



Report Type: Preliminary Site Investigation
Site Address: 94 – 100 Explorers Way, St Clair, NSW
Report Number: 1842/ER-1-1
Report Date: 28th April 2015

Prepared for

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c/o Diversi Consulting
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28th April 2015

Silky Property Group
c/o Diversi Consulting
PO Box 6662
Baulkham Hills, NSW, 2153

RE: PRELIMINARY SITE INVESTIGATION – 94 – 100 EXPLORERS WAY, ST CLAIR, NSW

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

This report documents the findings of all 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 9675 1777.

For and on behalf of,
Alliance Geotechnical Pty Ltd



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FIGURES

Figure 1: Site Locality

Figure 2: Site Features

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- A Site Photographs
- B Test Pit Logs
- C Map of Registered Groundwater Bores within 1km of the Site
- D Land Titles Information (supplied by Advance Legal Searchers Pty Ltd)
- E Historical Aerial Photographs
- F EPA Notices and Records

EXECUTIVE SUMMARY

Alliance Geotechnical Pty Ltd (AG) was engaged by Diversi Consulting on behalf of Silky Property Group (the client), to conduct a preliminary site investigation (PSI) (contamination assessment) at 94 – 100 Explorers Way, St Clair, NSW (herein referred to as 'the site'), refer to **Figure 1**. The site is legally identified as Lot 36 in Deposited Plan (DP) 239502 and covered an area of approximately 1.07 hectares (10,700 m²). The site is currently used for residential and open space land uses and it is understood that the client is planning to redevelop for residential (with accessible soils) land use. A PSI is required to support the development application.

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 and past land uses (i.e. site history). The scope of works comprised reviews of regional topographic, geological and soil landscape maps, assessment of local hydrogeological conditions, beneficial uses and flow direction, including a search for groundwater data from registered water supply bores within a 1 km radius of the site, a site history review including collation of land titles information, historical aerial photographs, council documents and NSW EPA public registers and a site walkover inspection, designed to observe landscape characteristics and check for indicators of actual/potential contamination and preparation of a final report, including a statement regarding the potential for contamination to exist at the site.

A site inspection was complete on 13th April 2015 by one of AG's trained and experienced environmental consultants. During the site inspection the site was observed to comprise eight (8) buildings / structures, a gravel driveway and a large open space / backyard. All vegetated areas appeared to be in good condition with no observed signs of vegetation stress or dieback. No visible signs of contamination were observed at the site, including asbestos containing materials (ACM), hydrocarbon odours or staining.

Potential fill material was observed in the following locations at the site:

- The gravel driveway;
- Areas of building footprints;
- The raised area north of the small dwellings and gazebo;
- Either side of the drainage channel; and
- The stockpile / mound on the northern boundary of the site.

Three (3) test pits were excavated during a salinity investigation which was completed concurrently with this assessment. The salinity assessment was presented as a separate report. However, during test pit excavation, fill material was confirmed in the raised area north of the small dwellings and gazebo (TP1) and the raised area to the south of the drainage channel (TP2). Fill material was observed to range in depth from the surface (0.0 m below ground surface (bgs)) to 0.5 – 0.6 m bgs and was described as silty clay, brown, dry to damp, soft to firm with moderate plasticity and minor inclusions of bricks, concrete fragments, rubber, PVC pipe, glass, plastic and charcoal. No ACM fragments or hydrocarbon odours were observed in excavated materials.

Based on the aerial photographs and land title information, the site appeared to have been used for rural residential purposes since the site was established in 1916. The small wooden dwelling in the south-western portion of the site was constructed prior to 1947. The land use appeared unchanged until 1986, when the other site buildings were constructed. Based on the years of construction and site observations, no site buildings are expected to contain asbestos and/or lead paint.

The site and surrounding areas were free of statutory notices issued by the EPA under the Contaminated Land Management Act 1997 and the Protection of the Environment Operations Act 1997. No fuel UST or AGST was expected to have been installed on the land.

Based on the findings of this environmental investigation, it was concluded that:

- The site had been used for rural residential purposes since it was established in 1916. All site buildings were either constructed of wood or constructed after 1986 and therefore are expected to not contain asbestos and/or lead paint;
- The only AEC at the site was the potential for fill material of unknown origin;
- The site and surrounding areas were free of statutory notices issued by the EPA under the Contaminated Land Management Act 1997 and the Protection of the Environment Operations Act 1997;
- No fuel underground storage tanks (UST) or above ground storage tanks (AST) were observed in the accessible areas of the site; and
- No ACM fragments, hydrocarbon odours or staining were observed on the ground surface of the site. Three test pits excavated during a salinity assessment identified fill material at depths of 0.5 m bgs and 0.6 m bgs in two areas. The material excavated was not observed to contain any ACM, hydrocarbon odours or staining. The overall risk of contamination at the site was low.

AG hereby makes the following recommendations in relation to any future site development:

- Following demolition of site buildings, soil samples are required to classify material designated for off-site disposal. Soils should be sampled in accordance with NSW EPA Waste Classification Guidelines (DECCW 2009); and
- During sub-division earthworks, a standard unexpected finds protocol should be implemented to adequately manage any identified contamination.

1.0 INTRODUCTION

1.1 Background

Alliance Geotechnical Pty Ltd (AG) was engaged by Diversi Consulting on behalf of Silky Property Group (the client), to conduct a preliminary site investigation (PSI) (contamination assessment) at 94 – 100 Explorers Way, St Clair, NSW (herein referred to as 'the site'), refer to **Figure 1**. The site is legally identified as Lot 36 in Deposited Plan (DP) 239502 and covered an area of approximately 1.07 hectares (10,700 m²).

The site is currently used for residential and open space land uses and it is understood that the client is planning to redevelop for residential (with accessible soils) land use. A PSI is required to support the development application.

This report documents the findings of all 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).

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 and past land uses (i.e. site history).

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 flow direction, including a search for groundwater data from registered water supply bores within a 1 km radius of the site;
- A site history review including collation of land titles information, supplied by Advance Legal Searchers Pty Ltd (Title Searchers);
- a search of 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 CHARACTERISTICS

2.1 Site Location and Identification

The site was located at 94 – 100 Explorers Way, St Clair, NSW (Ref. **Figure 1**). It was further identified as comprising Lot 36 in Deposited Plan (DP) 239502. The site was an approximately rectangular shaped parcel of land, covering an area of approximately 1.07 hectares (refer to **Figure 2**). The approximate geographic coordinates of the centre of the site were -33.791522 E, 150.801251 N.

2.2 Site Inspection

A site inspection was complete on 13th April 2015 by one of AG's trained and experienced environmental consultants. During the site inspection the site was observed to comprise eight (8) buildings / structures, a gravel driveway and a large open space / backyard. For site photographs, refer to **Appendix A**.

The buildings / structures at the site included:

- A large two-storey, residential dwelling, located in the south-eastern corner of the site, constructed of concrete and roof tiles;
- An outdoor dining area / gazebo, located approximately 20 m north of the large dwelling, constructed of metal;
- A small hut, located in between the gazebo and large dwelling, constructed of wood, glass and roof tiles. The ground surface in the area between the large dwelling, gazebo and hut was covered with a concrete slab;
- Two small, single-storey dwellings, in the southern portion of the site, constructed of fibreboard, brick, wood and sheet metal;
- A chicken coop, located approximately 10 m to the north of the small dwellings, constructed of wood, sheet metal and chicken wire; and
- Two small sheds, located on the eastern boundary of the site, constructed of wood and sheet metal. Evidence of minor storage of chemicals was observed including empty tins of paint, oil and fuel containers.

In addition, a concrete slab elevated on cobbles and small boulders was observed in the north-western corner of the site. Anecdotal evidence (provided by the site owner of over 30 years) indicated that this slab was constructed for a children's cubby house which was never completed.

The remainder of the site was vegetated open space with the exception of the gravel driveway. A man-made drainage channel with stormwater pits was observed to run through the centre of the site. A mound / grassed stockpile was observed at the northern boundary of the site. A stockpile of wood and plant matter was observed to the north of the small dwellings. All vegetated areas appeared to be in good condition with no observed signs of vegetation stress or dieback. No visible signs of contamination were observed at the site, including asbestos containing materials (ACM), hydrocarbon odours or staining.

Potential fill material was observed in the following locations at the site:

- The gravel driveway;
- Areas of building footprints;
- The raised area north of the small dwellings and gazebo;
- Either side of the drainage channel; and
- The stockpile / mound on the northern boundary of the site.

Three (3) test pits were excavated during a salinity investigation which was completed concurrently with this assessment. The salinity assessment was presented as a separate report. However, during test pit excavation, fill material was confirmed in the raised area north of the small dwellings and gazebo (TP1) and the raised area to the south of the drainage channel (TP2). Fill material was observed to range in depth from the surface (0.0 m below ground surface (bgs)) to 0.5 – 0.6 m bgs and was described as silty clay, brown, dry to damp, soft to firm with moderate plasticity and minor inclusions of bricks, concrete fragments, rubber, PVC pipe, glass, plastic and charcoal. No ACM fragments or hydrocarbon odours were observed in excavated materials. Refer to **Appendix B** for lithological logs.

Inaccessible areas at the time of inspection included within the site buildings, the soils in the areas of building footprints and soils in other sealed areas of the site.

2.3 Surrounding Areas

The site was bound by:

- A vegetated area / riparian zone to the north, beyond which was the M4 Motorway;
- Low density residential land use to the east;
- Explorers Way to the south, beyond which was low density residential land use; and
- Low density residential land use and open space / parkland to the west.

2.4 Topography and Site Drainage

The site was located on a relatively flat gradient (< 5%) in a north-easterly 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 50 – 60 m above sea level (i.e. 50 – 60 m Australian Height Datum (AHD)).

Due to the majority of the site being unsealed, precipitation is anticipated to infiltrate the ground surface until it reaches saturation point and then flow along the surface towards the drainage channel and corresponding stormwater pits in the centre of the site. The stormwater channel is grassed, however during periods of heavy rainfall, precipitation is anticipated to flow through the channel to the north-east. In sealed areas of the site, precipitation is anticipated to be captured by the building gutters and site stormwater drainage system.

The nearest surface water receptor was the unnamed stormwater channel in the centre of the site. The channel extends from the centre of the western boundary of the site, through the centre of the site and exits at the north-eastern boundary of the site. Any stormwater from the site is anticipated to enter the M4 Motorway Stormwater system which is likely to drain into Ropes Creek, approximately 900 m to the east. Runoff and groundwater at the site is likely to find its way to this system.

2.5 Regional Geology and Soil Landscape

Information on regional sub-surface conditions, referenced from the Geological Survey of NSW / Department of Mineral Resources Penrith 1:100,000 Geological Series Sheet 9130 (GS NSW / DMR, 1983), indicated that the site overlies Wianamatta Group Bringelly Shale (Rwb). These soils are anticipated to comprise shale, carbonaceous claystone, claystone, laminite, fine to medium grained lithic sandstone, rare coal and tuff.

Review of the NSW National Resource Atlas Acid Sulfate Soil Risk Maps indicated that the site overlies an area of "no known occurrence of acid sulphate soils". There is not anticipated to be a risk to current or future site buildings from acid sulphate soils.

2.6 Hydrogeology

A review of the NSW Office of Water groundwater database indicated that no registered groundwater bores were located within a 1.5 km radius of the site. Groundwater bore information was supplied by the NSW Office of Water and is attached in **Appendix C**. No conclusions were able to be made regarding groundwater at the site.

3.0 SITE HISTORY

3.1 Land Titles Information

A search of historical land title ownership records search was conducted through Advanced Legal Searchers Pty Ltd (Legal Searchers). Relevant documents resulting from this search are presented in **Appendix D**. A review of these records provided a source of information which may relate to potential or likely historical land use on the site. A summary of the ownership record is presented below:

1916 – 1917	NSW Realty Company Limited
1917 – 1927	William Elson, member of Australian Imperial Forces
1927 – 1933	Charles Wackett, greengrocer
1933 – 1935	Ernest Virgin, motor bus driver
1935 – 1936	Stanley Kindred, grocer
1936 – 1944	Samuel Virgin, storekeeper
1944 – 1949	Marie Richards, married woman
1949 – 1977	Clive and Stanley Michael, manufacturers
1977 – 1987	Roger Franks, model shop craftsman
1987 – to date	Diab and Sayde Finianos, current owners.

3.2 Historical Aerial Photography

The site history review included a search of LPI historical aerial photographs, as shown in **Appendix E**. A summary of the photographs is shown below:

- **1947:** The site appeared to comprise a rural residential property with a dwelling and a number of sheds in the southern portion of the site. The dwelling was consistent with the location of the present day, small wooden dwelling at the site. A drainage channel was located in the centre of the site, consistent with the location of the present day drainage channel. The adjacent area to the north appeared to comprise natural, heavily vegetated bushland. The adjacent areas to the east, south and west appeared to comprise rural residential land uses with cleared areas and small dwellings observed.
- **1955:** A small man-made dam appeared to have been constructed at the centre of the western site boundary. The remainder of the site and surrounding areas appeared similar to the previous aerial photograph.
- **1970:** A small dwelling had been constructed in the south-eastern corner of the site. Evidence of vegetation growth at the site was observed. A number of dwellings were constructed in surrounding areas and a number of industrial buildings were constructed to the east. All other areas appeared similar to the previous aerial photograph.
- **1986:** The small dwelling that appeared in the south-eastern corner of the site in the previous aerial had been removed and a large dwelling was constructed in the location of the present day two storey dwelling. A small dwelling was constructed in the location of the middle dwelling and a shed was constructed in the location of the current day shed, on the eastern site boundary. The small man made dam had been filled. The bushland to the north of the site had been cleared and the M4 Motorway had commenced construction. Evidence of earthworks was observed at the adjacent property to the west.

- **1999:** The chicken coop had been constructed to the north of the small dwellings. The other site buildings had been constructed i.e. the gazebo. The other areas of the site and surrounding areas appeared similar to the previous aerial photograph.
- **2015:** The site and surrounding areas appeared similar to the previous aerial photograph.

3.3 Regulatory Compliance

On 27th April, 2015, an on-line search of the NSW EPA Contaminated Land Management Act 1997 (CLM Act) Record of Notices was conducted. This search confirmed that the EPA had no involvement, or regulation, under Section 58 or Section 60 of the Contaminated Land Management Act 1997 for the site. Search results are attached in **Appendix F**.

On 27th April 2015, an on-line search of the public register for licences, applications, notices, audits, pollution studies and reduction programs under the Protection of the Environment Operations Act 1997 (POEO Act 1997) was conducted, this being another database that is maintained by the EPA. This search confirmed that the EPA had no current involvement, or regulation, under the POEO Act 1997 for the site and surrounding areas. Search results are attached in **Appendix F**.

3.4 Site History Summary

Based on the aerial photographs and land title information, the site appeared to have been used for rural residential purposes since the site was established in 1916. The small wooden dwelling in the south-western portion of the site was constructed prior to 1947. The land use appeared unchanged until 1986, when the other site buildings were constructed. Based on the years of construction and site observations, no site buildings are expected to contain asbestos and/or lead paint.

Evidence of fill was observed in the area of a former man-made dam at the western boundary of the site. Based on aerial imagery, the fill material is expected to have been sourced from the site or the adjacent property to the west.

3.5 Integrity Assessment

The information obtained from the historical sources reviewed have been found to be in general agreement. It is therefore considered that the information provided in this historical assessment has an acceptable level of accuracy.

4.0 CONCEPTUAL SITE MODEL

4.1 Areas and Contaminants of Environmental Concern

Based on the review of historical information and observations from the site inspection, the only potential area of environmental concern (AEC) identified at the site was fill material of unknown origin.

No information in relation to historical occurrences of product spills/losses, discharges to the land, water or air associated with chemical storage at the site has been identified as part of this assessment.

4.2 Contaminants of Potential Concern

The following contaminants were therefore deemed to be of potential concern in the soils at this site:

- heavy metals;
- total petroleum hydrocarbons (TPH);
- polycyclic aromatic hydrocarbons (PAH);
- polychlorinated biphenyls (PCBs); and
- Asbestos.

4.3 Potentially Contaminated Media

Fill material is considered to be a potentially contaminated media based on the unidentified sources of the fill material potentially imported to the site historically to backfill/raise topographic features. However, based on aerial photography, fill material is expected to have been sourced from the site or the adjacent property to the west.

Based on the potential leachability of COPCs that may be in the fill, vertical migration COPCs through the soil profile may occur. Consequently, natural soils underlying fill are considered to be a potentially contaminated media.

There potential for groundwater to be a contaminated media due is low due to the low permeability of the underlying clay material. As with natural soils, the potential for contamination of groundwater will depend upon the actual nature, occurrence and characteristics of contamination within the overlying stratigraphy.

4.4 Potential for Migration

Contaminants generally migrate from the site via a combination of windblown dusts, rainwater infiltration, groundwater migration and surface water runoff. The potential for contaminants to migrate is a combination of:

- The nature of the contaminants (solid/liquid and mobility characteristics);
- The extent of the contaminants (isolated or widespread);
- The location of the contaminants (surface soils or at depth); and
- The site topography, geology, hydrology and hydrogeology.

The potential contaminants identified as part of the site history review are generally in a solid form (e.g. heavy metals, asbestos etc.) or liquid form (e.g. fuel, lubricants etc.).

As the majority of the site is unsealed and grassed, the potential for windblown dust migration is considered to be low. The potential for contamination via surface water movement and infiltration of water and subsequent migration through the soil profile is also considered to be low. Given the low permeability of the underlying soils, migration via groundwater movement is not considered to be a potential migration pathway.

4.5 Potential Exposure Pathways

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

- Potential dermal and oral contact to impacted soils and/or groundwater as present at shallow depths and/or accessible by future excavations; and/or
- Potential contaminant uptake by vegetation.

4.6 Receptors

Potential receptors of environmental impact present within the site which will require to be addressed with respect to suitability of the site for its proposed residential use include:

- Future users/occupants of the site may potentially be exposed to COPCs through direct contact with impacted soils/groundwater and/or ingestion of impacted soils/groundwater and/or ingestion of impacted soils/groundwater and/or inhalation of dusts/fibres associated with impacted soils/groundwater; and/or
- Excavation/construction/maintenance workers conducting activities at the site, who may potentially be exposed to COPCs through direct contact with impacted soils/groundwater present within excavations and/or inhalation of dusts/fibres associated with impacted soils/groundwater; and/or
- Flora species to be established on the vegetated areas of the site.

4.7 Discussion

Based on the review of historical information and observations from the site inspection, the only potential AEC identified at the site was fill material of unknown origin. The areas of suspected fill included:

- The gravel driveway;
- Areas of building footprints;
- The raised area north of the small dwellings and gazebo (TP1);
- Either side of the drainage channel (TP2); and
- The stockpile / mound on the northern boundary of the site.

Three (3) test pits were excavated during a salinity investigation which was completed concurrently with this assessment. The salinity assessment was presented as a separate report. However, during test pit excavation, fill material was confirmed in the raised area north of the small dwellings and gazebo (TP1) and the raised area to the south of the drainage channel (TP2). Fill material was observed to range in depth from the surface (0.0 m below ground surface (bgs)) to 0.5 – 0.6 m bgs and was described as silty clay, brown, dry to damp, soft to firm with moderate plasticity and minor inclusions of bricks, concrete fragments, rubber, PVC pipe, glass, plastic and charcoal. No ACM fragments or hydrocarbon odours were observed in excavated materials.

Based on discussions with the client, a large volume of soil at the site is proposed to be excavated for off-site disposal during sub-division earthworks. Due to natural soils being observed at a maximum depth of 0.6 m bgs, it is anticipated that the risk of contamination in residual soils at the site is low. It is recommended that prior to off-site disposal, the soil is tested in accordance with NSW EPA Waste Classification Guidelines (DECCW 2009). In addition, during earthworks, a standard unexpected finds protocol should be implemented.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Based on the findings of this environmental investigation, it was concluded that:

- The site had been used for rural residential purposes since it was established in 1916. All site buildings were either constructed of wood or constructed after 1986 and therefore are expected to not contain asbestos and/or lead paint;
- The only AEC at the site was the potential for fill material of unknown origin;
- The site and surrounding areas were free of statutory notices issued by the EPA under the Contaminated Land Management Act 1997 and the Protection of the Environment Operations Act 1997;
- No fuel underground storage tanks (UST) or above ground storage tanks (AST) were observed in the accessible areas of the site; and
- No ACM fragments, hydrocarbon odours or staining were observed on the ground surface of the site. Three test pits excavated during a salinity assessment identified fill material at depths of 0.5 m bgs and 0.6 m bgs in two areas. The material excavated was not observed to contain any ACM, hydrocarbon odours or staining. The overall risk of contamination at the site was low.

5.2 Recommendations

AG hereby makes the following recommendations in relation to any future site development:

- Following demolition of site buildings, soil samples are required to classify material designated for off-site disposal. Soils should be sampled in accordance with NSW EPA Waste Classification Guidelines (DECCW 2009); and
- During sub-division earthworks, a standard unexpected finds protocol should be implemented to adequately manage any identified contamination.

6.0 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 local and state government authorities. 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 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 Silky Property Group. 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.

This report remains the property of Alliance Geotechnical subject to payment of all fees due for the assessment. The report shall not be reproduced except in full and with prior written permission by Alliance Geotechnical Pty Ltd.

Should you require additional information or clarification regarding any aspect of this report, please call the undersigned on (02) 9675 1777.

For and on behalf of,
Alliance Geotechnical Pty Ltd



Benjamin Regan
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Senior Environmental Consultant
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7.0 REFERENCES

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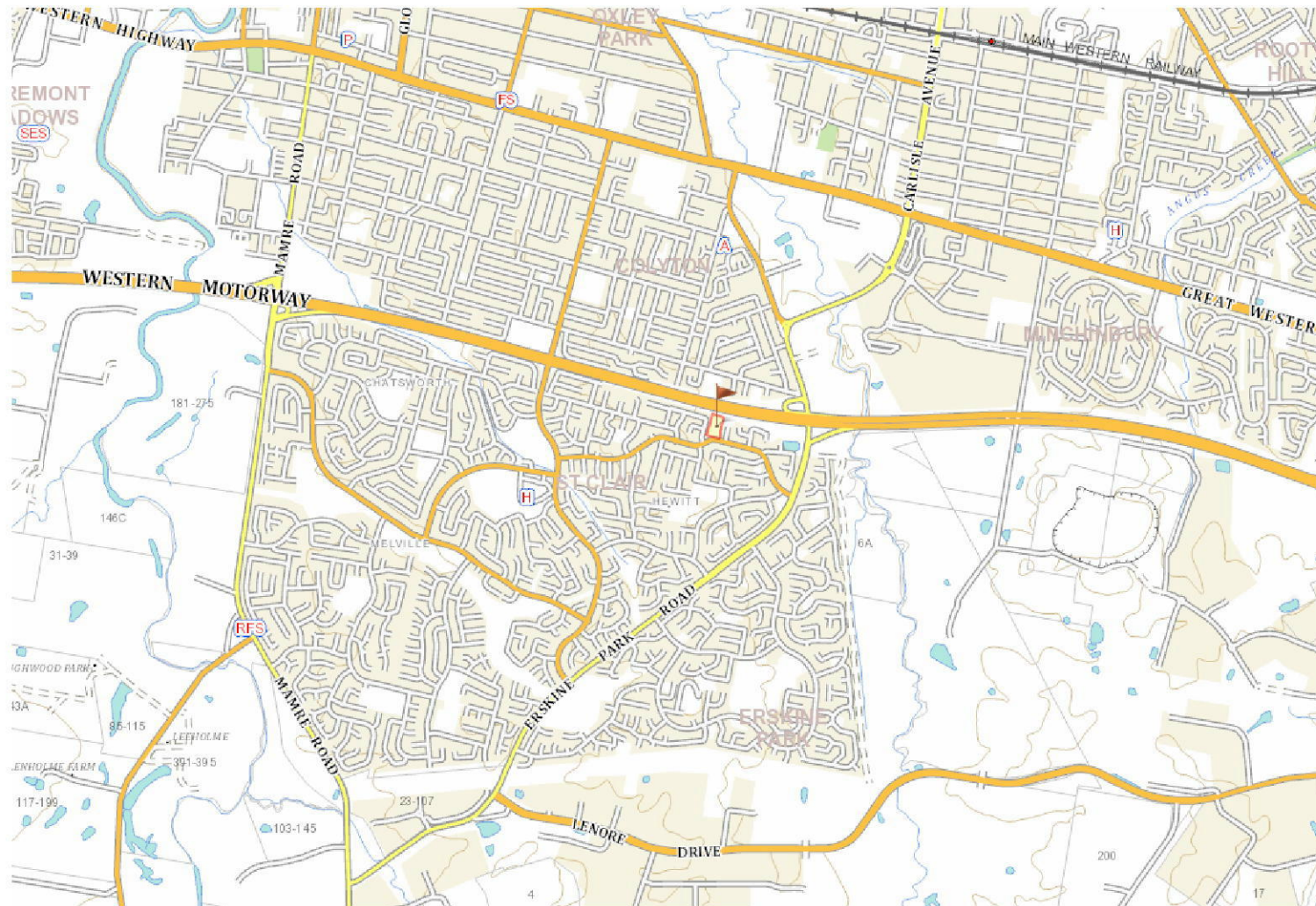
FIGURES



Alliance Geotechnical Pty Ltd

ENGINEERING | ENVIRONMENTAL | TESTING

Site Location - Drawing Number: 1842-ER-1-A



Not To Scale



Source: SIX Maps (www.maps.six.nsw.gov.au)

Your On-Site Geotechnical Specialists
Phone Us Today - 02 9675 1777

Client: Silky Property Group
Project: 94-100 Explorers Way, St Clair, NSW
Location: 94-100 Explorers Way, St Clair, NSW

Job Number: 1842
Report Number: 1842-ER-1-1
Report Date: 28/04/2015



Alliance Geotechnical Pty Ltd

ENGINEERING | ENVIRONMENTAL | TESTING

Site Location - Drawing Number: 1842-ER-1-B



Not To Scale



Source: SIX Maps

Your On-Site Geotechnical Specialists

Phone Us Today - 02 9675 1777

Client: Silky Property Group

Project: 94-100 Explorers Way, St Clair, NSW

Location: 94-100 Explorers Way, St Clair, NSW

Job Number: 1842

Report Number: 1842-ER-1-1

Report Date: 28/04/2015



Alliance Geotechnical Pty Ltd

ENGINEERING | ENVIRONMENTAL | TESTING

Site Location - Drawing Number: 1842-ER-1-C



Not To Scale



Key



Sample Locations



Site Boundary

Source: SIX Maps

Your On-Site Geotechnical Specialists

Phone Us Today - 02 9675 1777

Client: Silky Property Group

Project: 94-100 Explorers Way, St Clair, NSW

Location: 94-100 Explorers Way, St Clair, NSW

Job Number: 1842

Report Number: 1842-ER-1-1

Report Date: 28/04/2015

APPENDIX A

SITE PHOTOGRAPHS



Photo 1: Front of small, wooden dwelling, looking north.



Photo 2: Front of garage with wooden dwelling to the left and the gazebo in the background to the right. Looking north-east.



Photo 3: Gazebo, wooden hut and large two-storey dwelling with driveway in foreground. Looking east.



Photo 4: Chicken coop, looking north.



Photo 5: Wood stockpiles and rear of site dwellings, looking south.



Photo 6: Sheds on eastern boundary of the site, looking north-east.



Photo 7: Drainage channel in centre of site with embankments either side of it, looking west.



Photo 8: Slab of former cubby house on western site boundary, looking north.



Photo 9: Suspected soil stockpile on western boundary of site, looking north-east.

APPENDIX B

TEST PIT LOGS



Alliance Geotechnical

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Your On-Site Geotechnical & Environmental Specialists

Job No:	1829
Hole No:	TP1
Date:	13/04/2015
Logged:	BR

Client:	Ground Engineering Design Pty Ltd	Surface RL:	-
Location:	94 - 100 Explorers Way, St Clair, NSW, 2759	Test Method:	Test Pit

Depth (m)	Graphic Log	Description	PID	Samples	Additional Comments
0.00		Silty clay, brown, dry to damp, firm, moderate plasticity, with foreign materials including brick, glass, tile and concrete.	-	TP1 - 0.0 - 0.2	
0.60		Clay, yellow to brown, damp, high plasticity, soft to firm and no foreign materials.		TP1 - 0.7 - 0.8	

Borehole terminated at 1.0m

Strength

s - Soft
f - Firm
st - Stiff
vst - Very Stiff
h - Hard

Relative Density

VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Moisture

D - Dry
SM - Slightly Moist
M - Moist
VM - Very Moist
W - Wet

Weathering

CW - Completely Weathered
EW - Extremely Weathered
HW - Highly Weathered
MW - Moderately Weathered
SW - Slightly Weathered
F - Fresh



Alliance Geotechnical

ENGINEERING | ENVIRONMENTAL | TESTING

Your On-Site Geotechnical & Environmental Specialists

Job No:	1829
Hole No:	TP2
Date:	13/04/2015
Logged:	BR

Client:	Ground Engineering Design Pty Ltd	Surface RL:	-
Location:	94 - 100 Explorers Way, St Clair, NSW, 2759	Test Method:	Test Pit

Depth (m)	Graphic Log	Description	PID	Samples	Additional Comments
0.00		Silty clay, brown, dry to damp, soft to firm, moderate plasticity, with foreign materials including full bricks, rubber, glass, plastic, PVC pipe and charcoal.	-	TP2 - 0.0 - 0.3	
0.50		Clay, yellow to brown, dry, moderate plasticity, firm, no foreign materials		TP2 - 0.5 - 0.7	

Borehole terminated at 0.9m

Strength

s - Soft
f - Firm
st - Stiff
vst - Very Stiff
h - Hard

Relative Density

VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Moisture

D - Dry
SM - Slightly Moist
M - Moist
VM - Very Moist
W - Wet

Weathering

CW - Completely Weathered
EW - Extremely Weathered
HW - Highly Weathered
MW - Moderately Weathered
SW - Slightly Weathered
F - Fresh



Alliance Geotechnical

ENGINEERING | ENVIRONMENTAL | TESTING

Your On-Site Geotechnical & Environmental Specialists

Job No:	1829
Hole No:	TP3
Date:	13/04/2015
Logged:	BR

Client:	Ground Engineering Design Pty Ltd	Surface RL:	-
Location:	94 - 100 Explorers Way, St Clair, NSW, 2759	Test Method:	Test Pit

Depth (m)	Graphic Log	Description	PID	Samples	Additional Comments
0.00		Silty clay, brown, dry, firm, low plasticity, igneous gravels and no foreign materials.	-	TP3 - 0.0 - 0.2	
0.30		Clay, red to brown, dry, high plasticity, firm and no foreign materials.		TP3 - 0.4 - 0.5	

Borehole terminated at 0.6m

Strength

s - Soft
f - Firm
st - Stiff
vst - Very Stiff
h - Hard

Relative Density

VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Moisture

D - Dry
SM - Slightly Moist
M - Moist
VM - Very Moist
W - Wet

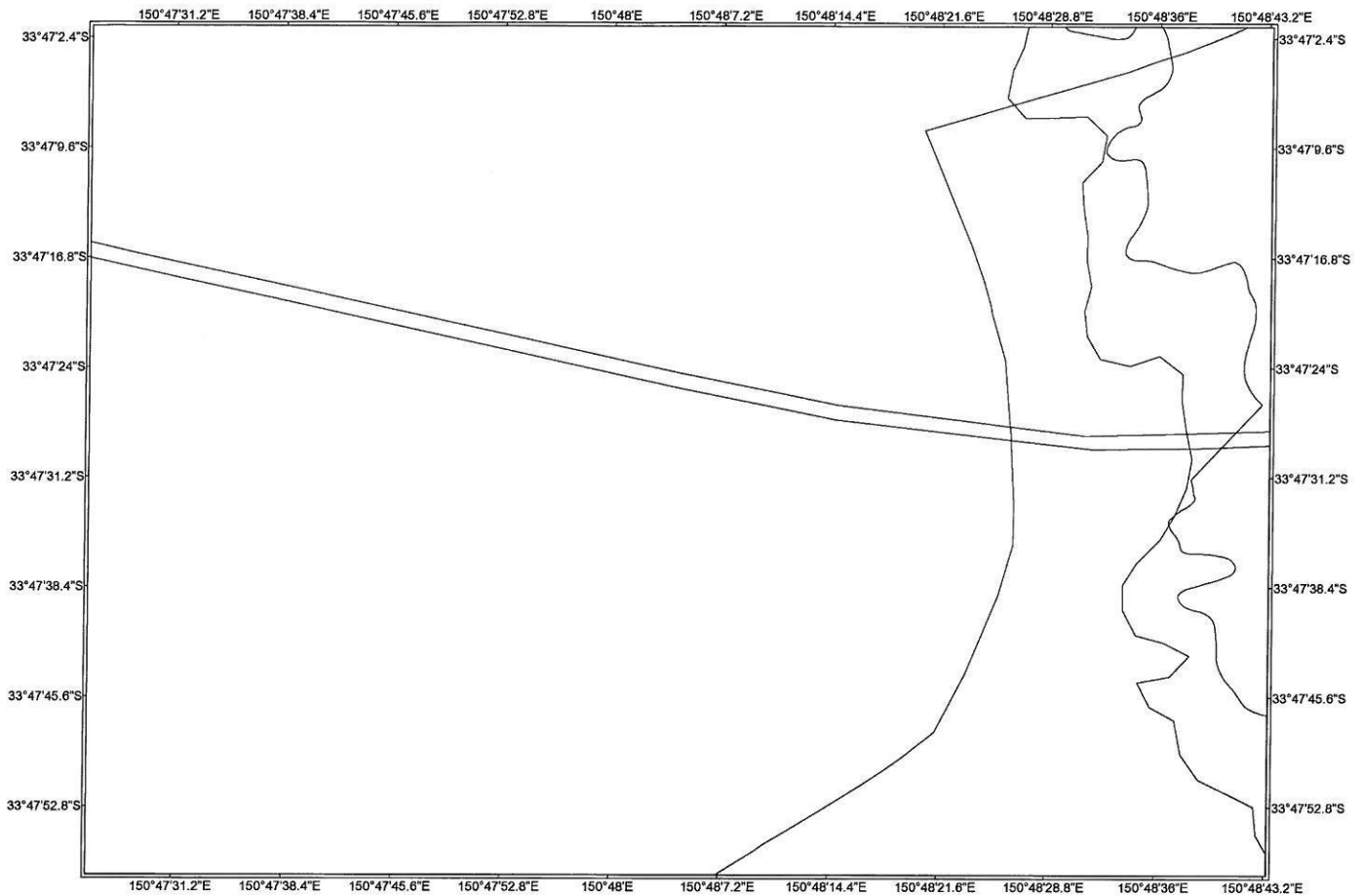
Weathering

CW - Completely Weathered
EW - Extremely Weathered
HW - Highly Weathered
MW - Moderately Weathered
SW - Slightly Weathered
F - Fresh

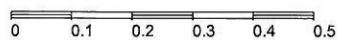
APPENDIX C

REGISTERED GROUNDWATER BORES WITHIN 1 KM OF THE SITE

NSW GW Map



Scale : Kilometres



Projection : Latitude/Longitude

Key	
• SMALLTWN	— NSW Railway Lines
• MEDTOWNS	— NSW Main Roads
• ALLBORES	□ Irrigation Dams
— NSW Major Rivers	□ Local Government Areas
— Nsw Rivers	□ Ground Water Management Areas

APPENDIX D

LAND TITLES INFORMATION

(SUPPLIED BY ADVANCED LEGAL SEARCHERS PTY LTD)

ADVANCE LEGAL SEARCHERS PTY LTD

(ACN 147 943 842)
ABN 82 147 943 842

P.O. Box 149
Yagoona NSW 2199

Telephone: +612 9644 1679
Mobile: 0412 169 809
Facsimile: +612 8076 3026
Email: alsearch@optusnet.com.au

23rd April, 2015

ALLIANCE GEOTECHNICAL
PO Box 1028,
ST. MARYS NSW 1790

Attention: Benjamin Regan

RE: 94 – 100 Explorers Way
St Clair

Current Search

Folio Identifier 36/239502 (title attached)
DP 239502 (plan attached)
Dated 21st April, 2015
Registered Proprietor:
DIAB FINIANOS
SAYDE FINIANOS

Title Tree
Lot 36 DP 239502

Folio Identifier 36/239502

Certificate of Title Volume 11529 Folio 140

Certificate of Title Volume 4584 Folio 140

Certificate of Title Volume 4522 Folio 162

Certificate of Title Volume 4014 Folio 219

Certificate of Title Volume 2752 Folio 85

Certificate of Title Volume 2687 Folio 228

Summary of proprietor(s) Lot 36 DP 239502

Year	Proprietor
	(Lot 36 DP 239502)
1987 – todate	Diab Finianos Sayde Finianos
	(Lot 36 DP 239502 – CTVol 11529 Fol 140)
1983 – 1987	Diab Finianos Sayde Finianos
1977 – 1983	Roger Terence Franks, model shop craftsman Janet Jenner, tea lady
1971 – 1977	Clive Hedley Michael, manufacturer Stanley Phillip Michael, manufacturer
	(Part Lot 64 DP 2054 – Area 3 Acres 2 Roods 15 Perches – CTVol 4584 Fol 97)
1949 – 1971	Clive Hedley Michael, manufacturer Stanley Phillip Michael, manufacturer
1944 – 1949	Marie Richards, married woman
1936 – 1944	Samuel Ernest Virgin, storekeeper
1935 – 1936	Stanley Charles Kindred, grocer
1933 – 1935	Ernest Nickering Virgin, motor bus driver
	(Lots 62 & 64 DP 2054 – Area 13 Acres 1 Rood 29 Perches – CTVol 4522 Fol 162)
1932 – 1933	Charles William Wackett, greengrocer
	(Lots 62 to 64 DP 2054 – Area 20 Acres 2 Rood 9 ¾ Perches – CTVol 4014 Fol 219)
1927 – 1932	Charles William Wackett, greengrocer
1927 – 1927	Albert Edward Rogan, investor
	(Lots 62 to 64 DP 2054 – Area 20 Acres 2 Rood 9 ¾ Perches – CTVol 2752 Fol 85)
1927 – 1927	Pubic Trustee <i>(vide local government Act, 1919)</i>
1917 – 1927	William John Elson, member of Australian Imperial forces
	(Lots 62 to 64 DP 2054 and other lands – Area 103 Acres 1 Rood 37 ¾ Perches – CTVol 2687 Fol 228)
1916 – 1917	N.S.W. Realty Company Limited

APPENDIX E

HISTORICAL AERIAL PHOTOGRAPHS

1947



1955



1970



1986



1998



2015



APPENDIX F

NSW EPA SEARCH RESULTS

List of NSW Contaminated Sites under Section 60 of the CLM Act 1997

Springvale	Springvale Colliery Castlereagh Highway	Unclassified	Under assessment
St Clair	Mobil Service Station 4 Endeavour Avenue	Service Station	Under assessment
St Ives	Mobil Service Station 157 Mona Vale Road	Service Station	Under assessment

Record of Notices under Section 58 of the CLM Act 1997

Search results

Your search for: LGA: Penrith City Council

Matched 29 notices relating to 8 sites.

[Search Again](#)

[Refine Search](#)

Suburb	Address	Site Name	Notices related to this site
Berkshire Park	Northern end of Compartment 5	Castlereagh State Forest	6 former
Colyton	86-88 Great Western Highway	Ampol Service Station	1 current
Jamisontown	92 Mulgoa Road	7-Eleven Service Station	2 current
Luddenham	Lot 4 The Northern Road	Elura Liquid Waste Disposal Site	1 current
Mulgoa	Mulgoa Road	Penrith Waste Services	2 former
Penrith	2115 Castlereagh Road	Crane Enfield Metals and Adjacent Land	2 current and 3 former
St Marys	Vallance Street	Drum Recycler	5 former
St Marys	38 Links Road	Solvent Recycler	7 former

Page 1 of 1

27 April 2015

Search of the POEO Public Register

Search results

Your search for: **General Search** with the following criteria

Suburb - ST CLAIR

returned 0 result

[Search Again](#)