - 250 $\mu\text{g}/\text{ft}^2$ ($\sim 2.7 \text{ mg}/\text{m}^2$) lead; and
- Window troughs - 400 $\mu\text{g}/\text{ft}^2$ ($\sim 4.3 \text{ mg}/\text{m}^2$) lead.

Further, the US EPA has proposed to lower the DLCL for floors to 10 $\mu\text{g}/\text{ft}^2$ ($\sim 0.1 \text{ mg}/\text{m}^2$) lead, and for interior window sills to 100 $\mu\text{g}/\text{ft}^2$ ($\sim 1.1 \text{ mg}/\text{m}^2$) lead, as outlined in 86 FR 983 – *Review of Dust-Lead Post Abatement Clearance Levels*.

The above acceptance limits may be used as a guide to assess lead concentrations in settled dust.

As a precaution, DP generally adopts a lead concentration of approximately 0.5 mg/m^2 to identify potentially hazardous conditions.

Where the concentration of lead in dust exceeds approximately 0.5 mg/m^2 appropriate control and/or remedial measures may need to be identified via risk assessment and with a detailed knowledge of the workplace and proposed use/activities. A lower concentration may be warranted if / when the DLCL are reduced.

Where ceiling spaces and similar cavities are effectively enclosed and provide very limited or no opportunity for lead containing dust to enter occupied areas, the dust may typically remain in place. In such a case, access to the cavities should be suitably restricted and all entrances signposted with appropriate warning signs.

Any personnel required to enter building cavities or other areas containing elevated concentrations of lead in dust should undertake an appropriate risk assessment and develop a SWMS for the work. The SWMS must identify controls that ensure the risk of exposure to lead and environmental contamination remains at an acceptable level for the personnel entering the area and for occupants of the building and surrounds.

Consideration should be given to removal of lead containing dust including when:

- There is a significant risk of the lead entering occupied areas;
- Significant disturbance of lead dust is likely due to maintenance, refurbishment, demolition, or other reason(s); or
- Removal is a reasonably practical means of eliminating the hazard.

Removal of lead dust should be undertaken by a suitably qualified and experienced removalist.

The lead dust removal method and control measures adopted should be determined by risk assessment and a detailed knowledge of the workplace and proposed use/activities.

Exposure to airborne lead must be maintained below the relevant SWA exposure standards pertaining to lead. The SWA 8-hour TWA exposure standard for lead (inorganic dusts and fumes) is 0.05 mg/m³.

Air monitoring for lead may be required based on the results of risk assessment and the requirement to maintain airborne lead concentrations below the abovementioned exposure standard(s).

At the completion of lead dust removal, a clearance inspection should be conducted by a Competent Person. The Competent Person should determine the requirements for clearance including any air monitoring or sample analysis that may be required.

Lead waste should be assessed and classified for disposal in accordance with relevant legislation and EPA (2014).

All disposal receipts should be retained.

7. Limitations

Douglas Partners Pty Ltd (DP) has prepared this report for this project at 1953 - 2109 Elizabeth Drive, Badgerys Creek in accordance with DP's proposal 86548.08.P.001 dated 30 August 2021 and acceptance received from Lloyd Henderson dated 20 March 2023. The work was carried out under DP's Conditions of Engagement and DHL Supply Chain (Australia) Pty Limited Agreement. This report is provided for the exclusive use of DHL Supply Chain (Australia) Pty Limited for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

This report is provided for the exclusive use of DHL Supply Chain (Australia) Pty Limited for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the conditions on the site only at the specific inspection, sampling and/or testing locations, and then only to the extent practicable and safely accessible at the time the work was carried out. Site conditions may change after DP's field inspection, sampling and testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in conditions across the site between and beyond the inspection, sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome, or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Although the sampling plan adopted for this investigation is considered appropriate to achieve the stated project objectives, there are necessarily parts of the site that have not been inspected, sampled and/or tested. This is either due to undetected variations in conditions or to budget constraints (as discussed above), or to parts of the site being inaccessible or unavailable, or to occupants, furnishings or stored items preventing access. It is therefore considered possible that HBM, including asbestos, may be present in unobserved or untested parts of the Site, between and beyond the inspection, sampling, and testing locations, and hence no warranty can be given that all HBM have been identified.

Inspections are limited to areas that are safely accessible at the time of the inspection without undue damage to building finishes or disturbance of occupants. Inspections exclude hidden and inaccessible locations such as within building cavities, voids, and enclosed sections of risers/shafts as well as materials encased within the building structure or located below the exposed ground surface (e.g.: pipes, drains and formwork). In addition, residual asbestos materials (e.g.: asbestos lagging to pipes and vessels) may remain undiscovered below newer, asbestos-free materials (e.g.: preformed SMF insulation). Such residual asbestos materials may not be identified without extensive intrusive investigation and/or dismantling/demolition work if at all.

Any disturbance of building materials, such as during renovation, maintenance, or demolition work, may reveal additional HBM. In addition, there is potential that asbestos removal may result in debris/fragments cross contaminating site soils surrounding the affected structures.

Limitations apply to the laboratory analytical methods used. For example, it can be very difficult or impossible to detect the presence of asbestos in some bulk materials (e.g.: vinyl tiles) using the polarised light microscopy analytical method, even after ashing or disintegration of samples. This is due to the small length or diameter of asbestos fibres present in the material or attributed to the fact that very fine fibres have been dispersed individually throughout the material.

While work is undertaken in a professional manner the nature of HBM and the limitations of the method(s) used mean that we cannot guarantee that all HBM or issues of concern have been identified. This report should therefore not be considered a definitive account of all HBM that may be present at the Site.

DP personnel are not licenced or accredited quantity surveyors. Any quantities quoted in this report are provided for general guidance only and should not be relied upon. The services of a licenced quantity surveyor should be engaged in order to determine reliable quantities.

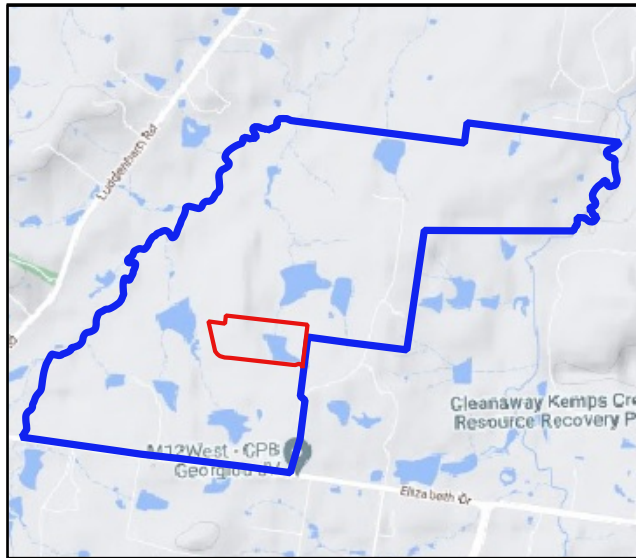
The recommendations and conclusions contained in this report shall not abrogate a person of their responsibility to work in accordance with statutory requirements, codes of practice, standards, guidelines, safety data sheets, work instructions or industry best practice.

The assessment of atypical safety hazards arising from this advice is restricted to the HBM components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed 'safety in design' assessment is outside the current scope of this report and requires additional project data and assessment.

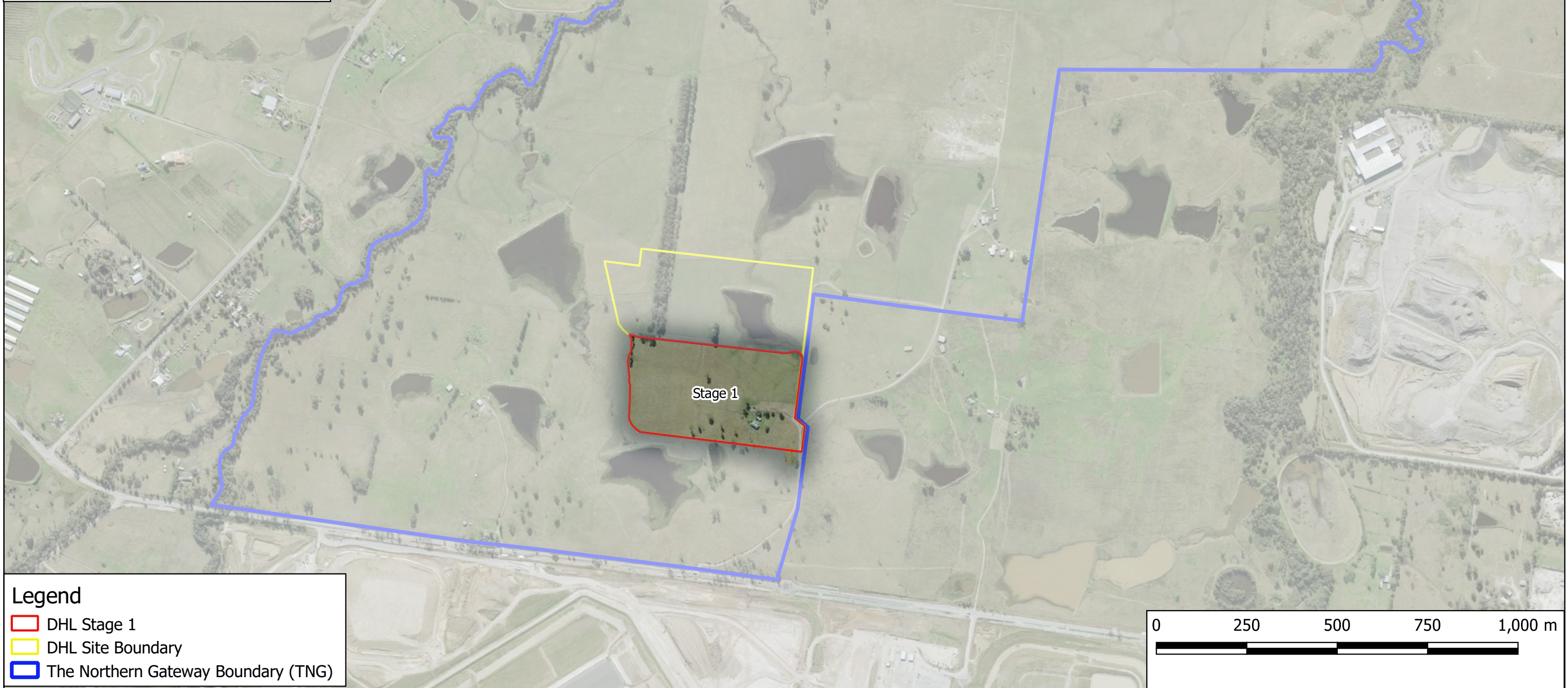
Douglas Partners Pty Ltd

Appendix A

Drawings 1 and 2

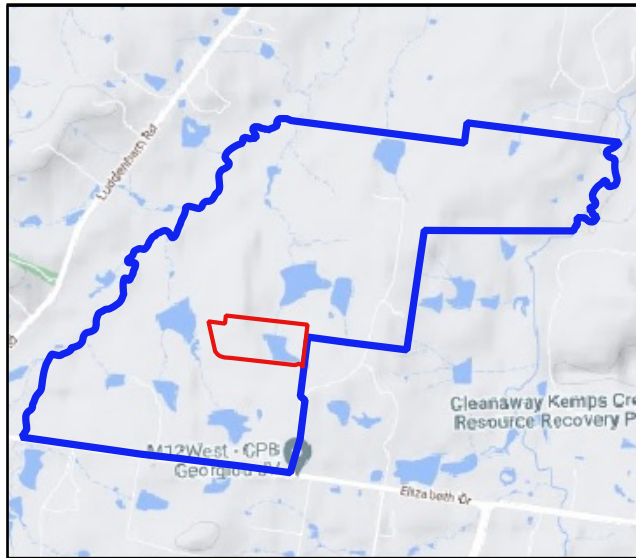


Site Locality



Legend

- DHL Stage 1
- DHL Site Boundary
- The Northern Gateway Boundary (TNG)

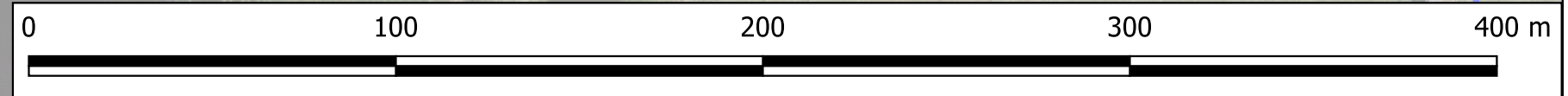


Site Locality



Legend

- DHL Stage 1
- DHL Site Boundary
- The Northern Gateway Boundary (TNG)
- ▲ Buildings Inspected



Appendix B

Hazardous Building Materials (HBM) Register

DP Project No: 86548.20
 Hazardous Building Materials (HBM) Register
 DHL Stage 1, 1953 - 2109 Elizabeth Drive, Badgerys Creek NSW

RESULTS - ASBESTOS

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Asbestos Risk Assessment								Photo No.	Summary Comment/Recommendation
						Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority		
Building HS	exterior	sheeting from eaves	fibre cement sheeting	sample HSA1	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22	No asbestos identified.
Building HS	interior	sheeting from ceiling near central northern entrance to house	fibre cement sheeting	sample HSA2	asbestos detected by analysis	1	1	2	1	0	1	6	Low	23	Remove asbestos material prior to any disturbance and prior to general demolition work proceeding. Removal should be undertaken by a licensed asbestos removalist.
Building HS	interior	sheeting from walls in south western portion of house	plaster sheeting	sample HSA3	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	24	No asbestos identified.
Building HS	interior	Sheeting from partition in western portion of house	fibre cement sheeting	sample HSA4	asbestos detected by analysis	1	1	2	1	0	1	6	Low	25	Remove asbestos material prior to any disturbance and prior to general demolition work proceeding. Removal should be undertaken by a licensed asbestos removalist.
Building GS	interior	Sheeting from walls in south western portion of garage structure	fibre cement sheeting	sample GSA1	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	26	No asbestos identified.
Building GS	interior	Sheeting from walls in north eastern portion of garage structure	fibre cement sheeting	sample GSA2	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27	No asbestos identified.

DP Project No: 86548.20

Hazardous Building Materials (HBM) Register

DHL Stage 1, 1953 - 2109 Elizabeth Drive, Badgerys Creek NSW

RESULTS - LEAD PAINT SCREENING ASSESSMENT

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Potentially Hazardous Constituents		Photo No.	Summary Comment/Recommendation
						Lead	% w/w		
Building HS	exterior	paint off timber on northern side of house	beige paint	sample HSL1	lead paint(s) identified	detected	9.1	41	Lead paint identified (>0.1 lead w/w per AS4361.2). Any areas of damaged/flaking paint and any associated dust/debris should be removed. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any lead paint abatement activity and any building work (e.g. maintenance, refurbishment and demolition).
Building HS	exterior	paint off brickwork on exterior toilet	beige paint	sample HSL2	lead paint(s) identified	detected	3.8	42	Lead paint identified (>0.1 lead w/w per AS4361.2). Any areas of damaged/flaking paint and any associated dust/debris should be removed. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any lead paint abatement activity and any building work (e.g. maintenance, refurbishment and demolition).
Building HS	interior	paint off timber window frame on southern side of house	white paint	sample HSL3	lead paint(s) identified	detected	6.1	43	Lead paint identified (>0.1 lead w/w per AS4361.2). Any areas of damaged/flaking paint and any associated dust/debris should be removed. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any lead paint abatement activity and any building work (e.g. maintenance, refurbishment and demolition).

DP Project No: 86548.20

Hazardous Building Materials (HBM) Register

DHL Stage 1, 1953 - 2109 Elizabeth Drive, Badgerys Creek NSW

RESULTS - LEAD PAINT SCREENING ASSESSMENT

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Potentially Hazardous Constituents		Photo No.	Summary Comment/Recommendation
						Lead	% w/w		
Building HS	interior	paint off wall on southern side of house	white paint	sample HSL4	lead paint(s) identified	detected	0.11	44	Lead paint identified (>0.1 lead w/w per AS4361.2). Any areas of damaged/flaking paint and any associated dust/debris should be removed. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any lead paint abatement activity and any building work (e.g. maintenance, refurbishment and demolition).
Building HS	rooms and areas in general	throughout	paints	refer sample HSL1 to HSL4	may comprise lead paint	N/A	N/A	N/A	Consider further confirmatory sampling and analysis for lead prior to any disturbance. Any areas of damaged/flaking paint and any associated dust/debris should be removed. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any lead paint abatement activity and any building work (e.g. maintenance, refurbishment and demolition).
Building GS	interior	paint off timber door on eastern side of garage structure	white paint	sample GSL1	lead paint(s) identified	detected	8.2	45	Lead paint identified (>0.1 lead w/w per AS4361.2). Any areas of damaged/flaking paint and any associated dust/debris should be removed. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any lead paint abatement activity and any building work (e.g. maintenance, refurbishment and demolition).

DP Project No: 86548.20

Hazardous Building Materials (HBM) Register

DHL Stage 1, 1953 - 2109 Elizabeth Drive, Badgerys Creek NSW

RESULTS - LEAD PAINT SCREENING ASSESSMENT

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Potentially Hazardous Constituents		Photo No.	Summary Comment/Recommendation
						Lead	% w/w		
Building GS	exterior	paint off timber door on southern side of garage structure	white paint	sample GSL2	lead paint(s) identified	detected	7.2	46	Lead paint identified (>0.1 lead w/w per AS4361.2). Any areas of damaged/flaking paint and any associated dust/debris should be removed. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any lead paint abatement activity and any building work (e.g. maintenance, refurbishment and demolition).
Building GS	rooms and areas in general	throughout	paints	refer sample GSL1, GSL2	may comprise lead paint	N/A	N/A	N/A	Consider further confirmatory sampling and analysis for lead prior to any disturbance. Any areas of damaged/flaking paint and any associated dust/debris should be removed. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any lead paint abatement activity and any building work (e.g. maintenance, refurbishment and demolition).

DP Project No: 86548.20
Hazardous Building Materials (HBM) Register
DHL Stage 1, 1953 - 2109 Elizabeth Drive, Badgerys Creek NSW

RESULTS - LEAD DUST

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Photo No.	Summary Comment/Recommendation
Building HS	ventilation grate in kitchen	throughout	settled dust	sample HSD1	elevated lead concentration (≥0.5 mg/m ²)	55	Elevated lead concentration detected. Ensure access to material is adequately restricted and contact / disturbance is only made under adequately controlled conditions. Remove lead contamination if reasonably practicable to do so and prior to any substantive disturbance. Implement appropriate controls to prevent exposure and dispersal including during normal building operation and building works (e.g. maintenance, refurbishment and demolition).
Building HS	ventilation grate in bathroom	throughout	settled dust	sample HSD2	elevated lead concentration (≥0.5 mg/m ²)	56	Elevated lead concentration detected. Ensure access to material is adequately restricted and contact / disturbance is only made under adequately controlled conditions. Remove lead contamination if reasonably practicable to do so and prior to any substantive disturbance. Implement appropriate controls to prevent exposure and dispersal including during normal building operation and building works (e.g. maintenance, refurbishment and demolition).
Building HS	rooms and areas in general	throughout	settled dust	refer sample HSD1, HSD2	may contain elevated lead concentration (≥0.5 mg/m ²)	N/A	Consider a more detailed program of sampling and analysis to assess lead exposure risk. Ensure access to material is appropriately restricted and contact / disturbance is only made under adequately controlled conditions. Remove lead contamination if reasonably practicable to do so. Implement appropriate controls, if required, to prevent exposure and dispersal including during normal building operation and building works (e.g. maintenance, refurbishment and demolition).
Building GS	manhole on garage ceiling	throughout	settled dust	sample GSD1	elevated lead concentration (≥0.5 mg/m ²)	57	Elevated lead concentration detected. Ensure access to material is adequately restricted and contact / disturbance is only made under adequately controlled conditions. Remove lead contamination if reasonably practicable to do so and prior to any substantive disturbance. Implement appropriate controls to prevent exposure and dispersal including during normal building operation and building works (e.g. maintenance, refurbishment and demolition).
Building GS	rooms and areas in general	throughout	settled dust	refer sample GSD1	may contain elevated lead concentration (≥0.5 mg/m ²)	N/A	Consider a more detailed program of sampling and analysis to assess lead exposure risk. Ensure access to material is appropriately restricted and contact / disturbance is only made under adequately controlled conditions. Remove lead contamination if reasonably practicable to do so. Implement appropriate controls, if required, to prevent exposure and dispersal including during normal building operation and building works (e.g. maintenance, refurbishment and demolition).

DP Project No: 86548.20
Hazardous Building Materials (HBM) Register
DHL Stage 1, 1953 - 2109 Elizabeth Drive, Badgerys Creek NSW

RESULTS - POLYCHLORINATED BIPHENYLS (PCBs)

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Photo No.	Summary Comment/Recommendation
Building HS	interior	western portion of house	fluorescent light fittings, internal components	N/A	nil PCB (suspected)	62	Nil PCB containing capacitors suspected based on apparent age of light fittings (appear 1980's onwards).

DP Project No: 86548.20
 Hazardous Building Materials (HBM) Register
 DHL Stage 1, 1953 - 2109 Elizabeth Drive, Badgerys Creek NSW

RESULTS - SYNTHETIC MINERAL FIBRE (SMF) INSULATION

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Photo No.	Summary Comment/Recommendation
Building GS	ceiling cavity	throughout ceiling cavity	insulation generally	N/A	SMF (suspected)	67	SMF suspected. Conduct further investigation(s) as required to confirm the status of the material prior to any disturbance. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any abatement activity and any building work (e.g. maintenance, refurbishment and demolition).

Appendix C

Photographic Plates



Photo 1: Building 2, interior, wall sheeting, fibre cement sheeting, sample 2A1, no asbestos detected by analysis.



Photo 2: Building 2, interior, wall sheeting, fibre cement sheeting, sample 2A2, no asbestos detected by analysis.



Photo 3: Building 2, interior, wall sheeting, fibre cement sheeting, sample 2A3, no asbestos detected by analysis.



Photo 4: Building 4, interior, ceiling sheeting, plaster sheeting, sample 4A1, no asbestos detected by analysis (SMF detected).



Photo 5: Building 11, interior, wall sheeting in eastern bedroom in house, plaster sheeting, sample 11A1, no asbestos detected by analysis.



Photo 6: Building 11, interior, wall sheeting within eastern corridor of house, fibre cement sheeting, sample 11A2, asbestos detected by analysis.

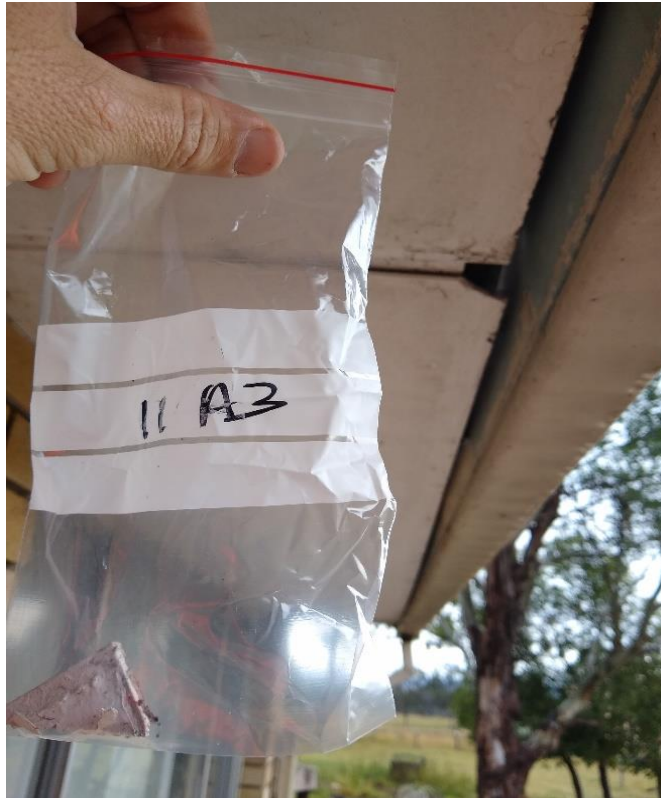


Photo 7: Building 11, exterior, sheeting from eaves, fibre cement sheeting, sample 11A3, asbestos detected by analysis.



Photo 8: Building 11, exterior, sheeting from eaves, fibre cement sheeting, sample 11A4, asbestos detected by analysis.



Photo 9: Building 21, exterior, wall sheeting on side shed, fibre cement sheeting, sample 21A1, asbestos detected by analysis.



Photo 10: Building 21, exterior, wall sheeting on side shed, fibre cement sheeting, sample 21A2, asbestos detected by analysis.



Photo 11: Building 24, interior, wall sheeting in bathroom in house, plaster sheeting, sample 24A1, no asbestos detected by analysis (SMF detected).



Photo 12: Building 24, interior, wall sheeting in corridor of house, plaster sheeting, sample 24A2, no asbestos detected by analysis.



Photo 13: Building 24, exterior, sheeting from eaves, fibre cement sheeting, sample 24A3, asbestos detected by analysis.

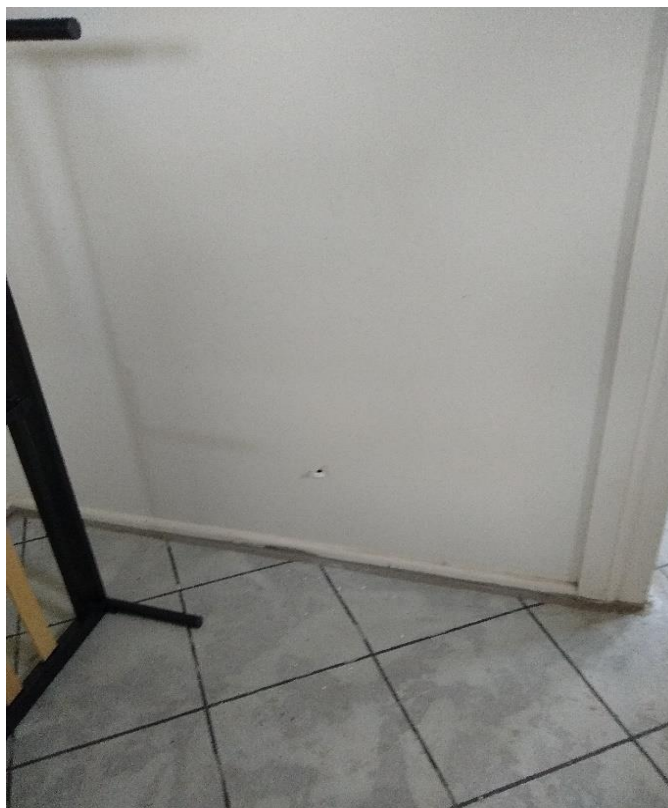


Photo 14: Building 25, interior, wall sheeting in northern bedroom, plaster sheeting, sample 25A1, no asbestos detected by analysis.



Photo 15: Building 25, interior, wall sheeting in southern portion of house, fibre cement sheeting, sample 25A2, asbestos detected by analysis.



Photo: 16 Building 25, exterior, sheeting from eaves, fibre cement sheeting, sample 25A3, asbestos detected by analysis.



Photo 17: Building 34, exterior, sheeting from eaves, fibre cement sheeting, sample 34A1, asbestos detected by analysis.



Photo 18: Building 34, interior, sheeting from wall, fibre cement sheeting, sample 34A2, no asbestos detected by analysis.



Photo 19: Building 34, interior, backing board from electrical box, black bituminous material, sample 34A3, asbestos detected by analysis.



Photo 20: Toilet (T), interior, sheeting from wall, fibre cement sheeting, sample TA1, no asbestos detected by analysis.



Photo 21: Building 23a, exterior, sheeting from eaves, fibre cement sheeting, N/A, suspected asbestos.



Photo 22: Building HS, exterior, sheeting from eaves, fibre cement sheeting, sample HSA1, no asbestos detected by analysis.



Photo 23: Building HS, interior, sheeting from ceiling near central northern entrance to house, fibre cement sheeting, sample HSA2, asbestos detected by analysis.



Photo 24: Building HS, interior, sheeting from walls in south western portion of house, plaster sheeting, sample HSA3, no asbestos detected by analysis.



Photo 25: Building HS, interior, sheeting from partition in western portion of house, fibre cement sheeting, sample HSA4, asbestos detected by analysis.



Photo 26: Building GS, interior, sheeting from walls in south western portion of garage structure, fibre cement sheeting, sample GSA1, no asbestos detected by analysis.



Photo 27: Building GS, interior, sheeting from walls in north eastern portion of garage structure, fibre cement sheeting, sample GSA2, no asbestos detected by analysis.



Photo 28: Building 3, interior, paint off timber post in western portion of shed structure, light red paint, sample 3L1, lead paint(s) identified

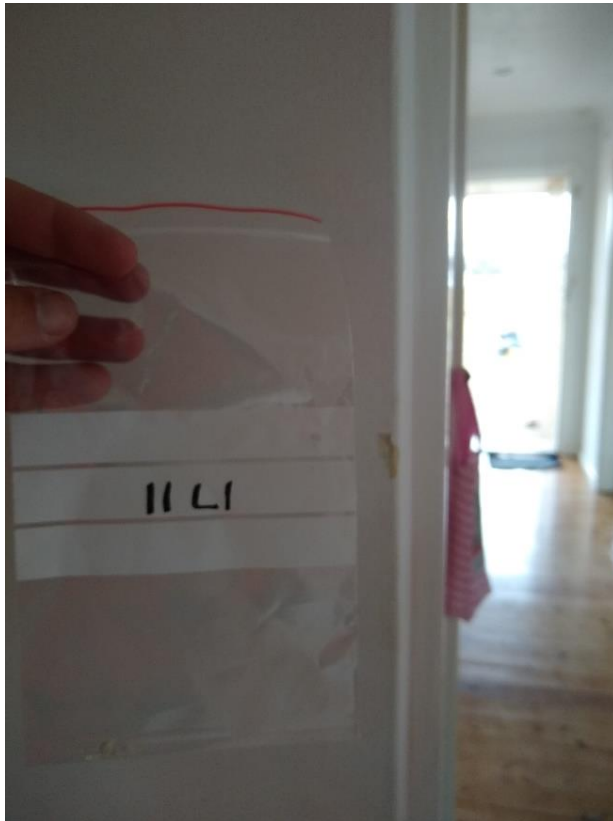


Photo 29: Building 11, interior, paint off timber frame within corridor, white paint, sample 11L1, no lead paint(s) identified



Photo 30: Building 11, interior, paint off timber door frame to bedroom in north eastern portion of house, white paint, sample 11L2, no lead paint(s) identified

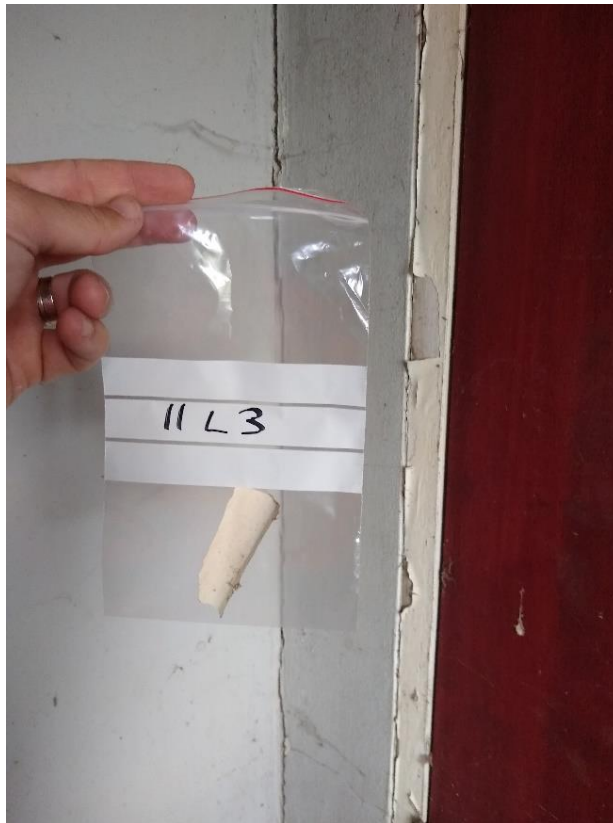


Photo 31: Building 11, interior, paint off timber door frame in south western portion of house, white paint, sample 11L3, lead paint(s) identified



Photo 32: Building 11, exterior, paint off timber exterior door on southern side of dwelling, white paint, sample 11L4, lead paint(s) identified

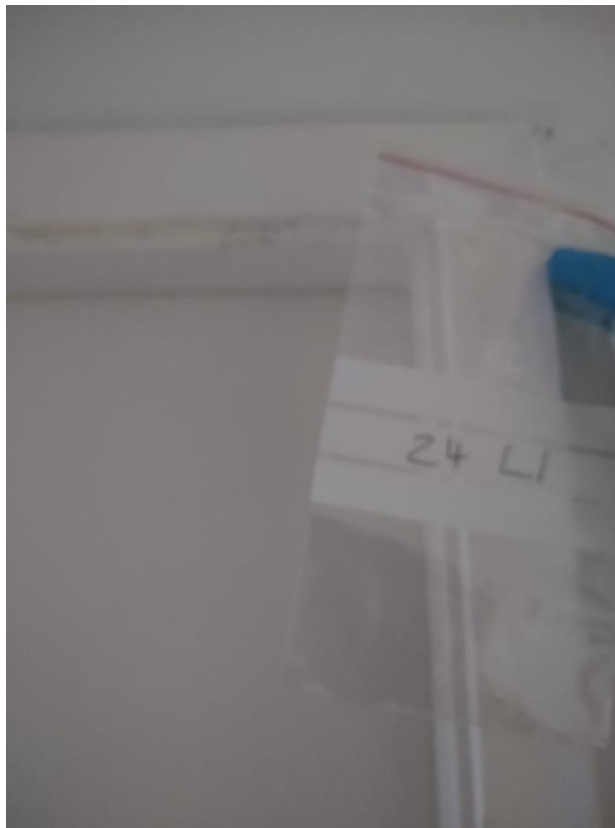


Photo 33: Building 24, interior, paint off timber door frame within corridor of dwelling, white paint, sample 24L1, no lead paint(s) identified



Photo 34: Building 24, interior, paint off timber window frame in southern bedroom in house, white paint, sample 24L2, no lead paint(s) identified



Photo 35: Building 24, exterior, paint off timber frame of north eastern portion of house, white paint, sample 24L3, no lead paint(s) identified



Photo 36: Building 25, interior, paint off timber window frame in northern bedroom in house, white paint, sample 25L1, no lead paint(s) identified



Photo 37: Building 25, interior, paint off timber door frame in southern portion of house, white paint, sample 25L2, lead paint(s) identified



Photo 38: Building 25, exterior, paint off timber post on eastern side of house, white paint, sample 25L3, no lead paint(s) identified



Photo 39: Building 34, interior, paint off timber door frame on eastern side of structure, brown paint, sample 34L1, lead paint(s) identified



Photo 40: Building 34, exterior, paint off timber door, green paint, 34L2, lead paint(s) identified



Photo 41: Building HS, exterior, paint off timber on northern side of house, beige paint, sample HSL1, lead paint(s) identified



Photo 42: Building HS, exterior, paint off brickwork on exterior toilet, beige paint, sample HSL2, lead paint(s) identified



Photo 43: Building HS, interior, paint off timber window frame on southern side of house, white paint, sample HSL3, lead paint(s) identified



Photo 44: Building HS, interior, paint off wall on southern side of house, white paint, sample HSL4, lead paint(s) identified



Photo 45: Building GS, interior, paint off timber door on eastern side of garage structure, white paint, sample GSL1, lead paint(s) identified



Photo 46: Building GS, exterior, paint off timber door on southern side of garage structure, white paint, sample GSL2, lead paint(s) identified



Photo 47: Building 2, timber frame on eastern side of shed, throughout, settled dust, sample 2D1, elevated lead concentration (≥ 0.5 mg/m²)



Photo 48: Building 3, timber frame on western side of shed, throughout, settled dust, sample 3D1, elevated lead concentration (≥ 0.5 mg/m²)



Photo 49: Building 11, ventilation grate in front bedroom, throughout, settled dust, sample 11D1, lead concentration <0.5 mg/m2



Photo 50: Building 11, manhole in western portion of house, throughout, settled dust, sample 11D2, lead concentration <0.5 mg/m2

	Site Photographs	PROJECT: 86548.20
	DHL Stage 1	PLATE No: 24
	1953 - 2109 Elizabeth Drive, Badgerys Creek, NSW	REV: 0
	CLIENT: DHL Supply Chain (Australia) Pty Limited	DATE: Jun-21



Photo 51: Building 24, wall cavity in central portion of house, throughout, settled dust, sample A4D1, lead concentration <0.5 mg/m2

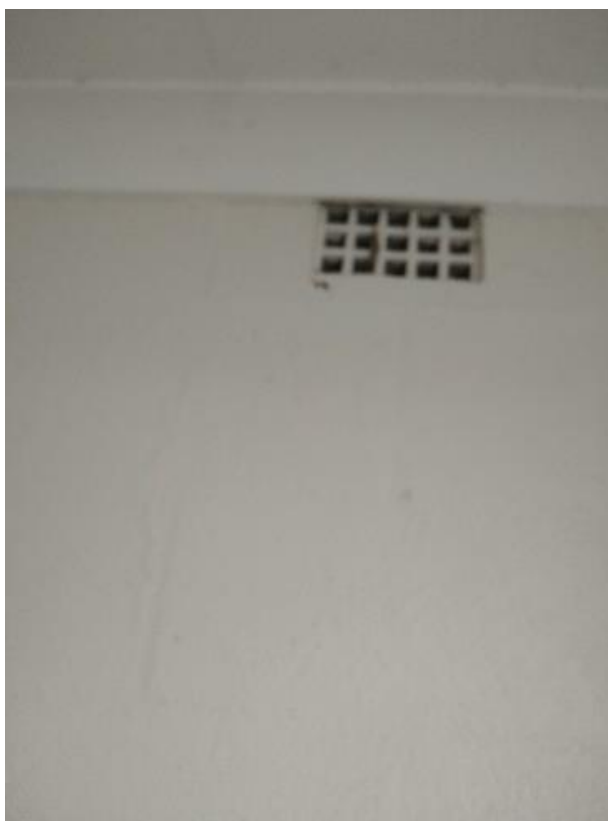


Photo 52: Building 25, ventilation grate in front bedroom, throughout, settled dust, sample 25D1, lead concentration <0.5 mg/m2



Photo 53: Building 25, manhole in central western portion of house, throughout, settled dust, sample 25D2, lead concentration <0.5 mg/m2



Photo 54: Building 34, timber window sill in central portion of structure, throughout, settled dust, sample 34D1, lead concentration <0.5 mg/m2



Photo 55: Building HS, ventilation grate in kitchen, throughout, settled dust, sample HSD1, elevated lead concentration (≥ 0.5 mg/m²)



Photo 56: Building HS, ventilation grate in bathroom, throughout, settled dust, sample HSD2, elevated lead concentration (≥ 0.5 mg/m²)



Photo 57: Building GS, manhole on garage ceiling, throughout, settled dust, sample GSD1, elevated lead concentration (≥ 0.5 mg/m²)



Photo 58: Building 2, interior , eastern portion of shed structure, fluorescent light fittings, internal components, nil PCB (suspected)



Photo 59: Building 3, interior , throughout, fluorescent light fittings, internal components, inaccessible

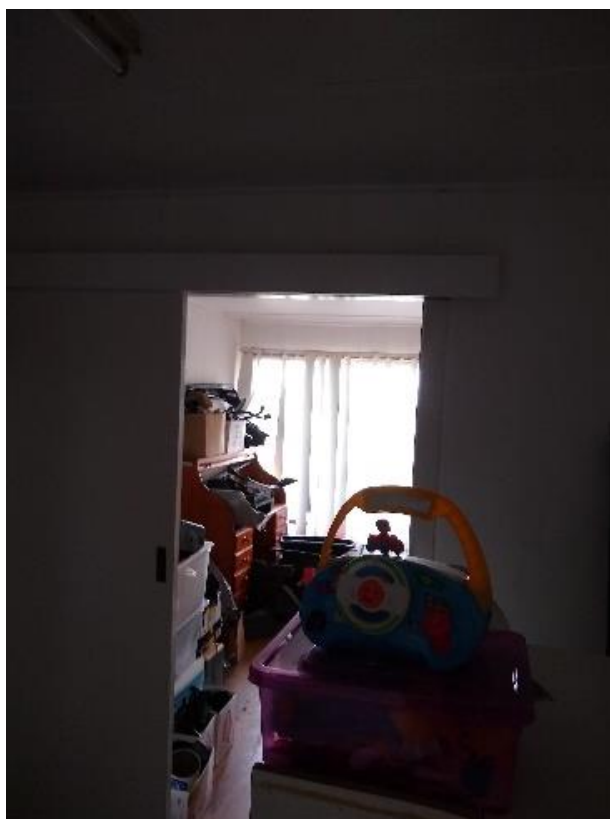


Photo 60: Building 11, interior , central western portion of house, fluorescent light fittings, internal components, nil PCB (suspected)



Photo 61: Building 24, interior , central portion of house, fluorescent light fittings, internal components, nil PCB (suspected)



Photo 62: Building HS, interior , western portion of house, fluorescent light fittings, internal components, nil PCB (suspected)



Photo 63: Building 11, ceiling cavity, throughout ceiling cavity, insulation generally, SMF (suspected)



Photo 64: Building 24, ceiling cavity, throughout ceiling cavity, insulation generally, SMF (suspected)



Photo 65: Building 25, ceiling cavity, throughout ceiling cavity, insulation generally, SMF (suspected)



Photo 66: Building 34, ceiling cavity, throughout ceiling cavity, insulation generally, SMF (suspected)



Photo 67: Building GS, ceiling cavity, throughout ceiling cavity, insulation generally, SMF (suspected)



Photo 68: Building 21, interior, paint off wall within southern portion of shed, white paint, sample 21L1, lead paint(s) identified



Photo 69: Structure 36, No hazardous building materials identified



Photo 70: Structure 16 (Silo), no hazardous building materials identified



Photo 71: Structure 17, no hazardous building materials identified



Photo 72: Structure 20, no hazardous building materials identified

Appendix D

Laboratory Certificate of Analysis

CERTIFICATE OF ANALYSIS 268411

Client Details

Client	Douglas Partners Pty Ltd Smeaton Grange
Attention	Grant Russell
Address	18 Waler Crescent, Smeaton Grange, NSW, 2567

Sample Details

Your Reference	86548.07, HAZMAT Badgerys Creek
Number of Samples	27 Material, 20 Paint, 11 Dust
Date samples received	06/05/2021
Date completed instructions received	07/05/2021

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	13/05/2021
Date of Issue	13/05/2021
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 Identifier: Wonnie Condos
 Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By

Hannah Nguyen, Senior Chemist
 Ken Nguyen, Senior Customer Service
 Lucy Zhu, Asbestos Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

Lead in Paint						
Our Reference	UNITS	268411-2	268411-5	268411-11	268411-12	268411-13
Your Reference		3L1	21L1	24L1	24L2	24L3
Date Sampled		04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Type of sample		Paint	Paint	Paint	Paint	Paint
Date prepared	-	11/05/2021	11/05/2021	11/05/2021	11/05/2021	11/05/2021
Date analysed	-	11/05/2021	11/05/2021	11/05/2021	11/05/2021	11/05/2021
Lead in paint	%w/w	1.1	4.3	0.01	0.01	0.098

Lead in Paint						
Our Reference	UNITS	268411-14	268411-15	268411-26	268411-27	268411-28
Your Reference		34L1	34L2	25L1	25L2	25L3
Date Sampled		04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Type of sample		Paint	Paint	Paint	Paint	Paint
Date prepared	-	11/05/2021	11/05/2021	11/05/2021	11/05/2021	11/05/2021
Date analysed	-	11/05/2021	11/05/2021	11/05/2021	11/05/2021	11/05/2021
Lead in paint	%w/w	0.38	2.0	0.03	0.13	0.01

Lead in Paint						
Our Reference	UNITS	268411-36	268411-37	268411-38	268411-39	268411-46
Your Reference		11L1	11L2	11L3	11L4	HSL1
Date Sampled		05/05/2021	05/05/2021	05/05/2021	05/05/2021	05/05/2021
Type of sample		Paint	Paint	Paint	Paint	Paint
Date prepared	-	11/05/2021	11/05/2021	11/05/2021	11/05/2021	11/05/2021
Date analysed	-	11/05/2021	11/05/2021	11/05/2021	11/05/2021	11/05/2021
Lead in paint	%w/w	0.01	0.052	0.16	11	9.1

Lead in Paint						
Our Reference	UNITS	268411-47	268411-48	268411-49	268411-54	268411-55
Your Reference		HSL2	HSL3	HSL4	GSL1	GSL2
Date Sampled		05/05/2021	05/05/2021	05/05/2021	05/05/2021	05/05/2021
Type of sample		Paint	Paint	Paint	Paint	Paint
Date prepared	-	11/05/2021	11/05/2021	11/05/2021	11/05/2021	11/05/2021
Date analysed	-	11/05/2021	11/05/2021	11/05/2021	11/05/2021	11/05/2021
Lead in paint	%w/w	3.8	6.1	0.11	8.2	7.2

Lead in swab						
Our Reference		268411-3	268411-16	268411-24	268411-25	268411-29
Your Reference	UNITS	3D1	34D1	25D1	25D2	2D1
Date Sampled		04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Type of sample		Dust	Dust	Dust	Dust	Dust
Date prepared	-	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021
Date analysed	-	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021
Lead in Swabs	µg/swab	150	1	1	4	85

Lead in swab						
Our Reference		268411-40	268411-41	268411-50	268411-51	268411-56
Your Reference	UNITS	11D1	11D2	HSD1	HSD2	GSD1
Date Sampled		05/05/2021	05/05/2021	05/05/2021	05/05/2021	05/05/2021
Type of sample		Dust	Dust	Dust	Dust	Dust
Date prepared	-	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021
Date analysed	-	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021
Lead in Swabs	µg/swab	3	3	13	12	39

Lead in swab		
Our Reference		268411-58
Your Reference	UNITS	A4D1
Date Sampled		04/05/2021
Type of sample		Dust
Date prepared	-	12/05/2021
Date analysed	-	12/05/2021
Lead in Swabs	µg/swab	<1

Asbestos ID - materials						
Our Reference	UNITS	268411-1	268411-4	268411-6	268411-7	268411-8
Your Reference		TA1	4A1	21A1	21A2	24A1
Date Sampled		04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021
Mass / Dimension of Sample	-	45x20x5mm	50x50x2mm	40x20x4mm	60x30x5mm	30x20x5mm
Sample Description	-	Beige fibre cement material	White plaster & fibrous sheet	Grey fibre cement material	Grey fibre cement material	White plaster & fibrous sheet
Asbestos ID in materials	-	No asbestos detected	No asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected	No asbestos detected
		Organic fibres detected	Organic fibres detected			Organic fibres detected
			Synthetic mineral fibres detected			Synthetic mineral fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	[NT]	[NT]	No asbestos detected

Asbestos ID - materials						
Our Reference	UNITS	268411-9	268411-10	268411-17	268411-18	268411-19
Your Reference		24A2	24A3	34A1	34A2	34A3
Date Sampled		04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021
Mass / Dimension of Sample	-	60x20x3mm	30x15x2mm	20x15x2mm	30x20x2mm	30x15x5mm
Sample Description	-	White plaster & paint	A)Grey fibre cement material B)Paint	Beige fibre cement material	Beige fibre cement material & paint	Black bituminous material
Asbestos ID in materials	-	No asbestos detected	A)Chrysotile asbestos detected	Chrysotile asbestos detected	No asbestos detected	Chrysotile asbestos detected
			Amosite asbestos detected	Organic fibres detected	Organic fibres detected	
			Crocidolite asbestos detected			
			B)No asbestos detected			
Trace Analysis	-	No asbestos detected	No asbestos detected	[NT]	No asbestos detected	[NT]

Asbestos ID - materials						
Our Reference	UNITS	268411-20	268411-21	268411-22	268411-23	268411-30
Your Reference		34A4	25A1	25A2	25A3	2A1
Date Sampled		04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021
Mass / Dimension of Sample	-	30x15x3mm	30x15x2mm	10x8x2mm	20x20x2mm	35x25x3mm
Sample Description	-	Pink fibre cement material	White plaster & fibrous sheet	A)Pink fibre cement material B)Paint	Pink fibre cement material	Beige fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected	No asbestos detected	A)Chrysotile asbestos detected	Chrysotile asbestos detected	No asbestos detected
		Organic fibres detected	Organic fibres detected	Organic fibres detected	Organic fibres detected	Organic fibres detected
				B)No asbestos detected		
Trace Analysis	-	[NT]	No asbestos detected	No asbestos detected	[NT]	No asbestos detected

Asbestos ID - materials						
Our Reference	UNITS	268411-31	268411-32	268411-33	268411-34	268411-35
Your Reference		2A2	11A1	11A2	11A3	11A4
Date Sampled		04/05/2021	05/05/2021	05/05/2021	05/05/2021	05/05/2021
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021
Mass / Dimension of Sample	-	40x20x4mm	40x20x2mm	15x5x3mm	45x25x5mm	20x15x4mm
Sample Description	-	Beige fibre cement material	White plaster & fibrous sheet	A)White plaster B)Fibrous sheet & paint	A)Grey fibre cement material B)Paint	A)Grey fibre cement material B)Paint
Asbestos ID in materials	-	No asbestos detected	No asbestos detected	A)Chrysotile asbestos detected	A)Chrysotile asbestos detected	A)Chrysotile asbestos detected
		Organic fibres detected	Organic fibres detected	Organic fibres detected	Amosite asbestos detected	Amosite asbestos detected
				B)No asbestos detected	Crocidolite asbestos detected	Crocidolite asbestos detected
				Organic fibres detected	B)No asbestos detected	B)No asbestos detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - materials						
Our Reference	UNITS	268411-42	268411-43	268411-44	268411-45	268411-52
Your Reference		HSA1	HSA2	HSA3	HSA4	GSA1
Date Sampled		05/05/2021	05/05/2021	05/05/2021	05/05/2021	05/05/2021
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021
Mass / Dimension of Sample	-	30x15x2mm	50x30x4mm	15x15x2mm	110x110x5mm	25x10x2mm
Sample Description	-	Beige fibre cement material & paint	A)Beige fibre cement material B)Paint	White plaster & paint	A)Grey fibre cement material B)Paint	Beige fibre cement material
Asbestos ID in materials	-	No asbestos detected	A)Chrysotile asbestos detected	No asbestos detected	A)Chrysotile asbestos detected	No asbestos detected
		Organic fibres detected	B)No asbestos detected	Organic fibres detected	B)No asbestos detected	Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - materials			
Our Reference	UNITS	268411-53	268411-57
Your Reference		GSA2	2A3
Date Sampled		05/05/2021	04/05/2021
Type of sample		Material	Material
Date analysed	-	13/05/2021	13/05/2021
Mass / Dimension of Sample	-	30x10x3mm	40x25x5mm
Sample Description	-	Beige fibre cement material	Beige fibre cement material
Asbestos ID in materials	-	No asbestos detected	No asbestos detected
		Organic fibres detected	Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected

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.
Metals-020/021/022	Digestion of Paint chips/scrapings/liquids for Metals determination by ICP-AES/MS and or CV/AAS.
Metals-020/021/022	Digestion of Dust wipes/swabs and /or miscellaneous samples for Metals determination by ICP-AES/MS and/or CV-AAS

QUALITY CONTROL: Lead in Paint					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			11/05/2021	5	11/05/2021	11/05/2021		11/05/2021	[NT]
Date analysed	-			11/05/2021	5	11/05/2021	11/05/2021		11/05/2021	[NT]
Lead in paint	%w/w	0.005	Metals-020/021/022	<0.005	5	4.3	3.8	12	96	[NT]

QUALITY CONTROL: Lead in Paint					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	47	11/05/2021	11/05/2021		[NT]	[NT]
Date analysed	-			[NT]	47	11/05/2021	11/05/2021		[NT]	[NT]
Lead in paint	%w/w	0.005	Metals-020/021/022	[NT]	47	3.8	4.2	10	[NT]	[NT]

Client Reference: 86548.07, HAZMAT Badgerys Creek

QUALITY CONTROL: Lead in swab						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			12/05/2021	[NT]	[NT]	[NT]	[NT]	12/05/2021	[NT]
Date analysed	-			12/05/2021	[NT]	[NT]	[NT]	[NT]	12/05/2021	[NT]
Lead in Swabs	µg/swab	1	Metals-020/021/022	<1	[NT]	[NT]	[NT]	[NT]	88	[NT]

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 AIOH 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.

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

Samples 268411-10, 22, 33, 34, 35, 43, 45; The supplied samples were sub-sampled (A & B) in order to accurately report the analytical results representative of the entire sample, as per AS4964-2004.

Project Name: HAZMAT Badgerys Creek	To: Envirolab Services
Project No: 86548.07	Sampler: GAR/NKK
Project Mgr: GAR	Mob. Phone: 0418 116 545
Email: Grant.Russell@douglaspartners.com.au; Nadya.Kako@douglaspartners.com.au	Attn: Tania Notaras
Date Required: Standard	Phone: (02) 9910 6200 Fax: (02) 9910 6201
	Email: tnotaras@envirolabservices.com.au

Sample ID	Lab ID	Date Sampled	Sample Type	Container Type	Analytes										Notes/preservation
			F - Fragment D - Dust P - Paint	G - glass P - plastic	Lead	Asbestos									
TA1	1	04.05.21	F	P	X										
3L1	2	04.05.21	P	P	X										
3D1	3	04.05.21	D	P	X										
4A1	4	04.05.21	F	P		X									
21L1	5	04.05.21	P	P	X										
21A1	6	04.05.21	F	P		X									
21A2	7	04.05.21	F	P		X									
A4D1	NK	04.05.21	D	P	X										
24A1	8	04.05.21	F	P		X									
24A2	9	04.05.21	F	P		X									
24A3	10	04.05.21	F	P		X									
24L1	11	04.05.21	P	P	X										
24L2	12	04.05.21	P	P	X										
24L3	13	04.05.21	P	P	X										
34L1	14	04.05.21	P	P	X										
34L2	15	04.05.21	P	P	X										

Envirolab Services
12 Ashley Street
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 268411

Date Received: 06/05/21

Time Received: 11:30

Received By: CH

Temp: Cool/Ambient

Cooling: Ice/Icepack

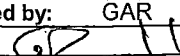
Security: Intact/Broken/None

Lab Report No:			
Send Results to: Douglas Partners Pty Ltd	Address: 18 Waler Crescent Smeaton Grange NSW 2567	Phone: (02) 4647 0075	Fax: (02) 4646 1886
Relinquished by: GAR	Transported to laboratory by:		
Signed: 	Date & Time: 06.05.21	Received by: Christine 06/05/21 # 268411	

CH 06/05/21 # 268411

Project Name: HAZMAT Badgerys Creek		To: Envirolab Services	
Project No: 86548.07	Sampler: GAR/NKK	12 Ashley Street, Chatswood NSW 2067	
Project Mgr: GAR	Mob. Phone: 0418 116 545	Attn: Tania Notaras	
Email: Grant.Russell@douglaspartners.com.au; Nadya.Kako@douglaspartners.com.au		Phone: (02) 9910 6200	Fax: (02) 9910 6201
Date Required: Standard		Email: tnotaras@envirolabservices.com.au	

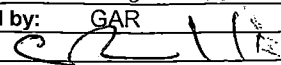
Sample ID	Lab ID	Date Sampled	Sample Type	Container Type	Analytes										Notes/preservation
			F - Fragment D - Dust P - Paint	P - plastic	Lead	Asbestos									
34D1	16	04.05.21	D	P	X										
34A1	17	04.05.21	F	P		X									
34A2	18	04.05.21	F	P		X									
34A3	19	04.05.21	F	P		X									
34A4	20	04.05.21	F	P		X									
25A1	21	04.05.21	F	P		X									
25A2	22	04.05.21	F	P		X									
25A3	23	04.05.21	F	P		X									
25D1	24	04.05.21	D	P	X										
25D2	25	04.05.21	D	P	X										
25L1	26	04.05.21	P	P	X										
25L2	27	04.05.21	P	P	X										
25L3	28	04.05.21	P	P	X										
2D1	29	04.05.21	D	P	X										
2A1	30	04.05.21	F	P		X									
2A2	31	04.05.21	F	P		X									

Lab Report No:		Address 18 Waler Crescent Smeaton Grange NSW 2567		Phone: (02) 4647 0075	Fax: (02) 4646 1886
Send Results to: Douglas Partners Pty Ltd		Transported to laboratory by:			
Relinquished by: GAR		Received by: CH, ELJ/MD			
Signed: 	Date & Time: 06.05.21				

CH 06/05/21 # 268411

Project Name: HAZMAT Badgerys Creek	To: Envirolab Services
Project No: 86548.07	Sampler: GAR/NKK
Project Mgr: GAR	Attn: Tania Notaras
Email: Grant.Russell@douglaspartners.com.au; Nadya.Kako@douglaspartners.com.au	Phone: (02) 9910 6200 Fax: (02) 9910 6201
Date Required: Standard	Email: tnotaras@envirolabservices.com.au

Sample ID	Lab ID	Date Sampled	Type	Type	Analytes								Notes/preservation	
			F - Fragment D - Dust P - Paint	P - plastic	Lead	Asbestos								
2D1	NK	04.05.21	D	P	X									
11A1 32	16	05.05.21	F	P		X								
11A2 33	17	05.05.21	F	P		X								
11A3 34	18	05.05.21	F	P		X								
11A4 35	19	05.05.21	F	P		X								
11L1 36	20	05.05.21	P	P	X									
11L2 37	21	05.05.21	P	P	X									
11L3 38	22	05.05.21	P	P	X									
11L4 39	23	05.05.21	P	P	X									
11D1 40	24	05.05.21	D	P	X									
11D2 41	25	05.05.21	D	P	X									
HSA1 42	26	05.05.21	F	P		X								
HSA2 43	27	05.05.21	F	P		X								
HSA3 44	28	05.05.21	F	P		X								
HSA4 45	29	05.05.21	F	P		X								
HSL1 46	30	05.05.21	P	P	X									

Lab Report No:	
Send Results to: Douglas Partners Pty Ltd	Address 18 Waler Crescent Smeaton Grange NSW 2567 Phone: (02) 4647 0075 Fax: (02) 4646 1886
Relinquished by: GAR	Transported to laboratory by:
Signed: 	Date & Time: 06.05.21 Received by: CH, ELSMD

CH 06/05/21 # 268411

Project Name: HAZMAT Badgerys Creek		To: Envirolab Services	
Project No: 86548.07	Sampler: GAR/NKK	12 Ashley Street, Chatswood NSW 2067	
Project Mgr: GAR	Mob. Phone: 0418 116 545	Attn: Tania Notaras	
Email: Grant.Russell@douglaspartners.com.au; Nadya.Kako@douglaspartners.com.au		Phone: (02) 9910 6200	Fax: (02) 9910 6201
Date Required: Standard		Email: tnotaras@envirolabservices.com.au	

Sample ID	Lab ID	Date Sampled	Type	Type	Analytes								Notes/preservation
			F - Fragment D - Dust P - Paint	P - plastic	Lead	Asbestos							
HSL2 47	31	05.05.21	P	P	X								
HSL3 48	32	05.05.21	P	P	X								
HSL4 49	33	05.05.21	P	P	X								
HSD1 50	34	05.05.21	D	P	X								
HSD2 51	35	05.05.21	D	P	X								
GSA1 52	36	05.05.21	F	P		X							
GSA2 53	37	05.05.21	F	P		X							
GSL1 54	38	05.05.21	P	P	X								
GSL2 55	39	05.05.21	P	P	X								
GSD1 56	40	05.05.21	D	P	X								
2A3 0157	41												
24 D1 58	42												

Envirolab Services
12 Ashley Street
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 268911
Date Received: 06/05/21
Time Received: 11:30
Received By: CH
Temp. Controlled
Cooling: Ice/Refrigerator
Security: Locked/Unlocked

Lab Report No:		Send Results to: Douglas Partners Pty Ltd		Address: 18 Waler Crescent Smeaton Grange NSW 2567	Phone: (02) 4647 0075	Fax: (02) 4646 1886
Relinquished by: GAR		Transported to laboratory by:				
Signed: <i>[Signature]</i>	Date & Time: 06.05.21	Received by: Christine ECS SYR 06/05/21 11:30				

CH 06/05/21 # 268911

Appendix E

About this Report

About this Report

Douglas Partners



Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;

- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.