

Report Type: Preliminary Site Investigation

Site Address: 61 – 65 Lucas Avenue & 36 McKay Avenue, Moorebank, NSW

**Report Number:** 2868/ER-1-1 **Report Date:** 2<sup>nd</sup> June 2017

#### **Prepared for**

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2<sup>nd</sup> June 2017

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RE: PRELIMINARY SITE INVESTIGATION – 61-65 LUCAS AVENUE & 36 McKAY AVENUE, MOOREBANK, NSW

Alliance Geotechnical Pty Ltd (AG) hereby submits this Preliminary Site Investigation (PSI) of the above site.

This report documents the findings of completed environmental tasks, including reviews of historical information, statutory notices and a site inspection to assess areas of environmental concern. Based on desktop study findings and field observations, conclusions are drawn regarding the potential for site contamination, with recommendations for additional action, if necessary.

Should you require further information or clarification regarding any aspect of this report, please call the undersigned on 1800 288 188.

For and on behalf of, Alliance Geotechnical Pty Ltd

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#### **EXECUTIVE SUMMARY**

Alliance Geotechnical Pty Ltd (AG) was engaged by A & K Engineering Pty Ltd on behalf of Mounir & Rabick Tamer, Fouad Hebous and Ahmed Tabbah (the clients), to conduct a Preliminary Site Investigation (PSI) (contamination assessment) at 61, 63 & 65 Lucas Avenue and 36 McKay Avenue, Moorebank, NSW (herein referred to as 'the site'). The site was legally identified as Lots 20, 21, 22 & 23 in Deposited Plan (DP) 236405, and covered an area of approximately 2,880 m<sup>2</sup>.

At the time of reporting, the site was used for low density residential purposes, comprising four separate residential allotments. The proposed development includes the removal of all site buildings, excavation of soils for off-site disposal, and construction of a residential flat building with two underground basements for car parking. A preliminary site investigation (PSI) was required to support the development application (DA).

The main objective of this investigation was to assess the potential for soil and groundwater contamination at the site, based on a review of site setting and past land uses (i.e. site history).

The scope of works comprised of:

- reviews of site history information including land titles and historical aerial photographs;
- a review of the NSW Environment Protection Authority (EPA) public registers;
- a site walkover inspection;
- reviews of site conditions and the surrounding environment including geology, hydrogeology and topography; and
- interpretation of the available site history/site setting information, field observations and compilation of a final report, including a statement regarding the potential for contamination to exist at the site.

Based on the land titles information, it appeared that the site was vacant until approximately 1944, after which it was used for rural residential land use. The site was owned by a poultry farmer until 1967, after which it was transferred to Wood Green Estates Pty Ltd, who likely subdivided the site for sale as residential allotments. Following 1968, the site was owned by a number of individuals and couples for residential land use.

A review of the aerial photography identified that the site was vacant bushland until sometime between 1943 and 1955. In the 1955 aerial photograph, a number of small structures were observed at the site, consistent with the size and layout of poultry sheds. This coincides with the time that the site was owned by a poultry farmer. By 1970, the former structures had been removed and the site had been subdivided for low density residential allotments. In the 1970 aerial photograph, dwellings had been constructed at the properties at 36 McKay Avenue and 61 Lucas Avenue. The dwellings at the properties at 63 and 65 Lucas Avenue had been constructed prior to 1998. The residential dwellings at the site were unchanged in size and layout since they were built, with the exception of the dwelling at 36 McKay Avenue which had been removed and a new dwelling constructed in 2015. During the construction period, soil disturbance potentially occurred in the area to the south-east of the dwelling at 36 McKay Avenue.

No evidence of commercial / industrial use of the site and/or large scale contaminating activities were expected to have occurred. The review of the aerial photographs identified that the layout of the site buildings changed with the removal of the poultry sheds and the removal / construction of the dwelling at 36 McKay Avenue. Based on the age of construction of former and current site buildings (prior to 1985), there was the potential for current and/or former structures, and therefore site soils, to contain hazardous building materials such as lead paint / asbestos. Evidence of earthworks was identified at the site, especially in the area to the east and south of the dwelling at 36 McKay Avenue. Based on the review of historical information, AG considered gross

contamination across the site is unlikely, however there is the potential for contamination in areas of fill material (considered possible due to the observed earthworks).

#### The AECs identified included:

- the potential for hazardous building materials to have been used in former / current site buildings;
- the potential for contamination in the fill material (if any) placed to level the front yards; and
- the potential for contamination of near-surface soils due to the construction / demolition of former / current site structures which had the potential to contain hazardous materials.

During the site inspection, all site buildings appeared to be in a good condition with no observed ACM, however foreign materials were observed in surface soils in the area to the east and south of the dwelling at 36 McKay Avenue. Based on the proposed development including the removal of soils for the construction of two underground basements, it is anticipated that the fill material across the site will be removed off-site to an appropriately licensed waste disposal facility.

It was therefore highly likely that any contamination in fill material at the site (if present) would be removed during basement construction. AG consider that gross contamination is not likely to be present at the site such that the site would be unable to be made suitable for the proposed development. If contamination was present, the proposed development would likely result in contamination (if any) to be removed to a licensed waste disposal facility.

It is recommended that prior to demolition of current site structures, a hazardous building materials survey (HAZMAT) should be completed. A Stage 2 ESA should be completed in accordance with NEPC (2013) and site soils should be appropriately classified for off-site disposal in accordance with the *NSW EPA Waste Classification Guidelines* (NSW EPA 2014).

#### 1.0 INTRODUCTION

#### 1.1 Background

Alliance Geotechnical Pty Ltd (AG) was engaged by A & K Engineering Pty Ltd on behalf of Mounir & Rabick Tamer, Fouad Hebous and Ahmed Tabbah (the clients), to conduct a Preliminary Site Investigation (PSI) (contamination assessment) at 61, 63 & 65 Lucas Avenue and 36 McKay Avenue, Moorebank, NSW (see **Figure 2.1**). The allotments (herein referred to as 'the site') were legally identified as Lots 20, 21, 22 & 23 in Deposited Plan (DP) 236405, and covered an area of approximately 2,880 m<sup>2</sup>. The site boundary is shown in **Figure 2.2**.

At the time of reporting, the site was used for low density residential purposes, comprising four separate residential allotments. The proposed development includes the removal of all site buildings, excavation of soils for off-site disposal, and construction of a residential flat building with two underground basements for car parking. Proposed plans of the development are included in **Appendix A**. A preliminary site investigation (PSI) was required to support the development application (DA).

This report documents the findings of the environmental tasks completed by AG, including reviews of historical information, statutory notices and field observations. Based on the investigation, conclusions are drawn regarding the potential for site contamination, with recommendations for additional action, if necessary.

The investigation has been developed in general accordance with relevant guidelines made or approved by the NSW Environment Protection Authority (EPA) including the *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013* (NEPC 2013) and *State Environmental Planning Policy No. 55 – Remediation of Land* (SEPP 55).

#### 1.2 Objective

The main objective of this investigation was to assess the potential for soil and groundwater contamination on the site, based on a review of site setting, historical land uses and a site inspection.

#### 1.3 Scope of Work

The scope of works comprised:

- reviews of regional topographic, geological and soil landscape maps;
- assessment of local hydrogeological conditions, beneficial uses and likely flow direction, including a search for groundwater data from registered water supply bores within a 1 km radius of the site;
- reviews of land titles information and historical aerial photographs archived by the NSW Land and Property Information (LPI);
- a review of the NSW Environment Protection Authority (EPA) public registers to confirm that there
  were no statutory notices on any parts of the site under the Contaminated Land Management Act 1997
  and the Protection of the Environment Operations Act 1997 (POEO Act 1997);
- a site walkover inspection, designed to observe landscape characteristics and check for indicators of actual/potential contamination; and
- interpretation of the available site history/site setting information and field observations and compilation of a final report, including a statement regarding the potential for contamination to exist at the site.

#### 2.0 SITE LOCATION AND IDENTIFICATION

#### 2.1 Site Details

The site was located at 61 - 65 Lucas Avenue & 36 McKay Avenue, Moorebank, NSW and was legally identified as Lots 20 to 23 in Deposited Plan (DP) 236405 (refer to **Figure 2.1**). The site covered an area of approximately 2,880 m<sup>2</sup>. The approximate geographic coordinates of the centre of the site were 33.93224 S, 150.95280 E.

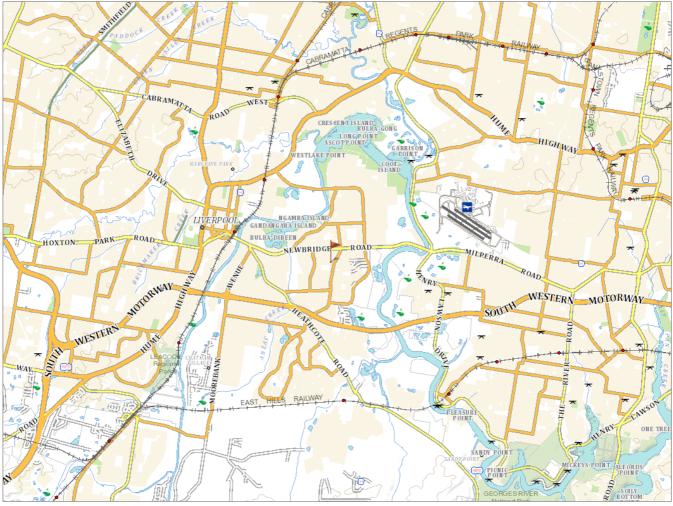


Figure 2.1: Locality Map

#### 2.2 Site Features

At the time of inspection, the site was consisted of four (4) low density residential properties. The properties all comprised dwellings with driveways, garages and grass lawns. No asbestos containing material (ACM) was observed on the ground surface of the site. Suspected fill material (foreign materials in surface soils) was observed in the front yard of 36 McKay Avenue. The site features are shown in **Figure 2.2** below and are discussed further in **Section 4**. For site photographs, refer to **Appendix B**.



Figure 2.2: Site Layout and Features

#### 3.0 SITE HISTORY

#### 3.1 Current and Proposed Land Use

The site is currently used for residential purposes and the site is proposed to be redeveloped as a multi-storey high density residential unit building. The proposed development includes the removal of all site buildings, excavation of soils for off-site disposal, and construction of a residential unit building with two underground basements for car parking. Proposed plans of the development are included in **Appendix A**.

#### 3.2 Historical Site Use

The historical site uses were identified by reviewing the former land owners on the land title records. The land title records were sourced from Advanced Legal Searchers and are summarised in **Table 3.1** below. For further reference, the land title records are included in **Appendix C**. At the time of reporting, only the titles for the properties at 36 McKay Avenue (Lot 20 DP 236405) and 61 Lucas Avenue (Lot 23 DP 236405) were available.

**Table 3.1: Historical Land Use Summary** 

Time Period	Site Owner	Land Use				
61 Lucas Avenue (Lo	61 Lucas Avenue (Lot 23 DP 236405)					
1916 – 1924	The Church of England Property Trust Diocese of Sydney	Vacant				
1924 – 1930	The Greenacre Park Limited	Vacant				
1930 – 1944	New Bankstown Limited	Vacant				
1944 – 1967	Charles Joseph Nelson Pashley, poultry farmer	Rural / Residential				
1967 – 1968	Wood Green Estates Pty Limited	Residential				
1968 – 2005	Wolfgang Gerard Joseph Gaertner, electrical contractor	Residential				
	Barbara Mae Gartner, his wife/widow					
2005 – to date	John Jeffrey Landy	Residential				
	Diane Sonja Lehti (later Landy)					
36 McKay Avenue (L	ot 20 DP 236405)					
1916 – 1924	The Church of England Property Trust Diocese of Sydney	Vacant				
1924 – 1930	The Greenacre Park Limited	Vacant				
1930 – 1946	New Bankstown Limited	Vacant				
1946 – 1947	Glen William Gardner, iron worker	Residential / minor industrial				
1947 – 1967	Daphne Maud Pashley, wife of Charles Joseph Nelson	Rural / Residential				
	Pashley, poultry farmer					
1967 – 1968	Wood Green Estates Pty Limited	Residential				
1968 – 1970	Rodlin Pty Ltd	Unknown				
1970 – 1985	Leshe Long, metal polisher	Residential				
	Juan Ann Long, his wife					
1985 – 1988	Themis Costi	Residential				
1988 – 2002	Vasko Jolevski	Residential				
	Lenka Jolevski					
2002 – 2007	Young Ran Lee	Residential				
	Jae Won Jang					
2007 – 2017	Daniel Scott Wheeler	Residential				
	Allyson Moira Povse					
2017 – to date	Mounir Tamer	Residential				
	Rabick Tamer					
	Fouad Hebous					
	Ahmed Tabbah					

Based on the certificate of titles search, the site was likely vacant until c. 1944, after which it was used for rural residential purposes with the potential for minor industrial activities. The site was likely subdivided for residential land use in 1967, and has remained residential since then.

#### 3.3 Surrounding Land Use

The current land use of the surrounding areas included the following:

- North: Harvey Avenue, beyond which was low density residential dwellings;
- East: Lucas Avenue, beyond which was low density residential dwellings and light commercial (restaurants & library) to the south-east;
- South: McKay Avenue to the south, beyond which was a school (Nuwarra Public School);
- West: Low density residential land-use.

The historical land use of surrounding areas is discussed further in **Section 3.4**.

#### 3.4 Review of Aerial Photographs

A review of aerial photographs from 1943, 1955, 1965, 1970, 1998, 2007 and 2015 was conducted. A discussion of the imagery has been included below:



The site was observed to consist of vacant bushland. The site and surrounding areas were heavily vegetated with native trees. Further to the north, small rural residential properties were observed adjacent to a road (the current Newbridge Road). A road (the current Nuwarra Road) was observed to the east and comprised an unsealed road.

#### 1955



The exact location of the site could not be identified due to the lack of common features compared with the current day layout. However, the site was likely in an area that had been cleared with small structures (potentially poultry sheds) constructed. The vegetation in the surrounding areas had been removed and the land use generally comprised rural residential with pockets of low density residential dwellings.

#### 1965



The site appeared generally similar to the previous aerial photograph, however some of the small dwellings that were previously observed in the area of the site appeared to have been removed. The surrounding areas were

generally similar to the previous aerial with the exception of a larger building replacing a number of smaller building to the south of the site.

1970



The site was observed to have been subdivided into the four allotments that comprise the current site. A residential dwelling had been constructed at 36 McKay Avenue and 63 Lucas Avenue. In surrounding areas to the north, east and west, further subdivision and construction of low density residential dwellings was observed. A commercial building had been constructed to the south-east, in a similar location to the present day library.

1998



Buildings appeared to have been constructed at 61 and 65 Lucas Avenue. A shed/garage had been constructed at 36 McKay Avenue. A shed and swimming pool had been constructed and 63 Lucas Avenue. A number of large buildings (the current location of Nuwarra Public School) were evident to the south of the site. A number of commercial buildings were constructed in the area to the south-east.

#### 2007



The site and surrounding areas appeared generally similar to the previous aerial photograph.

#### **2015**



The dwelling at 36 McKay Street appeared to have been removed and a newer dwelling constructed. The area to the south-east of the new dwelling appeared to have been filled. The remainder of the site and surrounding

areas appeared similar to the previous aerial photograph. The site appeared generally consisted with the layout observed in the site inspection discussed in **Section 4.1** (i.e. the current site layout).

#### 3.5 Permits, Licenses, Approvals and Complaint History

A review of the NSW EPA List of Contaminated Sites was completed on 31<sup>st</sup> May 2017, the search results are shown in **Appendix D**. The results indicated that the site was not the subject of notifications to the NSW EPA under Section 60 of the *Contaminated Land Management Act 1997* (CLM Act 1997).

A review of the NSW EPA Record of Notices was completed on 31<sup>st</sup> May 2017, the search results are shown in **Appendix D**. The results indicated that the site was not the subject of notifications to the NSW Office of Environment and Heritage under Section 58 of the CLM Act 1997.

A review of the public register under the *Protection of the Environment Operations Act 1997* (the POEO Act) was completed on 31<sup>st</sup> May 2017, the search results are shown in **Appendix D**. The results indicated that no environment protection licenses, penalty notices issued by the NSW EPA, convictions under the POEO Act or pollution studies and reduction programs applied to the site.

#### 3.6 Site History Summary

Based on the land titles information, it appeared that the site was vacant until approximately 1944, after which it was used for rural residential purposes. The site was owned by a poultry farmer until 1967, after which it was transferred to Wood Green Estates Pty Ltd, who likely subdivided the site for sale as residential allotments. Following 1968, the site was owned by a number of individuals and couples for residential land use.

A review of the aerial photography identified that the site was vacant bushland until sometime between 1943 and 1955. In the 1955 aerial photograph, a number of small structures were observed at the site, consistent with the size and layout of poultry sheds. This coincides with the time that the site was owned by a poultry farmer. By 1970, the former structures had been removed and the site had been subdivided for low density residential allotments. In the 1970 aerial photograph, dwellings had been constructed at the properties at 36 McKay Avenue and 61 Lucas Avenue. The dwellings at the properties at 63 and 65 Lucas Avenue had been constructed prior to 1998. The residential dwellings at the site were unchanged in size and layout since they were built, with the exception of the dwelling at 36 McKay Avenue which had been removed and a new dwelling constructed in 2015. During the construction period, soil disturbance potentially occurred in the area to the south-east of the dwelling at 36 McKay Avenue.

No evidence of commercial / industrial use of the site and/or large scale potentially contaminating activities were expected to have occurred. The review of the aerial photographs identified that the layout of the site buildings changed with the removal of the poultry sheds and the removal / construction of the dwelling at 36 McKay Avenue. Based on the age of construction of former and current site buildings (prior to 1985), there was the potential for current and/or former structures, and therefore site soils, to contain hazardous building materials such as lead paint / asbestos. Evidence of earthworks was identified at the site, especially in the area to the east and south of the dwelling at 36 McKay Avenue. Based on the review of historical information, AG considered gross contamination across the site is unlikely, however there is the potential for contamination in areas of fill material.

#### 4.0 SITE CONDITION AND SURROUNDING ENVIRONMENT

#### 4.1 Site Inspection

A suitably qualified and experienced environmental scientist from AG inspected the site on 31<sup>st</sup> May 2017 with the following observations made (refer to **Appendix B** for site photographs):

- The dwelling at 36 McKay Avenue appeared to be a new build (< 5 years old), constructed with cement render walls and corrugated iron roofing. In the area to the east and south of the dwelling, fill material was observed in the form of foreign materials within surface soils. The foreign materials included bricks and other building materials. No suspected ACM was observed.
- The dwellings at 61, 63 and 65 Lucas Avenue all comprised brick wall structures with tiled roofing. The property at 63 Lucas Avenue also contained a swimming pool. The property at 61 Lucas Avenue contained a standalone, two storey garage/shed. The front yards of these properties were grassed with minor bare patches, likely a results of insufficient water / nutrients rather than contamination.
- The interiors of all site buildings and backyards of the properties that made up the site were inaccessible at the time of inspection. The exterior of the dwellings appeared to be in a good condition, however minor paint chipping was observed on the older structures of the site;
- There was no observed storage of dangerous goods or chemicals (including oils, lubricants and/or pesticides). There was no evidence of fuel underground storage tanks (USTs) or aboveground storage tanks (ASTs). The paved areas were observed to be in a good condition with no observed staining.

#### 4.2 Topography and Site Drainage

The site was located on a relatively flat gradient (< 2%) sloping down in a westerly direction. Information on regional topographic conditions, referenced from the Central Mapping Authority of NSW Penrith 9130 Topographic Map 1: 25,000 (CMA, 1986), was consistent with this description and indicated that the property's elevation was approximately 20 m above sea level (i.e. 20 m Australian Height Datum (AHD)).

In the area of site buildings, precipitation is anticipated to be captured by the gutters and drainage systems. As the site was generally unsealed, precipitation was anticipated to infiltrate surface soils until saturation. In the areas of buildings, gutters and drainage, rainwater was likely to divert to the street stormwater system.

The nearest surface water receptor was Anzac Creek, a creek with reconstructed banks, located approximately 960 m to the west of the site. Anzac Creek flows north approximately 500 m into Lake Moore (attached to Georges River), with runoff and groundwater at the site likely to find its way into this system.

#### 4.3 Regional Geology and Soil Landscape

Information on regional sub-surface conditions, referenced from the Geological Survey of NSW / Department of Mineral Resources map of Penrith (scale 1: 100,000 Geological Series Sheet 9130 (GS NSW / DMR, 1983), indicated that the site overlies Wianamatta Group Ashfield Shale (Rwa), which is characterised by shale, dark grey to black claystone-siltstone and fine sandstone-siltstone laminite.

A review of the NSW National Resource Atlas Acid Sulphate Soil Risk Maps for Liverpool indicated that the site overlies an area of "no known occurrence" for which acid sulphate soils are not known or expected to occur.

A review of the Department of Infrastructure, Planning and Natural Resources, Salinity Potential in Western Sydney 2002 map, indicated the site is located within an area described as moderate salinity potential.

Moderate salinity potential are "Areas on Wianamatta Group Shale and Tertiary Alluvial Terraces. Scattered areas of scalding and indicator vegetation have been noted but no concentrations have been mapped. Saline areas may occur in this zone, which have not yet been identified or may occur if risk factors change adversely."

#### 4.4 Hydrogeology

A review of the NSW Office of Water groundwater database indicated that one registered groundwater bore (GW102053) was located within a 1.0 km radius of the site, refer to search results in **Appendix E**. Groundwater monitoring well GW102053 was located approximately 600 m to the west, likely in the vicinity of Anzac Creek. The depth to groundwater was approximately 2.4 m below ground surface (bgs) within a sandy clay layer.

Due to the distance of the registered groundwater monitoring well to the site, and the well likely located near a creek, no conclusions were able to be made regarding the depth to groundwater at the site. Groundwater could potentially be present at a depth of 2.5 m bgs, however is likely to be deeper due to the distance from the nearest water bodies. Groundwater was expected to flow in the direction of the local topography i.e. towards the west.

#### 5.0 INITIAL CONCEPTUAL SITE MODEL

This initial conceptual site model has been prepared in accordance with guidance provided in *Section 4 of Schedule B2 of the National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013* (NEPC 2013) and the *NSW EPA Guidelines for Consultants Reporting on Contaminated Sites* (EPA 1997).

#### 5.1 Known and Potential Sources of Contamination

Based on the historical information and site observations, the following potential sources of contamination were identified:

- the potential for hazardous building materials to have been used in former / current site buildings; and
- the potential for contamination in fill material of unknown sources;
- the potential for contamination due to the construction / demolition of former / current site structures which had the potential to contain hazardous materials.

The contaminants of potential concern (COPCs) at the site included the following:

- arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc (metals);
- asbestos;
- polycyclic aromatic hydrocarbons (PAH);
- total recoverable hydrocarbons (TRH); and
- benzene, toluene, ethylbenzene, and xylene (BTEX).

#### 5.2 Potentially Affected Media

The following media are considered to be potentially contaminated:

- fill material due to the potential for hazardous materials to have been used in construction of current and/or former structures, and the potential for those hazardous materials to have impacted soils; and
- fill material from unknown sources (if any) that may have been impacted prior to import to the site; and
- natural soils underlying the fill material if contaminants in the fill material have percolated / leached downwards; and
- natural material that may have been impacted by hazardous materials from the current and/or former structures.

Groundwater is not considered to be a potentially contaminated media due to the expected low permeability of the soils at the site (i.e. clays, shale and sandstone), and no observed up-gradient sources of contamination.

#### 5.3 Human and Ecological Receptors

Given the proposed high density residential land use of the site, the potential human receptors include:

- Workers conducting activities at the site (especially during redevelopment and any future maintenance activities), who may potentially be exposed to COPCs through:
  - o direct contact with impacted soils within excavations; and/or
  - o Inhalation of dusts/fibres associated with impacted soils.

- Occupant of the site who may potentially be exposed to COPCs on green space areas through:
  - direct contact with impacted soils; and/or
  - o Inhalation of dusts/fibres associated with impacted soils.

The potential ecological receptors include flora species to be established on the vegetated areas of the site.

#### 5.4 Potential and Complete Exposure Pathways

Based on the COPCs identified, potential exposure pathways at the site include:

- potential dermal, inhalation and oral exposure to impacted soils present at shallow depths and/or accessible by future excavations at the site; and/or
- potential contaminant uptake by vegetation.

#### 5.5 Discussion

The AECs identified included:

- the potential for hazardous building materials to have been used in former / current site buildings; and
- the potential for contamination in the fill material (if any) placed to level the front yards; and
- the potential for contamination of near-surface soils due to the construction / demolition of former / current site structures which had the potential to contain hazardous materials.

During the site inspection, all site buildings appeared to be in a good condition with no observed ACM, however foreign materials were observed in surface soils in the area to the east and south of the dwelling at 36 McKay Avenue. Based on the proposed development including the removal of soils for the construction of two underground basements, it is anticipated that the fill material across the site will be removed off-site to an appropriately licensed waste disposal facility.

It was therefore highly likely that any contamination in fill material at the site (if present) would be removed during basement construction. AG consider that contamination is not likely to be present at the site such that the site would be unable to be made suitable for the proposed development. If contamination was present, the proposed development would enable any contamination to be removed to a licensed waste disposal facility.

It is recommended that prior to demolition of current site structures, a hazardous building materials survey (HAZMAT) should be completed. A Stage 2 ESA should be completed in accordance with NEPC (2013) and site soils should be appropriately classified for off-site disposal in accordance with the *NSW EPA Waste Classification Guidelines* (NSW EPA 2014).

#### 6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this assessment and the Limitations in **Section 7**, it was concluded that the site was likely to be able to be made suitable for the proposed land use. There was the potential for contamination of near surface soils and fill material due to the potential for hazardous building materials (asbestos, lead paint etc.) to have been used in construction of current and/or former structures. Due to the proposed development including the removal of all site structures and excavation of site soils for two levels of underground basement, contamination at the site (if present) was likely to be removed during redevelopment.

The following was recommended:

- Prior to demolition of site structures, a hazardous building materials survey (HAZMAT) should be completed.
- A Stage 2 Environmental Site Assessment (ESA) should be completed. It was further recommended that
  the Stage 2 ESA should be completed following demolition of site structures to ensure soil samples are
  collected from the building footprints of the site structures; and
- Soil sample collection across the site to appropriately classify the soils to be excavated, in accordance with the NSW EPA Waste Classification Guidelines 2014 (NSW EPA 2014).

#### 7.0 STATEMENT OF LIMITATIONS

This Preliminary Site Investigation evaluated the likelihood of the site contamination resulting from previous uses of the site. The appraisal was limited to visual inspection of ground level conditions and a review of anecdotal and historical information that was available from government authorities as outlined in the report. It is assumed that this information was accurate and complete.

Sampling and laboratory analysis of the site materials were not conducted as part of this assessment. Although this methodology is generally consistent with current industry practice for such appraisal assessments, no warranty or guarantee of site conditions is given or intended.

This report has been prepared by Alliance Geotechnical for the sole use of Mounir & Rabick Tamer, Fouad Hebous and Ahmed Tabbah. No responsibility is accepted for the use of any part of this report in any other context or for any other purpose or by other third parties. This report does not purport to provide legal advice.

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Should you require additional information or clarification regarding any aspect of this report, please call the undersigned on 1800 188 288.

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#### 8.0 REFERENCES

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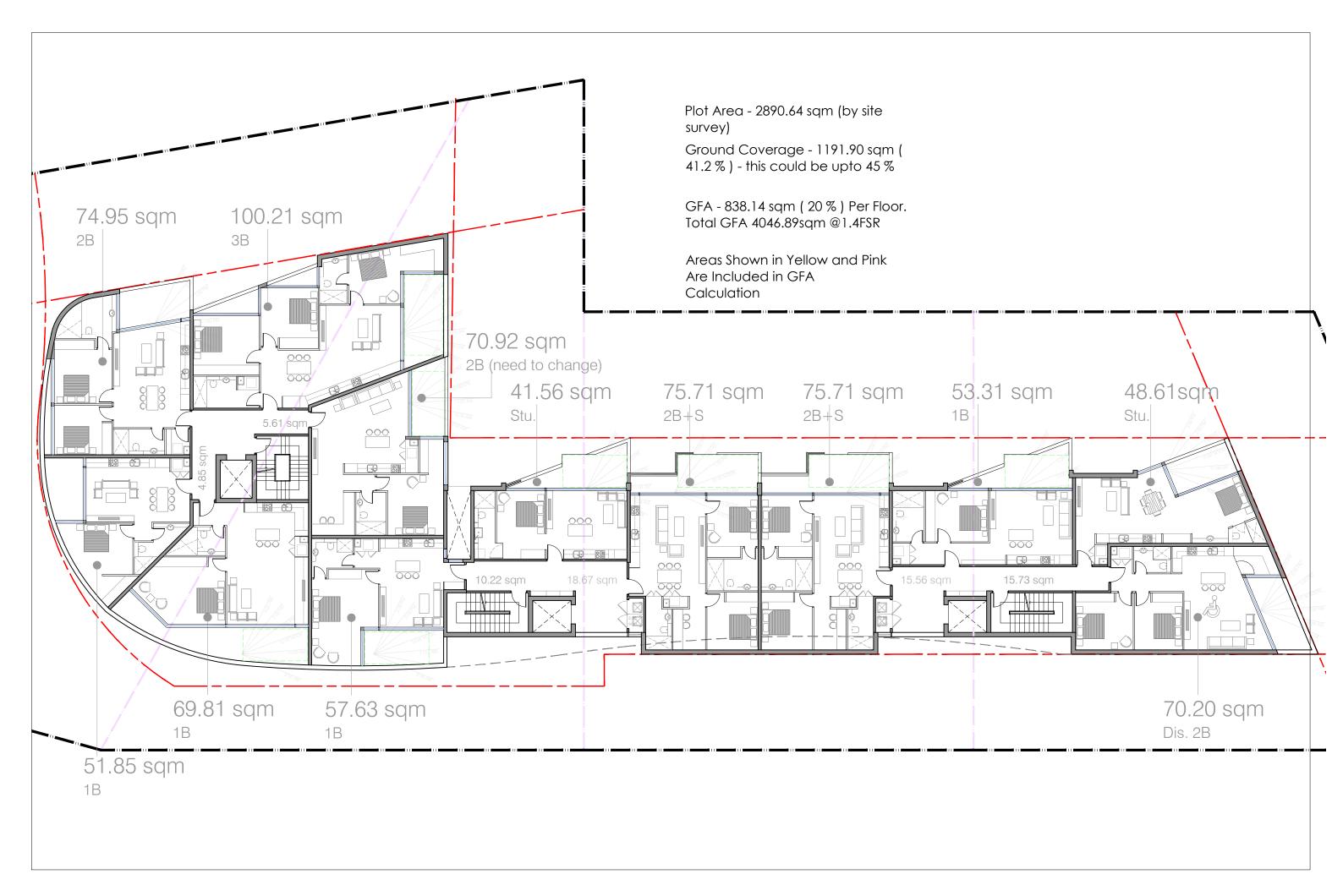
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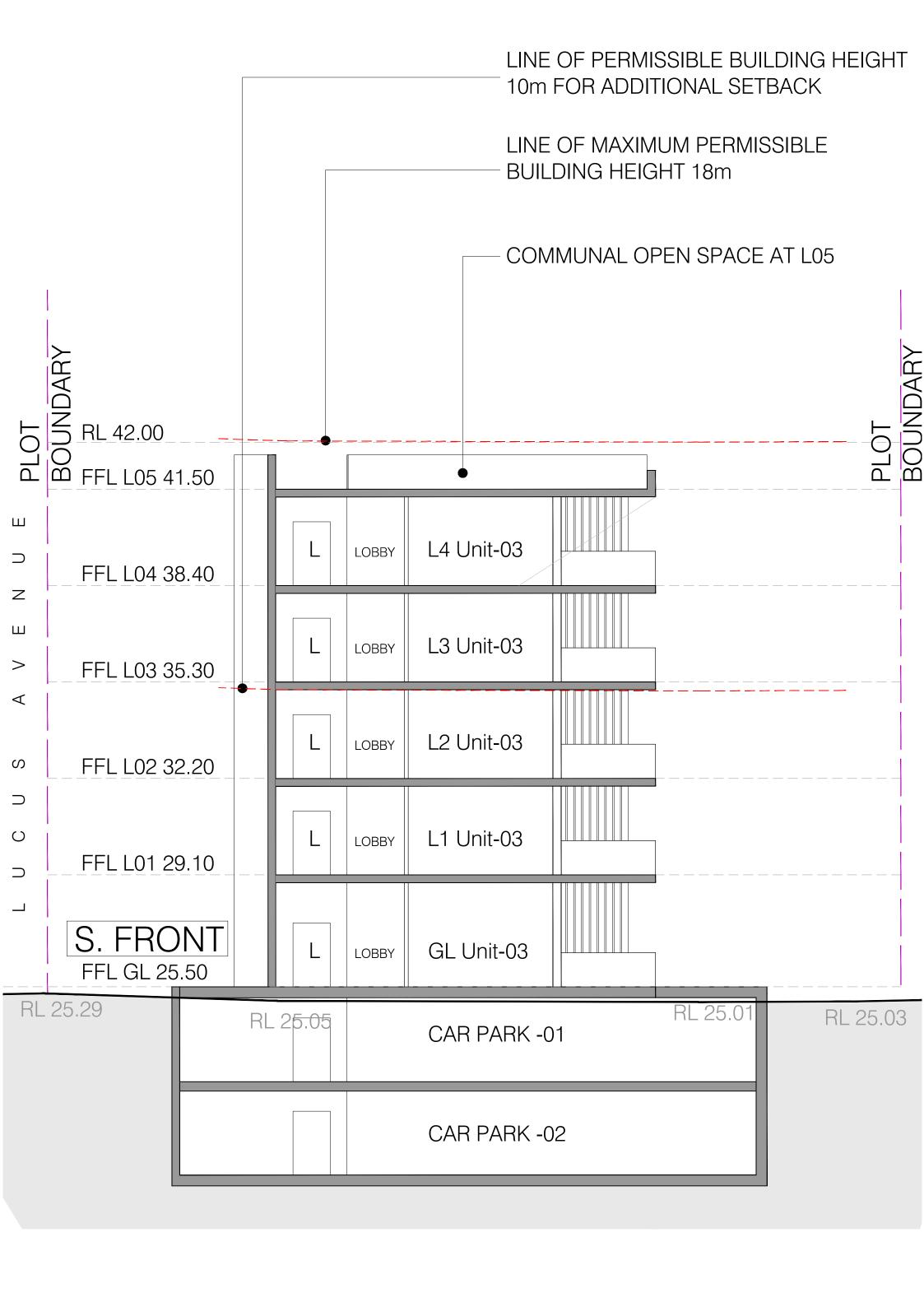
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#### **APPENDIX A**

#### **PROPOSED PLANS**





#### **APPENDIX B**

#### **SITE PHOTOGRAPHS**



**Photograph 1**: Side of the building at 36 McKay Avenue, looking south. The area to the left of the building appeared to consist of fill material. Bricks and other foreign materials were observed on the ground surface in this area.



**Photograph 2**: The dwelling at 65 Lucas Avenue, looking north-west.



**Photograph 3**: The dwelling at 65 Lucas Avenue, looking west.



**Photograph 4**: The dwelling at 63 Lucas Avenue, looking north-west. The dwelling was in the process of being vacated at the time of inspection.



**Photograph 5**: The dwelling at 61 Lucas Avenue, looking west.



Photograph 6: The dwelling and garage at 61 Lucas Avenue, looking south.

#### **APPENDIX C**

LAND TITLES INFORMATION (SUPPLIED BY ADVANCED LEGAL SEARCHERS PTY LTD)

### ADVANCE LEGAL SEARCHERS PTY LTD

(ACN 147 943 842) ABN 82 147 943 842

 18/36 Osborne Road,
 Telephone:
 +612 9977 6713

 Manly NSW 2095
 Mobile:
 0412 169 809

Email: search@alsearchers.com.au

29th May, 2017

ALLIANCE GEOTECHNICAL PO Box 1028, ST. MARYS NSW 1790

**Attention: Sam Scully** 

RE 61 – 65 Lucas Avenue & 36 McKay Street, Moorebank

Note 1: Lot 23 DP 236405 (page 1) Note 2: Lot 20 DP 236405 (page 4)

Note 1:

#### **Current Search**

Folio Identifier 23/236405 (title attached) DP 236405 (plan attached) Dated 26<sup>th</sup> May, 2017 Registered Proprietor: **DIANE SONJA LANDY** 

# Title Tree Lot 23 DP 236405

Folio Identifier 23/236405

Certificate of Title Volume 10837 Folio 172

Certificate of Title Volume 10420 Folio 72

Certificate of Title Volume 5435 Folio 219

Certificate of Title Volume 5169 Folio 183

Certificate of Title Volume 3646 Folio 136

Certificate of Title Volume 2720 Folio 70

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# **Summary of Proprietor**(s) **Lot 23 DP 236405**

Year Proprietor(s)

	(Lot 23 DP 236405)
2013 – todate	Diane Sonja Landy
2005 – 2013	John Jeffrey Landy
	Diane Sonja Lehti
2005 – 2005	Barbara Mae Gaertner, widow
1994 – 2005	Wolfgang Gerard Joseph Gaertner, electrical contractor
	Barbara Mae Gaertner, his wife
1988 – 1994	Wolfgang Gerhardt Joseph Gaertner, electrical contractor
	Barbara Mae Gaertner, his wife
	(Lot 23 DP 236405 – CTVol 10837 Fol 172)
1968 – 1988	Wolfgang Gerhardt Joseph Gaertner, electrical contractor
	Barbara Mae Gaertner, wife
1968 – 1968	Wood Green Estates Pty. Limited.
	(Lot 2 DP 230908 – CTVol 10420 Fol 72)
1967 – 1968	Wood Green Estates Pty. Limited.
1966 – 1967	Charles Joseph Nelson Pashley, poultry farmer
	(Lot 199 DP 19128 – Area 3 Acres 2 Roods 23 <sup>1</sup> / <sub>4</sub> Perches – CTVol
	5435 Fol 219)
1944 – 1966	Charles Joseph Nelson Pashley, poultry farmer
	(Lots 136 to 202 DP 19128 and other lands – CTVol 5169 Fol 183)
1940 – 1944	New Bankstown Limited
	(Part Portion 31 Parish Holsworthy and other lands – Area 1125
	Acres 7 <sup>3</sup> / <sub>4</sub> Perches – CTVol 3646 Fol 136)
1930 – 1940	New Bankstown Limited
1924 – 1930	The Greenacre Park Limited
	(Part Portion 31 Parish Holsworthy and other lands – Area 908 Acres
	35 ¾ Perches – CTVol 2720 Fol 70)
1916 – 1924	The Church of England Property Trust Diocese of Sydney

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#### Note 2:

#### **Current Search**

Folio Identifier 20/236405 (title attached)
DP 236405 (plan attached)
Dated 26<sup>th</sup> May, 2017
Registered Proprietor:
MOUNIR TAMER
FOUAD HEBOUS
AHMED TABBAH
RADICK TAMER

## Title Tree Lot 20 DP 236405

Folio Identifier 20/236405

Certificate of Title Volume 10837 Folio 169

Certificate of Title Volume 10420 Folio 72

Certificate of Title Volume 5603 Folio 29

Certificate of Title Volume 5169 Folio 183

Certificate of Title Volume 3646 Folio 136

Certificate of Title Volume 2720 Folio 70

# **Summary of Proprietor**(s) **Lot 20 DP 236405**

Year Proprietor(s)

	(Lot 20 DP 236405)
2017 – todate	Mounir Tamer
	Fouad Hebous
	Ahmed Tabbah
	Rabick Tamer
2007 - 2017	Daniel Scott Wheeler
	Allyson Moira Povse
2002 - 2007	Young Ran Lee
	Jae Won Jang
1988 - 2002	Vasko Jolevski
	Lenka Jolevski
	(Lot 20 DP 236405 – CTVol 10837 Fol 169)
1988 – 1988	Vasko Jolevski
	Lenka Jolevski
1985 – 1988	Themis Costi
1970 – 1985	Leshe Long, metal polisher
	Juan Ann Long, his wife
1968 – 1970	Rodlin Pty Limited
1968 – 1968	Wood Green Estates Pty. Limited
	(Lot 2 DP 230908 – CTVol 10420 Fol 72)
1967 – 1968	Wood Green Estates Pty. Limited.
1966 – 1967	Daphne Maud Pashley, wife of Charles Joseph Nelson Pashley, poultry
	farmer
	(Lot 198 DP 19128 – Area 3 Acres 1 Rood 38 <sup>1</sup> / <sub>4</sub> Perches – CTVol 5603 Fol 29)
1947 – 1966	Daphne Maud Pashley, wife of Charles Joseph Nelson Pashley, poultry
	farmer
1946 – 1947	Glen William Gardner, iron worker
	(Lots 136 to 202 DP 19128 and other lands – CTVol 5169 Fol 183)
1940 – 1946	New Bankstown Limited
	(Part Portion 31 Parish Holsworthy and other lands – Area 1125
	Acres 7 <sup>3</sup> / <sub>4</sub> Perches – CTVol 3646 Fol 136)
1930 – 1940	New Bankstown Limited
1924 – 1930	The Greenacre Park Limited
	(Part Portion 31 Parish Holsworthy and other lands – Area 908 Acres
	35 ¾ Perches – CTVol 2720 Fol 70)
1916 – 1924	The Church of England Property Trust Diocese of Sydney

\*\*\*\*

#### **APPENDIX D**

#### **NSW EPA SEARCH RESULTS**

#### List of NSW Contaminated Sites under Section 58 of the CLM Act 1997

#### Search results

Your search for: Suburb: MOOREBANK

Suburb	Address	Site Name	Notices related to this site
MOOREBA	NK(a) 1 Bapaume ROAD	ABB Australia Pty Ltd	1 current and
			8 former

Page 1 of 1

Matched 9 notices relating to 1 site. Search Again Refine Search

31 May 2017

#### Record of Notices under Section 60 of the CLM Act 1997

MOOREBANK	ABB Australia Pty Ltd (a) 1 Bapaume ROAD	Other Industry	Ongoing maintenance required to manage residual contamination (CLM Act)
MOOREBANK	ABB Australia Pty Ltd 1 Bapaume ROAD	Other Industry	Under assessment
MOOREBANK	Caltex Service Station 2 Bridges ROAD	Service Station	Under assessment
MOOREBANK	Caltex Service Station 216 Newbridge ROAD	Service Station	Under assessment
MOOREBANK	Joyce Foam Products 5-9 Bridges ROAD	Chemical Industry	Regulation under CLM Act not required
MOOREBANK	Former Landfill Site Newbridge ROAD	Landfill	Under assessment

#### Search of the POEO Public Register

#### Search results

Your search for: General Search with the following criteria

Suburb - moorebank

returned 71 results

Export to exc	<u>cel</u>	1 of 4 Pages		[	Search Again
<u>Number</u>	<u>Name</u>	<u>Location</u>	Туре	<u>Status</u>	<u>Issued date</u>
<u>753</u>	ABB AUSTRALIA PTY LIMITED	3 BAPAUME ROAD, MOOREBANK, NSW 2170	POEO licence	No longer in force	n 23 Mar 2000
1023003	ABB AUSTRALIA PTY LIMITED	3 BAPAUME ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	03 Dec 2002
1048430	ABB AUSTRALIA PTY LIMITED	3 BAPAUME ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	03 Jun 2005
20002	ABB AUSTRALIA PTY LIMITED	Bapaume Road, MOOREBANK, NSW 2170	POEO licence	Issued	04 Oct 2011
<u>2639</u>	ABEL METAL SERVICES PTY. LTD.	16-18 KELSO CRESCENT, MOOREBANK, NSW 2170	POEO licence	Issued	29 Dec 2000
1004321	ABEL METAL SERVICES PTY. LTD.	16-18 KELSO CRESCENT, MOOREBANK, NSW 2170	s.91 Clean Up Notice	Issued	14 Feb 2001
1005155	ABEL METAL SERVICES PTY. LTD.	16-18 KELSO CRESCENT, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	19 Mar 2001
1020199	ABEL METAL SERVICES PTY. LTD.	16-18 KELSO CRESCENT, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	10 Sep 2002
1030032	ABEL METAL SERVICES PTY. LTD.	16-18 KELSO CRESCENT, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	24 Oct 2003
1101610	ABEL METAL SERVICES PTY. LTD.	16-18 KELSO CRESCENT, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	14 Jun 2009
<u>1524830</u>	ABEL METAL SERVICES PTY. LTD.	16-18 KELSO CRESCENT, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	15 Sep 2014
<u>4612</u>	BENEDICT INDUSTRIES PTY LIMITED	146 NEWBRIDGE ROAD, MOOREBANK, NSW 2170	POEO licence	Issued	24 Nov 2000
10490	BENEDICT INDUSTRIES PTY LIMITED	146 Newbridge Road, MOOREBANK, NSW 2170	POEO licence	Issued	06 Feb 2001
<u>1014871</u>	BENEDICT INDUSTRIES PTY LIMITED	146 NEWBRIDGE ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	11 Mar 2002
1020599	BENEDICT INDUSTRIES PTY LIMITED	146 NEWBRIDGE ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	17 Sep 2002
<u>1031573</u>	BENEDICT INDUSTRIES PTY LIMITED	146 NEWBRIDGE ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	05 Dec 2003
1034195	BENEDICT INDUSTRIES PTY LIMITED	146 Newbridge Road, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	05 Feb 2004
1040337	BENEDICT INDUSTRIES PTY LIMITED	146 Newbridge Road, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	03 Sep 2004
1040259	BENEDICT INDUSTRIES PTY LIMITED	146 NEWBRIDGE ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	03 Sep 2004
1046512	BENEDICT INDUSTRIES PTY LIMITED	146 NEWBRIDGE ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	24 May 2005

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31 May 2017

#### Search results

Your search for: General Search with the following criteria

Suburb - moorebank

returned 71 results

Export to exc	<u>cel</u>	2 of 4 Pages		[	Search Again
<u>Number</u>	<u>Name</u>	<u>Location</u>	Туре	<u>Status</u>	<u>Issued date</u>
<u>1051596</u>	BENEDICT INDUSTRIES PTY LIMITED	146 Newbridge Road, MOOREBANK, NSW 2170	s.91 Clean Up Notice	Issued	05 Oct 2005
1093200	BENEDICT INDUSTRIES PTY LIMITED	146 NEWBRIDGE ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	29 Oct 2008
1093739	BENEDICT INDUSTRIES PTY LIMITED	146 Newbridge Road, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	26 Nov 2008
1120628	BENEDICT INDUSTRIES PTY LIMITED	146 NEWBRIDGE ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	18 Feb 2011
308576479	BENEDICT INDUSTRIES PTY LIMITED	146 Newbridge Road, MOOREBANK, NSW 2170	Penalty Notice	Issued	16 Jul 2012
<u>1507242</u>	BENEDICT INDUSTRIES PTY LIMITED	146 Newbridge Road, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	30 Nov 2012
308576611	BENEDICT INDUSTRIES PTY LIMITED	146 Newbridge Road, MOOREBANK, NSW 2170	Penalty Notice	Issued	23 Apr 2013
<u>1514543</u>	BENEDICT INDUSTRIES PTY LIMITED	146 Newbridge Road, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	17 Jun 2013
<u>1532493</u>	BENEDICT INDUSTRIES PTY LIMITED	146 Newbridge Road, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	10 Sep 2015
1207	BERESFORD CONCRETE PRODUCTS PTY LTD	2 FIELD CLOSE, MOOREBANK, NSW 2170	POEO licence	Surrendere	d06 Jun 2000
2091	BORAL RECYCLING PTY LIMITED	NUWARRA ROAD, MOOREBANK, NSW 2170	POEO licence	Surrendere	d11 Nov 1999
1017433	BORAL RECYCLING PTY LIMITED	NUWARRA ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	28 Jun 2002
1048735	BORAL RECYCLING PTY LIMITED	NUWARRA ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	14 Jun 2005
<u>1179</u>	BORAL RESOURCES (NSW) PTY LTD	5 GREENHILLS AVE, MOOREBANK, NSW 2170	POEO licence	No longer in force	n 22 Aug 2000
1199	C&M MASONRY PRODUCTS PTY LTD	20 KELSO CRES, MOOREBANK, NSW 2170	POEO licence	Issued	15 May 2000
<u>1528236</u>	C&M MASONRY PRODUCTS PTY LTD	20 KELSO CRES, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	11 Mar 2015
13333	CLEANAWAY OPERATIONS PTY LTD	22 Centenary Avenue, MOOREBANK, NSW 2170	POEO licence	Surrendere	d06 Dec 2010
<u>2712</u>	CONCRITE PTY LTD	26 SETON ROAD, MOOREBANK, NSW 2170	POEO licence	No longer in force	130 Mar 2000
20883	DEB AUSTRALIA PTY. LTD.	UNIT 1, 1 SECOMBE PLACE, MOOREBANK, NSW 2170	POEO licence	Issued	29 Mar 2017
<u>2356</u>	HOLCIM (AUSTRALIA) PTY LTD	28 REGENT CRESCENT, MOOREBANK, NSW 2170	POEO licence	No longer in force	10 Apr 2000
					4204

<u>1234</u>

31 May 2017

#### Search results

Your search for: General Search with the following criteria

Suburb - moorebank

returned 71 results

Export to ex	<u>cel</u>	3 of 4 Pages		[	Search Again
<u>Number</u>	<u>Name</u>	Location	Туре	<u>Status</u>	<u>Issued date</u>
12344	INTERLINK ROADS PTY LTD	M5 (between Georges River and Camden Valley Way), MOOREBANK, NSW 2170	POEO licence	Surrendere	d04 Aug 2005
<u>3099</u>	JOYCE FOAM PTY LTD	5-9 BRIDGES ROAD, MOOREBANK, NSW 2170	POEO licence	Issued	02 Feb 2000
1004945	JOYCE FOAM PTY LTD	5-9 BRIDGES ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	25 Oct 2001
1025420	JOYCE FOAM PTY LTD	5-9 BRIDGES ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	06 Jun 2003
1052359	JOYCE FOAM PTY LTD	5-9 BRIDGES ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	31 Oct 2005
1055579	JOYCE FOAM PTY LTD	5-9 BRIDGES ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	28 Feb 2006
1076735	JOYCE FOAM PTY LTD	5-9 BRIDGES ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	06 Sep 2007
<u>1085001</u>	JOYCE FOAM PTY LTD	5-9 BRIDGES ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	16 May 2008
1091163	JOYCE FOAM PTY LTD	5-9 BRIDGES ROAD, MOOREBANK, NSW 2170	Load Reduction Agreement	Issued	21 Jul 2009
1118608	JOYCE FOAM PTY LTD	5-9 BRIDGES ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	23 Aug 2010
<u>1529545</u>	JOYCE FOAM PTY LTD	5-9 BRIDGES ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	15 Mar 2016
<u>1541996</u>	JOYCE FOAM PTY LTD	5-9 BRIDGES ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	05 Aug 2016
1549859	JOYCE FOAM PTY LTD	5-9 BRIDGES ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	22 Mar 2017
<u>1551743</u>	JOYCE FOAM PTY LTD	5-9 BRIDGES ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	04 May 2017
<u>11653</u>	KODAK (AUSTRALASIA) PROPRIETARY LIMITED	30 HEATHCOTE ROAD, MOOREBANK, NSW 2170	POEO licence	Surrendere	d29 May 2002
<u>6382</u>	MOOREBANK AEROSOL FILLERS PTY LIMITED	11 CUNNINGHAM STREET, MOOREBANK, NSW 2170	POEO licence	Issued	25 May 2000
1044541	MOOREBANK AEROSOL FILLERS PTY LIMITED	11 CUNNINGHAM STREET, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	19 Feb 2005
1093946	MOOREBANK AEROSOL FILLERS PTY LIMITED	11 CUNNINGHAM STREET, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	23 Jun 2009
<u>1526349</u>	MOOREBANK AEROSOL FILLERS PTY LIMITED	11 CUNNINGHAM STREET, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	27 Nov 2014
20107	NULON PRODUCTS AUSTRALIA PTY LTD	17 Yulong Close, MOOREBANK, NSW 2170	POEO licence	Issued	29 Mar 2012

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31 May 2017

### Search results

Your search for: General Search with the following criteria

Suburb - moorebank

returned 71 results

Export to exc	cel	4 of 4 Pages			Search Again
<u>Number</u>	<u>Name</u>	<u>Location</u>	<u>Туре</u>	<u>Status</u>	<b>Issued date</b>
<u>1532618</u>	NULON PRODUCTS AUSTRALIA PTY LTD	17 Yulong Close, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	09 Oct 2015
<u>1549973</u>	PAPER TRADE PROCESSING (AUST) PTY LTD	49 Heathcote Road, MOOREBANK, NSW 2170	s.55 Licence Refusal	Issued	08 Mar 2017
11637	PLATING 'R US PTY LTD	1 Mitchell Road, MOOREBANK, NSW 2170	POEO licence	No longer in force	15 Mar 2002
1042144	PLATING 'R US PTY LTD	1 Mitchell Road, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	09 Nov 2004
6453	SPHERE HEALTHCARE PTY. LIMITED	12 CHURCH ROAD, MOOREBANK, NSW 2170	POEO licence	Issued	08 Jan 2001
1020328	SPHERE HEALTHCARE PTY. LIMITED	12 CHURCH ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	14 Apr 2003
1072517	SPHERE HEALTHCARE PTY. LIMITED	12 CHURCH ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	04 Mar 2008
1119339	SPHERE HEALTHCARE PTY, LIMITED	12 CHURCH ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	29 Sep 2010
<u>1525673</u>	SPHERE HEALTHCARE PTY. LIMITED	12 CHURCH ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	21 Oct 2014
<u>7281</u>	SUPERIOR RADIATOR SERVICE PTY LTD	12 SETON ROAD, MOOREBANK, NSW 2170	POEO licence	No longer in force	18 Sep 2000
1044418	SUPERIOR RADIATOR SERVICE PTY LTD	12 SETON ROAD, MOOREBANK, NSW 2170	s.58 Licence Variation	Issued	11 Feb 2005

31 May 2017

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#### **APPENDIX E**

# REGISTERED GROUNDWATER BORES WITHIN 1.0 KM OF THE SITE

