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Environmental Geoscience
Occupational Hygiene
Technical Consultants

STAGE 1 (PRELIMINARY) ENVIRONMENTAL SITE ASSESSMENT (ESA)

Development Property
74 Willandra Road
Narraweena NSW 2100

Lot 810 DP 752038

Prepared for:
Toprea International

(Report ID : EBG-02323.Stage1.ESA)

September 2013

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Abbreviations	
As	Arsenic
B(a)P	Benzo (a) pyrene (a component of PAHs)
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
BH	Borehole
Cd	Cadmium
Cr	Chromium
EPA (NSW)	Environmental Protection Agency (NSW)
DECCW(NSW)	Dept. Environment, Climate Change & Water (NSW)
Hg	Mercury
MAH	Mono Aromatic Hydrocarbons
NEHF	National Environment Health Forum
Ni	Nickel
OCPs	Organochlorin pesticides
OPPs	Organophosphate Pesticides
PCBs	Poly Cyclic Biphenyls
PAH	Polycyclic Aromatic Hydrocarbons
Pb	Lead
PID	Photo Ionisation Detector
QA/QC	Quality Assurance and Quality Control
RAP	Remedial Action Plan
RPD	Relative Percentage Difference
TCLP	Toxicity Characteristics Leaching Procedure
TRH	Total Recoverable Hydrocarbons
UST	Underground storage tank
VOCs	Volatile Organic Compounds

Distribution:	PDF Copies to: 1. Toprea International Pty Ltd	
Investigation & Reporting conducted by:	Michael Edwards MAppSc, MAIG, RPGeo No.10093 Registered Professional Geoscientist **Environmental/Engineering Geoscientist**	Signed: 
	Issued	13 September 2013

EXECUTIVE SUMMARY

ES-1. Investigations

This survey of Lot 810 DP 752038 (2.8 hectare) was authorized by the client Toprea International Pty Ltd. The on-site inspection was conducted on 11 September 2013.

The area is characterised by the Hawkesbury Soil (colluvial) Landscape. The site is underlain by the Middle Triassic Hawkesbury Sandstone Formation. The Hawkesbury Sandstone comprises medium to coarse grained sandstone with minor shale and laminate lenses.

The site is located on the 60 metre contour. It is likely that the surface and groundwater shall follow the topography and flow east to South Creek. South Creek flows north 2.5 km to Narrabeen Lakes and thence to the Pacific Ocean. Groundwater migration pathways through the Hawkesbury Sandstone formation are generally through the bedding planes, joints and fissure sets. The presence or not of these conduits shall determine the groundwater flow. It is assumed that groundwater would be located at some depth. (*Sydney Heads 9130-2N, 2nd Edition 1:25,000 Topographic Map)*

Title ownership summary:

- The site was crown land until 1891.
- The site was in private hands up until 1969.
- The site was owned by General Development (Building) Company from 1969 to 1980.
- The site was again in private hands from 1980 to the present day.

No buildings or associated infrastructure were located on the site in the 1930, 1961 or 1986 aerial photos. The air photos indicate that the property has never been developed. The topography is typical Hawkesbury sandstone environment and associated native vegetation.

Assorted tracks and sandstone outcrops are located in the north portion of the land. A number of cleared areas are located close to the road and behind the Rural Fire Brigade building.

Isolated areas of illegal dumping were located on the property. Small pieces of asbestos cement were located in four areas on the property (or near the properties' boundaries). Three are of concern and relevant to this investigation. The locations are shown on the aerial photo in 3.9.4 and recommendations concerning these areas are given in *Section 6.2 Recommendations.* Three areas need remediation prior to development. No underground tanks were located during the inspection.

<u>Other Searches and Investigations:</u>

- The Department of Water & Conservation Acid Sulphate Soils Maps for the entire greater Sydney area, were consulted. The area was located on the *Hornsby/Mona Vale – Acid Sulfate Soil Risk Map (Edition 2*). This area falls within the: 'No known occurrences of acid sulphate soil material' zone.
- A search of the Stored Chemical Information Database (SCID) and the microfiche records held by WorkCover was not carried out. There is no indication that any 'Dangerous Goods' were stored on the property.

- Office Environment & Heritage (Old EPA NSW): The land in question (for this report) was not listed on the Contaminated Land database.

ES-2. Discussion

Points taken into consideration to enable recommendations:

- The property was crown land up until 1891. The site was in private hands up until 1969 and again in private hands from 1980 to the present day.
- The site was owned by the General Development (Building) Company from 1969 to 1980.
- There are no historical records of use for commercial or industrial activities.
- The site inspection did not reveal any signs of industrial or commercial activity (other than the illegal dumping discussed below).
- The title search and historical aerial photos show that the property has never been developed. There is no evidence the property has been used for any industrial activity that may have had an impact on the soil with respect to chemical contamination.
- No chemical and/or waste storage tanks were located or are suspected to be located on the site.
- No significant staining or odours were identified during the inspection.
- The maps provided indicate that PASS (Potential Acid Sulfate Soil) shall not be an issue for this development. The area falls within the: 'No known occurrences of acid sulphate soil material' zone.
- There are no records held by WorkCover NSW that the site has been used to store hazardous goods (fuel, chemicals etc).
- The site is not listed on the Office of Environment & Heritage (EPA NSW) Contaminated Lands database.
- The site is covered with mainly native and some introduced vegetation. All trees, scrubs and grasses inspected appeared to be healthy.
- The soil is typically Hawkesbury sandstone coarse grained sandy soils.
- The block grades to higher elevation moving away north-west from the road. Sandstone outcrops are located in the rear portions of the land.
- Isolated areas of illegal dumping were located on the property. Some small pieces of asbestos cement were located in three of these areas on the property (or near the properties' boundaries).

ES-3. Recommendations

Considering the above points, it is the opinion of EBG that a Detailed Stage 2 Environmental Site Assessment as defined in the EPA NSW Guidelines for Consultants Reporting on Contaminated Sites Nov 1997, is not considered necessary.

Within the Scope of Works for this report, EBG considers the land shall be suitable for the proposed development (ie: construction of a residential boarding house and associated infrastructure) if the following remediation provisos and notes below are undertaken:

ES-4 Remediation Provisos:
Below are three areas located on the property or near the boundaries, where asbestos pieces have been located during the inspection. The locations are shown on the aerial photo in 3.9.4 and the locations cited refer to that aerial photo (Note: Location No. 3 is not

included in the recommendations as it sits outside the property boundaries). The recommendations concerning these areas are listed below.

- R1 – Location No. 1: Cleared area on side of road behind barrier and within the bounds of the property. Located approximately 150 metres east of the Rural Fire Brigade building. Broken sheet lying on ground. This can be seen from the road. Suspected dumped from road traffic. The broken asbestos cement sheeting shall be removed as bonded asbestos prior to development as per *Appendix B: Specification for the Removal of Bonded Asbestos*.

- R2 - Location No. 2: The adjacent property to the north has been cleared and a suspected development is being undertaken to accommodate a house or similar. Soil has been bulldozed to create raised track/embankment trending NE/SW and then E/W up to a small sandstone bluff to the rear of the properties. Isolated pieces of asbestos cement sheeting and other building debris were found within the soil of this embankment. It is difficult to ascertain from the ground, however this embankment may impinge onto the property or within the property's northern boundary. Whether this is the case should be checked by a surveyor. If the embankment or part thereof is located within the property boundaries, the pieces of asbestos cement sheeting located within the subject property shall be removed as bonded asbestos prior to development as per *Appendix B: Specification for the Removal of Bonded Asbestos* or alternatively the soil may be removed back into the adjacent property (its suspected origin).

- R3 - Location No. 4: Small pile of rubbish behind Rural Fire Building. Small pieces asbestos cement sheeting on ground (Located approx. 50m west of building within bush). The pile consists of typical household waste (plastic, bottles etc) and has been placed there some time ago. Isolated pieces of asbestos cement sheeting were found within the pile. The broken asbestos cement sheeting shall be removed as bonded asbestos prior to development as per Appendix B: Specification for the Removal of Bonded Asbestos).

<u>IMPORTANT NOTE # 1 – Removal of Extra Found Asbestos Pieces :</u> During development works the builder and contractors should be made aware that surface pieces of asbestos have been located and removed from site. The builder and contractors should be vigilant during works and check the soil surface and areas of vegetation for possible pieces of asbestos cement sheeting. Any extra found pieces of asbestos cement sheeting shall be removed as bonded asbestos prior to development as per *Appendix B: Specification for the Removal of Bonded Asbestos*.

<u>IMPORTANT NOTE # 2 - Removal of Soil :</u> It is not suspected that soil shall be removed from the property. However if this does occur the soils must first be classified as per the *DECC NSW Waste Classification Guidelines (Part 1 : Classifying Waste – Department of Environment & Climate Change NSW* (December 2009) prior to disposal.

SECTION 1: INTRODUCTION

1.1 Authorization

This survey was authorized by the client Toprea International Pty Ltd. The on-site inspection was conducted on 11 September 2013.

1.2 Scope of Work - Consultants Brief

EBG Environmental was requested to carry out a Stage 1 (Preliminary) Environmental Survey on the property. The scope of the survey entailed:

- Identify all past and present potentially contaminating activities where possible.
- Assessment of site history available within the records and available aerial photographs where applicable.
- Site visit to assess site activities past and present.
- A search of historical title information at the Land and Property Information, Macquarie Street, Sydney, to assess prior ownership and potential for contamination.
- A review of the available geological, topological maps and acid sulphate soils maps.
- A search for any notices relating to the potential for site contamination as issued by the EPA NSW and WorkCover NSW.

To accomplish the above, the following bodies were contacted:

- Historical Property Title Searches - Land and Property Information via Environmental Legal Searches
- WorkCover NSW - Dangerous goods licences
- Dial Before You Dig - investigation of underground facilities
- Department of Lands (at Land and Property Information - Macquarie Street) - Air Photos
- Sydney Water - underground water facilities
- Department of Environment & Climate Change – Contaminated Land Database

Following the research and site visit, recommendations were made regarding the potential for the surface or soil sub surface to have elevated contaminants and if so the need for remediation or further investigations.

1.3 Limitations of the Report

Within the guidelines set down for this survey, every effort has been made to give an accurate assessment of the property identified in this document. EBG Environmental does not accept any responsibility for any contamination that may exist in the area now or in the future. EBG Environmental accepts no liability for the use of this document by any other person other than the client. This report must not be produced except in full and must not be amended in any way. This report is based on current and historical information available at the time of writing.

SECTION 2: DATA QUALITY OBJECTIVES (DQO)

2.1 Outline of DQO Process

The EPA NSW *Guidelines for the NSW Site Auditor Scheme* (2nd Edition – April 2006) describes the DQO process thus:

> *The process used to define the type, quantity and quality of data needed to support decisions relating to the environmental condition of the site. The DQOs provide a systematic approach for defining the criteria that a data collection design should satisfy, including when, where and how to collect samples or measurements; determination of tolerable decision error rates; and the number of samples or measurements that should be collected.*

The DQOs are achieved by employing a seven-step process:

	Step	Section
1	Define the Problem	Section 2.2 1.2 Scope of Work - Consultants Brief
2	Identify the Problem	Section 2.3 3.3 Topography & Hydrogeology 3.7 Site Title History Sect. 4.0 Site Inspection
3	Identify the Inputs to the Decision	Section 2.4 1.2 Scope of Work - Consultants Brief
4	Define the Study Boundaries	Section 2.5 3.1 Site Identification 3.3 Topography & Hydrogeology 3.9 Historical Air Photos & Maps with Discussion 3.10 Historical Records Discussion Sect. 4.0 Site Inspection
5	Develop a Decision Rule	Section 2.6 Sect. 6: Discussion & Recommendations
6	Specify Limits of Decision Errors	Section 2.7: Data Quality Indicators
7	Optimise the Design for Obtaining Data	Section 2.8

2.2 Step 1 - Define the Problem

The problem is the potential for the site to have been contaminated by historical activities. These may be at levels in excess of those permissible for residential land use.

See also: 1.2 Consultants Brief

2.3 Step 2 - Identify the Inputs to the Decision

The primary decision statement that this RAP shall attempt to resolve is:

> *How can the contamination be identified in the report and as defined by EPA NSW Guidelines for the NSW Site Auditor Scheme (2nd Edition – April 2006), be managed or remediated so that it does not pose an unacceptable risk for the proposed residential land use.*

See also:

3.3 Topography & Hydrogeology
3.7 Site Title History
Sect. 4.0 Site Inspection

2.4 Step 3 – Identify the Inputs to the Decision

The primary inputs used to assess the potential contamination were:

- Define the site boundaries by the use of survey maps and site inspection.
- Review of the site history and site conditions, including the geology, hydrogeology and topography.
- Assessing contamination identified with the Stage 1 or 2 reports to facilitate the remediation procedures.
- Using appropriate soil sampling procedures to ensure correct representative data.
- Using correct analytical methods (NATA etc) with quantitation limits below the site assessment criteria.

See also:

1.2 Scope of Work - Consultants Brief

2.5 Step 4 – Define the Study Boundaries

The boundaries of the site are documented in *3.1 Site Identification*.

See also:

3.1 Site Identification
3.3 Topography & Hydrogeology
Sect. 4.0 Site Inspection
3.9 Historical Air Photos & Maps with Discussion
3.10 Historical Records Discussion

2.6 Step 5 – Develop a Decision Rule

The purpose of this step is to define the parameter of interest, specify the action level and combine the outputs of the previous steps into an "if …….., then….." decision rule that defines the conditions that would cause the decision maker to choose alternative actions.

The following decisions rules may be applied:

- Comparison of the results of the validation samples to the criteria (ie: '**If** the results are above criteria **then** extra remediation may be necessary')
- **If** field QA/QC samples (blanks, spikes etc) are found to contain chemicals of concern **then** further action extra sampling, investigation of procedure shall be undertaken.
- **If** the laboratory QA/QC samples (matrix spikes, reagent blanks) fall outside the acceptance criteria (See 2.7 - DQI) **then** the laboratory shall be contacted and/or the samples shall be re-analysed.

See also:

Section 6: Discussion & Recommendations

2.7 Step 6 –Specify Acceptable Limits on Decision Errors – Data Quality Indicators (DQIs)

The project DQIs address 'Step 6', and have been established to set acceptance limits on field and laboratory data collected as part of the investigation:

DQI	Field	Laboratory	Acceptance Limits
Accuracy	Procedures standard Rinsate blanks	Analysis of: Rinsate blanks Matrix spike Lab control sample Lab duplicate <5xPQL Lab duplicate >5xPQL	As per Envirolab Procedures Not detect 70 to 130% 70 to 130% Any RPD is acceptable 0-50% RPD is acceptable
Precision	Standard procedures appropriate to job and applied Collection of split (Inter-lab) duplicate and field (Intra-lab) duplicate	Analysis of: Field (Intra-lab) duplicate Split (Inter-lab) duplicate	 0-50% RPD is acceptable 0-50% RPD is acceptable
Represent-ativeness	Correct material sampled as per RAP or ESA All material needing to be sampled was sampled	All samples analysed in accordance with 'Chain of Custody'	
Compara-bility	Correct sampling protocol applied Sampler appropriately trained Similar climate conditions	Standard procedures used for all labs Similar analytical methods employed by all labs involved	As per NATA requirements As per EBG and DECCW requirements
Complete-ness	All critical locations sampled Samples collected from surface or depth where appropriate	All samples analysed according to procedures Correct methods employed Correct PQLs employed Chain of custody requirements acted upon Lab holding times appropriate	As per appropriate regulations and guidelines

- PQLs – Practical Quantitation Limits
- RPD – Relative Percentage Difference
- RAP – Remediation Action Plan

2.8 Step 7 - Optimise the Design for Obtaining Data

EPA (2006) - *Identify the most resource-effective sampling and analysis design for general data that are expected to satisfy the DQOs.*

See :

Section 6: Discussion & Recommendations

SECTION 3: SITE INFORMATION

3.1 Site Identification

Suburb/LGA	Street Address	Lot. No.	Deposited Plan No. (DP)	Area (m^2)
Suburb: Oxford Falls / Narraweena LGA: Warringah Parish: Manly Cove County: Cumberland	74 Willandra Road Narraweena (Oxford Falls) NSW	810	DP 752038	28,362.68 (approx. 2.8 ha)

3.2 Geology

The area is characterised by the Hawkesbury Soil (colluvial) Landscape.

The site is underlain by the Middle Triassic Hawkesbury Sandstone Formation. The Hawkesbury Sandstone comprises medium to coarse grained sandstone with minor shale and laminate lenses. It is of fluvial origin with limited lacustrine and wind induced deposition with numerous braided alluvial channel fills.
(Sydney, Geological Map of NSW, 1:100 000 Geological Series Sheet 9130, Edition 1, NSW Dept. of Mineral Resources, 1983).

3.3 Topography and Hydrogeology

The site is located on the 60 metre contour.

It is likely that the surface and groundwater shall follow the topography and flow east to South Creek. South Creek flows north 2.5 km to Narrabeen Lakes and thence to the Pacific Ocean.

Groundwater migration pathways through the Hawkesbury Sandstone formation are generally through the bedding planes, joints and fissure sets. The presence or not of these conduits shall determine the groundwater flow. It is assumed that groundwater would be located at some depth. (*Mona Vale 9130-1S, 2nd Edition 1:25,000 Topographic Map)*

3.4 Acid Sulfate Soil Risk

The Department of Water & Conservation Acid Sulphate Soils Maps for the entire greater Sydney area, were consulted. The area was located on the *Hornsby/Mona Vale 9130S1 – Acid Sulfate Soil Risk Map* (Edition 2). This area falls within the: 'No known occurrences of acid sulphate soil material' zone.

It is our opinion that acid sulfate soils shall not be an issue affecting the site.

3.5 Zoned Land Use

The land is currently within the Warringah Local Environmental Plan 2000 as *'B2 Oxford Falls Valley*. It is understood that there shall not be an application to change this zoning.

3.6 WorkCover NSW

A search of the Stored Chemical Information Database (SCID) and the microfiche records held by WorkCover in September 2013, had not located any records pertaining to the site located at 74 Willandra Road, Narraweena (See WorkCover NSW letter dated 9 September 2013 – Ref: D13/108906 in Appendix C)

3.7 LGA (Warringah Council) Section 149 Certificate

Relevant sections of the certificate:

5. Is the land proclaimed a mine subsidence district?
NO.

6. Is the land affected by any road widening, road realignment, any environmental instrument, any resolution by Council?
NO.

7. Is the land affected by a policy that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulfate soils or any other risk; by the Council or any other public authority?
NO.

9A. Is this land biodiversity certified land?
NO

11. Is the land Bush Fire Prone land?
YES.

12. Is the land subject to a property vegetation plan under the Native Vegetation Act?
NO.

17. Relating to the Contaminated Land Management Act 1997:

(a). Has the land been designated as significantly contaminated within the meaning of the Act?
NO

(b). Is the land subject to a management order within the meaning of the Act?
NO.

(c). Is the land subject to a voluntary management proposal within the meaning of the Act?
NO.

(d). Is the land subject to an ongoing maintenance order within the meaning of the Act?
NO.

(e). Is the land the subject of a Site Audit Statement within the meaning of the Act?
NO.

The Section 149 Certificate concludes with:
Council records do not have sufficient information about the uses (including previous uses) of the land which is the subject of this Section 149 certificate. To confirm that the land hasn't been used for a purpose which would likely to have contaminated the land, parties should make their own enquiries as to whether the land may be contaminated.

3.8 Site Title History

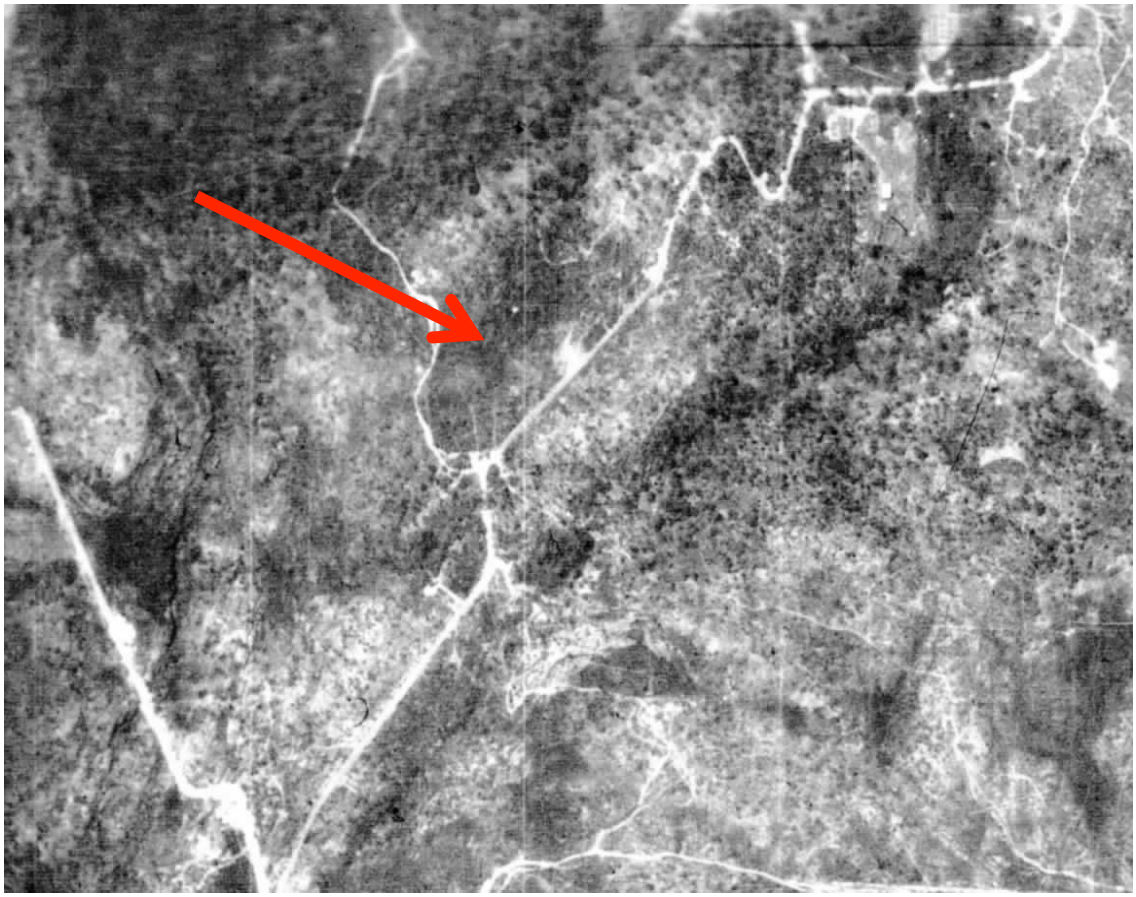
SUMMARY OF PROPRIETORS

Year	Proprietor	Source
2012-To Date*	Yi Ling Jin	Current Certificate of Title*, Document AH274136
2012	Paul Thornton Simmons, Angela Louise Simmons	Document AH274136, Document AG873553*
1980-2012	Peter Emanuel Papapetros (medical practitioner), Patricia Margaret Papapetros (his wife)	Document AG873553*, Vol. 12177 Fol. 11
1969-1980	General Development (Building) Company Pty. Limited	Vol. 12177 Fol. 11, Vol. 3469 Fol. 184
1964-1969	John Eugene Gregory (company director)	Vol. 3469 Fol. 184
1951-1964	John Eugene Gregory (company director), Ana Gregory (his wife)	Vol. 3469 Fol. 184
1950-1951	Alan Malcolm Scott (chartered accountant)	Vol. 3469 Fol. 184
1938-1950	Edward Sydney Watkins (clerk)	Vol. 3469 Fol. 184
1923-1938	Edward Sydney Watkins (clerk), Martin Franckel (public accountant)	Vol. 3469 Fol. 184, Vol. 1043 Fol. 123
1891-1923	Sydney Collings Watkins (medical practitioner)	Vol. 1043 Fol. 123
1891	Crown Land	Vol. 1043 Fol. 123

3.9 Historical Air Photos & Maps with Discussion

An inspection of available aerial photographs was undertaken.

3.9.1 Closeup 1930 Aerial Photo

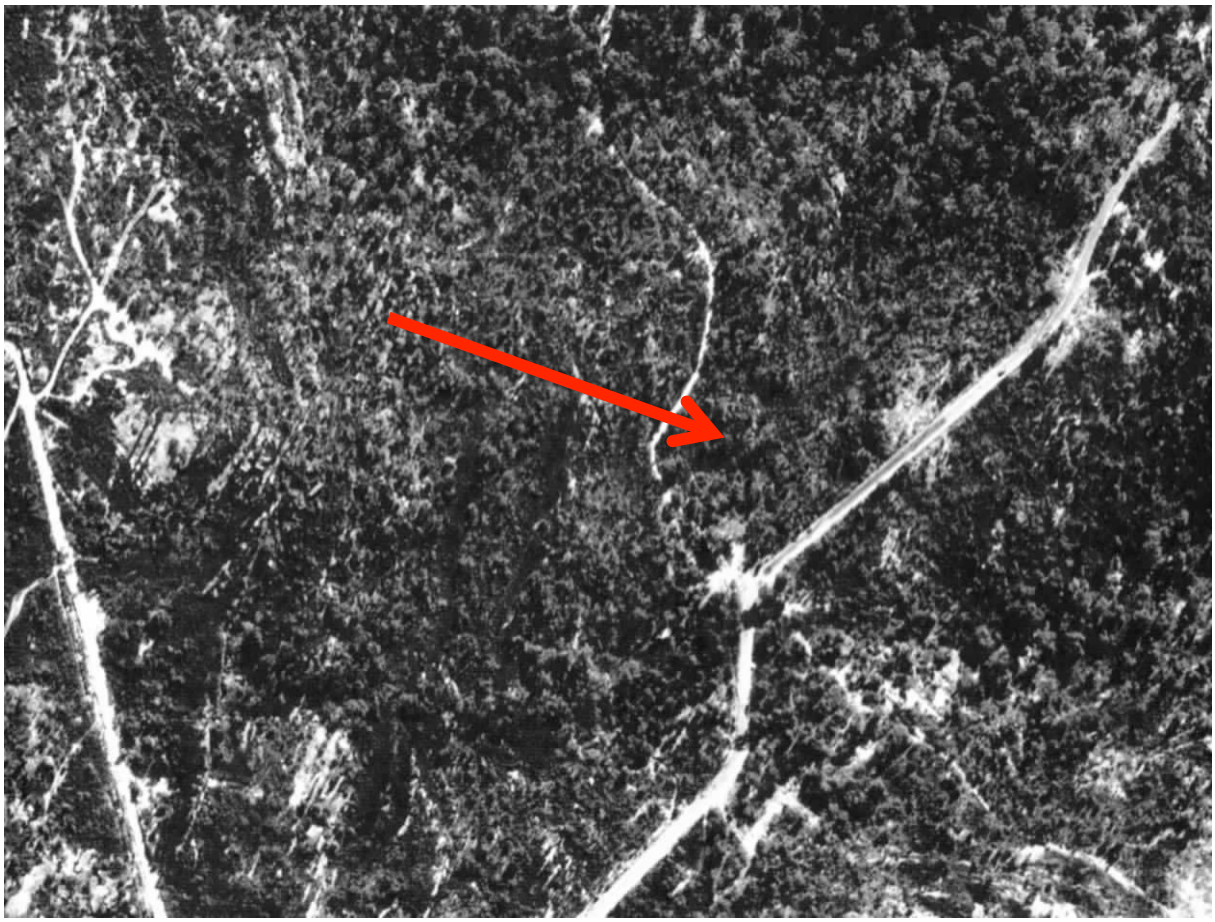


Closeup 1930 Aerial Photo: The site appears to be bushland and all surrounding land is un-developed. Willandra Road appears to be unsealed. Very few buildings are visible along the road.

A small track runs from the Willandra Road 'dog-leg' through the properly to the north. (The present day Rural fire Brigade is located on the then 'dog-leg' in the road).

Regionally, the area is un-developed except for a number of orchard or agricultural activities between the area and Warringah Road to the south and south east.

3.9.2 Closeup 1961 Aerial Photo



Closeup 1961 Aerial Photo: The site appears to be bushland and all surrounding land is un-developed. Willandra Road appears to be unsealed. Very few buildings are visible along the road.

A small track runs from the Willandra Road 'dog-leg' through the properly to the north. (The present day Rural fire Brigade is located on the then 'dog-leg' in the road).

Regionally, no houses are located along Willandra Road, however a number of farms and a major residential development are located to the south and south east of the site.

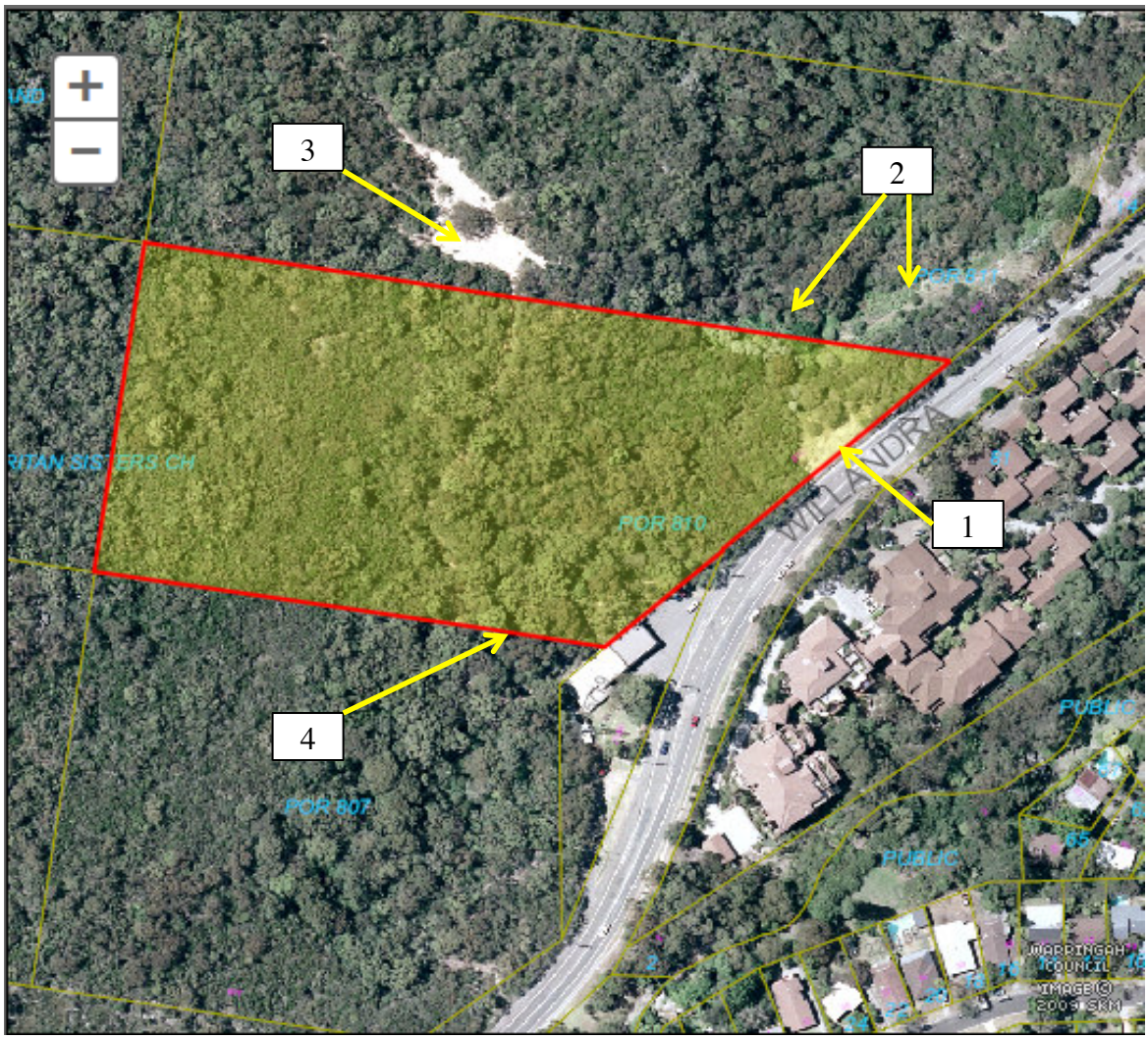
3.9.3 Closeup 1986 Aerial Photo

Closeup 1986 Aerial Photo: The ‘dog-leg’ in Willandra Road has been by-passed and the area that was freed-up now houses the Rural Fire Brigade building.

A small track runs from the Willandra Road through the properly to the north.

Regionally, no houses are located along the immediate area north of Willandra Road, however a major residential development is located to the south and south east of the site.

3.9.4 Closeup Recent Aerial Photo



Closeup: Recent Aerial Photo: Aerial photo showing the boundaries of the property.

NOTE: A number of small (suspected illegal) piles of dumped material were located near or on the property. Small amounts of asbestos cement pieces were located on or adjacent to these piles. The arrows point to these areas.

#1: Cleared area on side of road behind barrier and within the bounds of the property. Broken sheet lying on ground suspected dumped from road.

#2: Adjacent property to north has been cleared. Soil has been bulldozed to create raised track/embankment trending E/W up to a small sandstone bluff. Isolated pieces of asbestos cement sheeting found within the soil of the embankment. Difficult to ascertain from the ground, however this embankment may impinge onto the property. Should be checked by a surveyor.

#3: Cleared area outside bounds of property. Isolated asbestos cement sheeting on ground.

#4: Small pile of rubbish behind Rural Fire Building. Small pieces asbestos cement sheeting on ground (Located approx. 50m west of building within bush)

3.10 Title and Air Photo Discussion

Title ownership summary:

- The site was crown land until 1891.
- The site was in private hands up until 1969.
- The site was owned by General Development (Building) Company from 1969 to 1980.
- The site was again in private hands from 1980 to the present day.

No buildings or associated infrastructure were located on site in the 1930, 1961 or 1986 aerial photos.

The air photos indicate that the property has never been developed.

3.11 Office of Environment & Water (former EPA NSW) Database

A search of the OE&H contaminated land database was carried out via the internet for the LGA of Warringah. The site in question was not listed.

Suburb	Address	Site Name	Notices related to this site
Belrose	56-58 Glen Street	Glenrose Shopping Centre	2 current and 5 former
Forestville	632 Warringah Road	BP Service Station	1 current
Forestville	667 Warringah Road	Shell Service Station - Forestville	2 current
Narrabeen	Wakehurst Parkway	NSW Academy of Sport	1 current and 1 former

SECTION 4: SITE INSPECTION

A site inspection was carried out on 11 September 2013.

4.1 Building Condition, Current Occupier and Use

The block is vacant. No buildings on site. The block is a large (2.8 Ha) undeveloped piece of land.

4.2 Surrounding Land Use

North: Bushland and isolated homes.

West: Immediately adjacent is native bushland. After that approximately 500 metres west are residential homes bounded by Lady Penrhyn Drive

South: Beacon Hill Rural Fire Brigade headquarters located immediately adjacent between Willandra Road and the property. Further south across the road are residential dwellings

East: The block immediately to the east is being developed.

4.3 Surface Condition and Vegetation

The block comprises predominantly of native vegetation. The topography is typical Hawkesbury sandstone environment.

Assorted tracks and sandstone outcrops are located in the north portion of the land. A number of cleared areas are located close to the road and behind the Rural Fire Brigade building.

Isolated areas of illegal dumping were located on the property. Small pieces of asbestos cement were located in four areas on the property (or near the properties' boundaries). Three are of concern and relevant to this investigation. The locations are shown on the aerial photo in 3.9.4 and recommendations concerning these areas are given in *Section 6.2 Recommendations.* Three areas need remediation prior to development.

4.4 Underground Tanks and Associated Services

No underground tanks were located during the inspection.

4.5 Fill Material

Other than the areas identified above where asbestos was identified, no other areas of noticeable imported fill were located, and not suspected.

4.6 Chemical and Waste Storage

No waste storage tanks were located during the inspection

SECTION 5: AREAS OF ENVIRONMENTAL CONCERN

5.1 Potential Receptors

The site inspection revealed a number of potential receptors for off site migration of potential contamination:

- Adjacent properties down gradient across the road and to the south-east.

5.2 Potential Sources and Contaminants of Concern

Historical Activity	Contaminating Activity	Contaminants of Concern	Likelihood
Vacant land	Illegal dumping	Rubbish, asbestos	Debris and rubbish, and isolated asbestos cement sheeting were located during the inspection.
Fill material	Imported fill	PAH, Heavy metals (common fill within inner Sydney)	Not developed - Unlikely to import fill when there is good quality material on site.
Industrial activity	General works	General waste	Unlikely – no indication the site has been used for this purpose.

Abbreviations	
Heavy metals	As (Arsenic), Cd (Cadmium), Co (Cobalt), Cu (Copper), Cr (Chromium), Pb (lead), Ni (Nickel), Hg (Mercury), Ti (Titanium), Zn (Zinc)
PAHs	Polycyclic Aromatic Hydrocarbons
VOCs	Volatile Organic Compounds
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
TRH	Total Recoverable Hydrocarbons
PCBs	Polychlorinated Biphenyls

SECTION 6: DISCUSSION & RECOMMENDATIONS

6.1 Discussion

Points taken into consideration to enable recommendations:

- The property was crown land up until 1891. The site was in private hands up until 1969 and again in private hands from 1980 to the present day.
- The site was owned by the General Development (Building) Company from 1969 to 1980.
- There are no historical records of use for commercial or industrial activities.
- The site inspection did not reveal any signs of industrial or commercial activity (other than the illegal dumping discussed below).
- The title search and historical aerial photos show that the property has never been developed. There is no evidence the property has been used for any industrial activity that may have had an impact on the soil with respect to chemical contamination.
- No chemical and/or waste storage tanks were located or are suspected to be located on the site.
- No significant staining or odours were identified during the inspection.
- The maps provided indicate that PASS (Potential Acid Sulfate Soil) shall not be an issue for this development. The area falls within the: 'No known occurrences of acid sulphate soil material' zone.
- There are no records held by WorkCover NSW that the site has been used to store hazardous goods (fuel, chemicals etc).
- The site is not listed on the Office of Environment & Heritage (EPA NSW) Contaminated Lands database.
- The site is covered with mainly native and some introduced vegetation. All trees, scrubs and grasses inspected appeared to be healthy.
- The soil is typically Hawkesbury sandstone coarse grained sandy soils.
- The block grades to higher elevation moving away north-west from the road. Sandstone outcrops are located in the rear portions of the land.

- Isolated areas of illegal dumping were located on the property. Some small pieces of asbestos cement were located in three of these areas on the property (or near the properties' boundaries).

6.2 Recommendations

Considering the above points, it is the opinion of EBG that a Detailed Stage 2 Environmental Site Assessment as defined in the EPA NSW Guidelines for Consultants Reporting on Contaminated Sites Nov 1997, is not considered necessary.

Within the Scope of Works for this report, EBG considers the land shall be suitable for the proposed development (ie: construction of a residential boarding house and associated infrastructure) if the following remediation provisos and notes below are undertaken:

Remediation Provisos:
Below are three areas located on the property or near the boundaries, where asbestos pieces have been located during the inspection. The locations are shown on the aerial photo in 3.9.4 and the locations cited refer to that aerial photo (Note: Location No. 3 is not included in the recommendations as it sits outside the property boundaries). The recommendations concerning these areas are listed below.

- R1 – Location No. 1: Cleared area on side of road behind barrier and within the bounds of the property. Located approximately 150 metres east of the Rural Fire Brigade building. Broken sheet lying on ground. This can be seen from the road. Suspected dumped from road traffic. The broken asbestos cement sheeting shall be removed as bonded asbestos prior to development as per *Appendix B: Specification for the Removal of Bonded Asbestos*.

- R2 - Location No. 2: The adjacent property to the north has been cleared and a suspected development is being undertaken to accommodate a house or similar. Soil has been bulldozed to create raised track/embankment trending NE/SW and then E/W up to a small sandstone bluff to the rear of the properties. Isolated pieces of asbestos cement sheeting and other building debris were found within the soil of this embankment. It is difficult to ascertain from the ground, however this embankment may impinge onto the property or within the property's northern boundary. Whether this is the case should be checked by a surveyor. If the embankment or part thereof is located within the property boundaries, the pieces of asbestos cement sheeting located within the subject property shall be removed as bonded asbestos prior to development as per *Appendix B: Specification for the Removal of Bonded Asbestos* or alternatively the soil may be removed back into the adjacent property (its suspected origin).

- R3 - Location No. 4: Small pile of rubbish behind Rural Fire Building. Small pieces asbestos cement sheeting on ground (Located approx. 50m west of building within bush). The pile consists of typical household waste (plastic, bottles etc) and has been placed there some time ago. Isolated pieces of asbestos cement sheeting were found within the pile. The broken asbestos cement sheeting shall be removed as bonded asbestos prior to development as per Appendix B: Specification for the Removal of Bonded Asbestos).

IMPORTANT NOTE # 1 – Removal of Extra Found Asbestos Pieces : During development works the builder and contractors should be made aware that surface pieces of asbestos have been located and removed from site. The builder and contractors should be vigilant during works and check the soil surface and areas of vegetation for possible pieces of asbestos cement sheeting. Any extra found pieces of asbestos cement sheeting shall be removed as bonded asbestos prior to development as per *Appendix B: Specification for the Removal of Bonded Asbestos*.

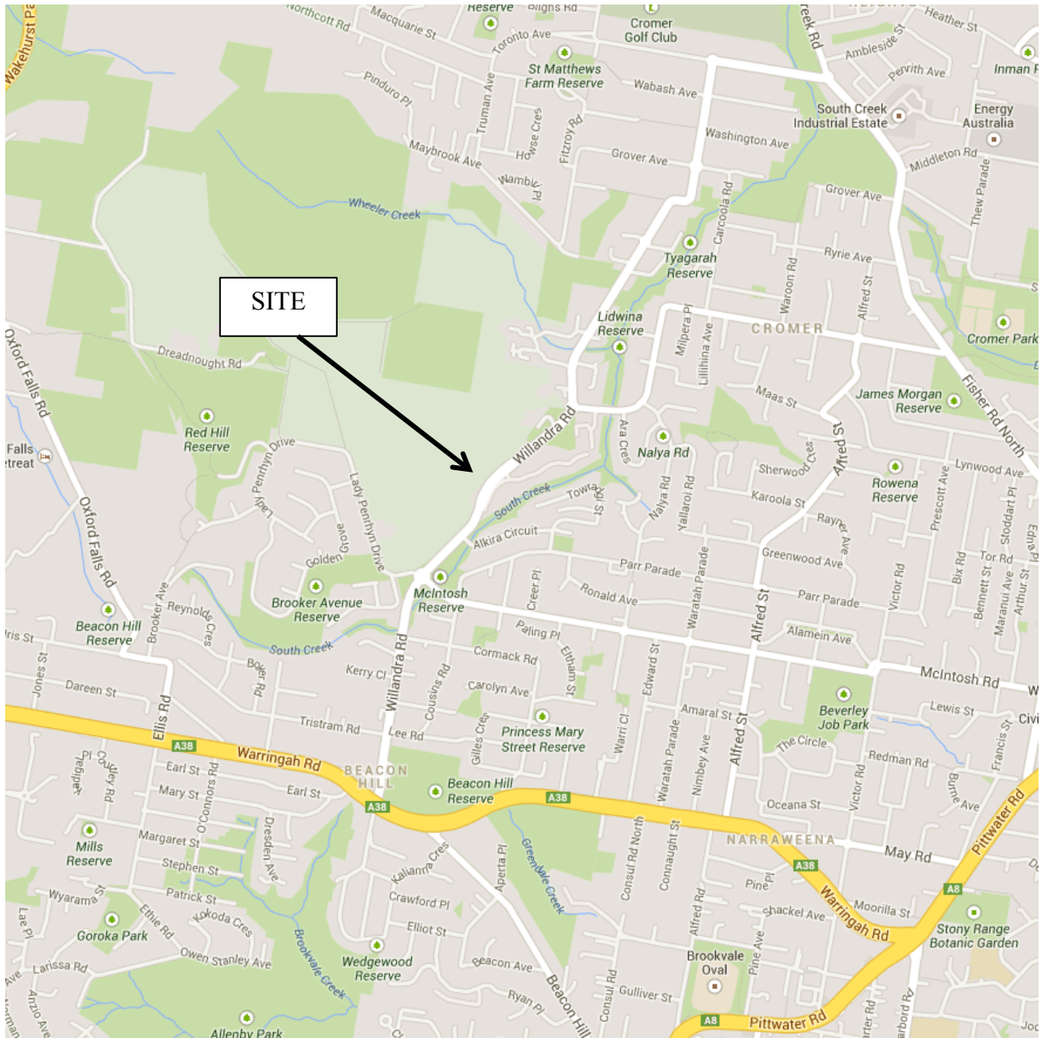
IMPORTANT NOTE # 2 - Removal of Soil : It is not suspected that soil shall be removed from the property. However if this does occur the soils must first be classified as per the *DECC NSW Waste Classification Guidelines (Part 1 : Classifying Waste – Department of Environment & Climate Change NSW* (December 2009) prior to disposal.

SECTION 7. REFERENCES AND LEGISLATION

- *Mona Vale 9130-1S, 2nd Edition 1:25,000 Topographic Map:* Land & Property Information 2001.
- Sydney, Geological Map of NSW, 1:100 000 Geological Series Sheet 9130, Edition 1, NSW Dept. of Mineral Resources, 1983.
- *Hornsby/Mona Vale 9130S1 – Acid Sulfate Soil Risk Map* (Edition 2). Land & Water Conservation.
- EPA NSW *Guidelines for the NSW Site Auditor Scheme* (2nd Edition – April 2006).
- NSW *Contaminated Land Management Act* 2008 No.11.
- *Managing Land Contamination – Planning Guidelines SEPP 55 – Remediation of Land* – Dept. of Urban Affairs & Planning and EPA NSW 1998.
- *Guideline on Investigation Levels for Soil & Groundwater : Schedule B1* – National Environment Protection Measure (NEPM) April 2011.
- *Australian and New Zealand Guidelines from the Protection of Aquatic Organisms – 95% Protection of Species for Fresh and Marine Water* (ANZECC 2000).
- *Virgin excavated natural material and Waste Classification Guidelines (Part 1 : Classifying Waste* – Department of Environment & Climate Change NSW (December 2009).
- EPA NSW *Sampling Design Guidelines* September 1995.
- EPA NSW *Guidelines for Assessing Service Station Sites* December 1994.
- *Virgin excavated natural material (DECC 2008/447)* Fact Sheet 2008.
- *DEC NSW Guidelines for Assessing Former Orchards & Market Gardens* June 2005.
- OEH NSW *Guidelines for Consultants Reporting on Contaminated Sites* 1997, 200. Reprinted August 2011

APPENDIX A : LOCALITY PLANS AND PHOTOGRAPHS

- Figure 1 (02323-F01) – Regional Locality Map & Site Boundaries
- Photographs



N

PROJECT		TITLE
Stage 1 Preliminary Environmental Site Assessment 74 Willandra Road Narraweena (Oxford Falls) NSW		SITE LOCATION & BOUNDARIES
DATE: 13.09.13	PROJECT ID: EBG-02323.Stage1.ESA	
SCALE: Not to Scale	Figure No 1: 02323-F01	

Appendix A - PHOTOGRAPHS : Stage 1 ESA : 74 Willandra Rd, Narraweena NSW (EBG-02323.Stage1.ESA)

APPENDIX B: SPECIFICATION FOR THE REMOVAL OF BONDED ASBESTOS

APPENDIX B: SPECIFICATION FOR THE REMOVAL OF BONDED ASBESTOS MATERIAL

Bonded Asbestos Materials: Removal required if material is to be disturbed during refurbishment or demolition.

In accordance with the *Work Health and Safety Act 2011 (WHS Act)* and *Work Health and Safety Regulation 2011 (WHS Regulation)* removal shall be by a Asbestos Removalist who holds a *Bonded (Class B) Asbestos Removal Licence*. Note: A licence is required where the surface area of bonded asbestos removed, is greater than 10m^2 (as of January 1 2008).

Where practicable, plastic barriers should be constructed at the entrance to the removal area.

The removalist shall wear disposable overalls of 100% synthetic material or a mixed natural/synthetic fabric capable of providing adequate protection against fibre penetration.

Goggles and a head covering shall be used in the event of overhead work. A half face respirator fitted with a P1 filter shall be used.

Following this removal process, the asbestos material is to be wrapped in plastic sheeting and taped.

Smaller pieces of asbestos debris when removed shall be placed in heavy-duty polythene bags approximately 0.2mm thick, or other approved containers.

It is recommended that a maximum bag size of 1200mm (length) x 900mm (width) be observed. Bags should be filled to no more than 50% capacity. The bags shall be marked, “Caution - Asbestos: Do Not Inhale Dust, Do Not Open Bag”. The top of the bag when full shall be twisted, folded down and taped. The bag shall then be placed in the plastic lined skip bin.

The work shall be in accordance with *WorkCover NSW, How to Safely Remove Asbestos – Code of Practice.*

Asbestos is classified as a special waste and shall be tipped at approved sites. Copies of the tipping receipts should be provided to the project manager.

All work carried out shall be in accordance with:

- *Work Cover NSW, How to Safely Remove Asbestos – Code of Practice, Work Health and Safety Act 2011 (WHS Act)*
- *Work Health and Safety Regulation 2011 (WHS Regulation)*
- National Occupational Health and Safety (NOHSC:2002, 1998) Code of practice for the safe removal of asbestos;
- EPA NSW (1999) Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-liquid Wastes;
- Protection of the Environment Operations (Waste) Regulations 1996;
- Protection of the Environment Operations Act 1997;
- Occupational Health and Safety Act, 2000; and
- Occupational Health and Safety Regulation, 2001.

APPENDIX C: HISTORICAL TITLE INFORMATION AND OTHER DOCUMENTATION

NSW GOVERNMENT | WorkCover

WorkCover NSW
92-100 Donnison Street, Gosford, NSW 2250
Locked Bag 2906, Lisarow, NSW 2252
T 02 4321 5000 F 02 4325 4145
WorkCover Assistance Service 13 10 50
DX 731 Sydney workcover.nsw.gov.au

Our Ref: D13/108906
Your Ref: Michael Edwards

9 September 2013

Attention: Michael Edwards
EBG Environmental Geoscience
PO Box 284
Annandale NSW 2038

Dear Mr Edwards,

RE SITE: 74 Willandra St Narraweena NSW

I refer to your site search request received by WorkCover NSW on 2 September 2013 requesting information on licences to keep dangerous goods for the above site.

A search of the Stored Chemical Information Database (SCID) and the microfiche records held by WorkCover NSW has not located any records pertaining to the above mentioned premises.

If you have any further queries please contact the Dangerous Goods Licensing Team on (02) 4321 5500.

Yours Sincerely

Brent Jones
Senior Licensing Officer
Dangerous Goods Team

Environmental Legal Searches
Environmental Management Group Pty Ltd
ACN 108 771 482
ABN 76 784 207 704

MOBILE: 0422 406 909, 0404 069 995
EMAIL: search@elsearches.com.au
WEB: www.elsearches.com.au

5 September 2013

Edwards Bläsche Group Pty Ltd
PO Box 284
Annandale NSW 2038 AUSTRALIA

Attention: ***Mr Michael Edwards***

RE: Lot 810 DP 752038, Willandra Street, Narraweena, NSW
Your Ref:
,

SUMMARY OF PROPRIETORS

Lot 810 DP 752038

Year	Proprietor	Source
2012-To Date*	Yi Ling Jin	Current Certificate of Title*, Document AH274136
2012	Paul Thornton Simmons, Angela Louise Simmons	Document AH274136, Document AG873553*
1980-2012	Peter Emanuel Papapetros (medical practitioner), Patricia Margaret Papapetros (his wife)	Document AG873553*, Vol. 12177 Fol. 11
1969-1980	General Development (Building) Company Pty. Limited	Vol. 12177 Fol. 11, Vol. 3469 Fol. 184
1964-1969	John Eugene Gregory (company director)	Vol. 3469 Fol. 184
1951-1964	John Eugene Gregory (company director), Ana Gregory (his wife)	Vol. 3469 Fol. 184
1950-1951	Alan Malcolm Scott (chartered accountant)	Vol. 3469 Fol. 184
1938-1950	Edward Sydney Watkins (clerk)	Vol. 3469 Fol. 184
1923-1938	Edward Sydney Watkins (clerk), Martin Franckel (public accountant)	Vol. 3469 Fol. 184, Vol. 1043 Fol. 123
1891-1923	Sydney Collings Watkins (medical practitioner)	Vol. 1043 Fol. 123
1891	Crown Land	Vol. 1043 Fol. 123

*Documents sighted but not purchased

Note:

From 1891 to 2012 – both Lots 807 and 810 DP 752038 were under the same proprietors.

Paul Thornton and Angela Louise Simmons separated the titles in August 2012 by Request AH925942

Environmental Legal Searches
Environmental Management Group Pty Ltd
ACN 108 771 482
ABN 76 784 207 704

MOBILE: 0422 406 909, 0404 069 995
EMAIL: search@elsearches.com.au
WEB: www.elsearches.com.au

Terms of Conditions & Limitations

1. The client is responsible for payment associated with the search.

2. The client is authorised to use our report subject to settlement of our account. Until the account is settled, the report remains the property of Environmental Legal Searches. If the account is not settled within 30 days of the invoice date, then the authority to use the report may be revoked. Where authority to use the report is revoked, all references to the report should be deleted or rendered inactive until the account is settled.

3. Search was based on **Lot 810 DP 752038** provided by **Mr Michael Edwards.** The street number (if applicable) is for reference only.

   The attached cadastral plan MUST be checked against the survey plan for the property for correctness.

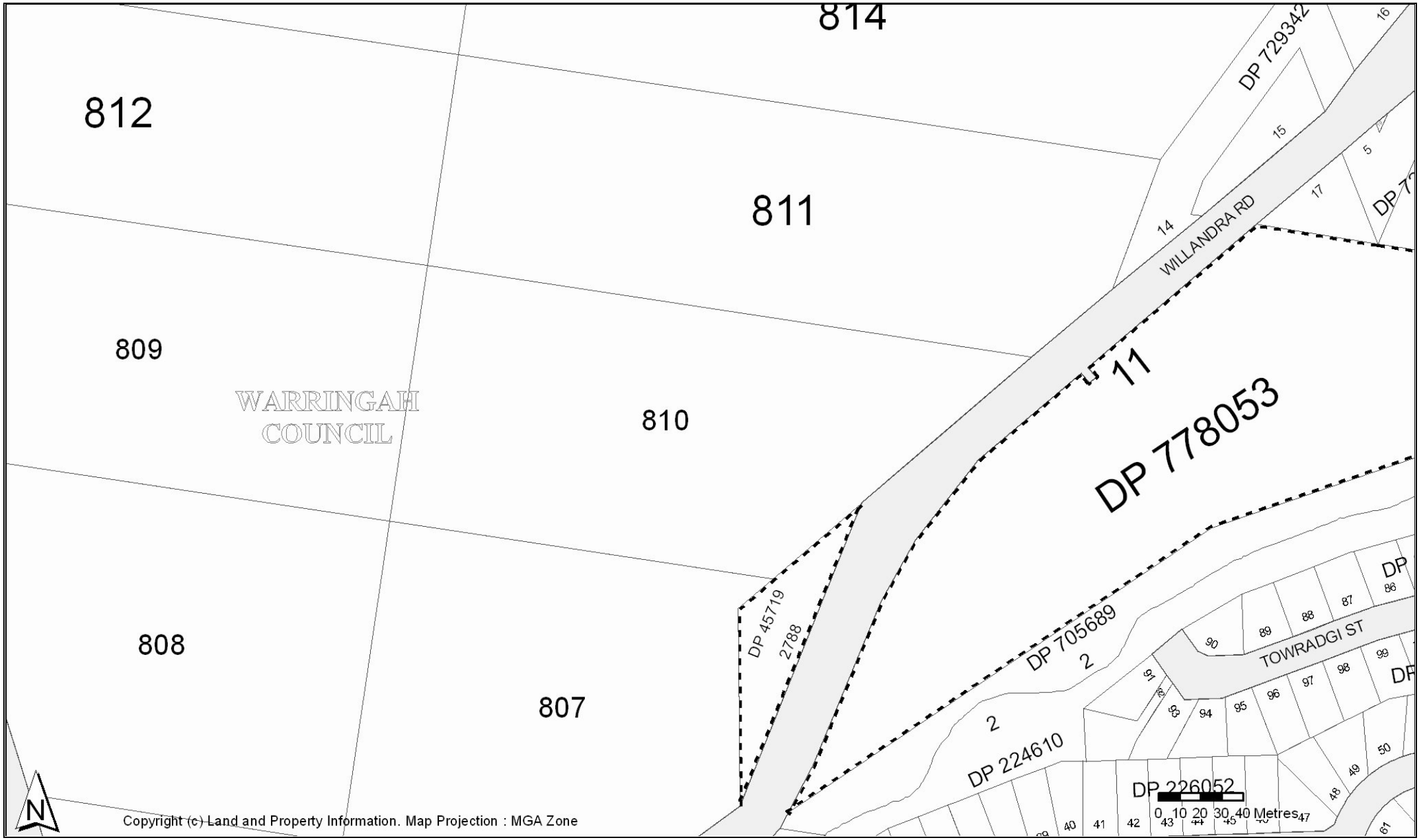
4. Any details of the lease(s), sub-lease(s) and/or transfer of lease(s) were solely extracted from the records shown on the current certificate(s) of title (title search), documents of lease(s)/ sub-lease(s)/transfer of lease(s), the cancelled certificate(s) of title and/or the old system vendor/purchaser volume(s). The MOST RECENT record may not be available on the day of the searching.

5. Although the search is performed to a professional and diligent standard, we cannot warrant any loss or damages which may be associated with our search. We therefore limit any potential liability associated with our search to the cost of our services.

Cadastral Records Enquiry Report

Requested Parcel : Lot 810 DP 752038 **Identified Parcel :** Lot 810 DP 752038

Locality : OXFORD FALLS **LGA :** WARRINGAH **Parish :** MANLY COVE **County :** CUMBERLAND



This information is provided as a searching aid only. While every endeavour is made to ensure the current cadastral pattern is accurately reflected, the Registrar General cannot guarantee the information provided. For all ACTIVITY PRIOR to SEPT 2002 you must refer to the RGs Charting and Reference Maps.

Land and Property Information Division

ABN: 84 104 377 806
GPO BOX 15
Sydney NSW 2001
DX 17 SYDNEY Telephone: 1300 052 637

NSW GOVERNMENT Land & Property Information

A division of the Department of Finance & Services

HISTORY OF TITLE TRANSACTION

Title Reference: 810/752038

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
5/9/2013 4:23AM

FOLIO: 810/752038

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 12177 FOL 11

Recorded	Number	Type of Instrument	C.T. Issue
3/12/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
18/10/1991		CONVERTED TO AUTO CONSOL 12177-11	CONSOL CREATED CT NOT ISSUED
29/8/2012	AH205317	EXCISED FROM AUTO CONSOL 12177-11	
29/8/2012	AG925942	REQUEST	EDITION 1
2/10/2012	AH274135	DISCHARGE OF MORTGAGE	
2/10/2012	AH274136	TRANSFER	
2/10/2012	AH274137	MORTGAGE	EDITION 2

*** END OF SEARCH ***

PRINTED ON 5/9/2013

Form: 01T
Licence: 01-05-025
Licensee: LEAP Legal Software Pty Limited
Firm name: Yuill Lawyers

TRANSFER

New South Wales
Real Property Act 1900

AH274136P

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY — Office of State Revenue use only

Office of State Revenue
NSW Treasury
Client No: 112141414 3117
Duty: $10 Trans No: 6829639
Asst details:

(A) **TORRENS TITLE** — 810/752038

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
254	Westpac Banking Corporation ABN 33 007 457 141 25 Pierson St Lockleys SA 5032 Tel: 132 558 Fax: 1300 655 674 Reference: LLPN: 132097R	T TW

(C) **TRANSFEROR** — Paul Thornton Simmons & Angela Louise Simmons

(D) **CONSIDERATION** — The transferor acknowledges receipt of the consideration of $800,000.00 and as regards

(E) **ESTATE** — the abovementioned land transfers to the transferee an estate in fee simple.

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** — Yi Ling Jin

(I) **TENANCY:**

DATE

(J) I certify I am an eligible witness and that the transferor signed this dealing in my presence. [See note* below]

Signature of witness: Eve Anne Kiernan

Name of witness: Eve Anne Kiernan

Address of witness: 6 Ventura Place
Warriewood 2102

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor: PSimmons

Certified correct for the purposes of the Real Property Act 1900 on behalf of the transferee by the person whose signature appears below.

Signature:

Signatory's name: Jia Jia Su

Signatory's capacity: ~~Solicitor~~ agent for the Transferee Conveyancer

(K) The transferee certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 325450 Full name: Jia Jia Su Signature:

** s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation.*

ALL HANDWRITING MUST BE IN BLOCK CAPITALS.

[redacted]ICATE OF TITLE

12177011

NEW SOUTH WALES

PROPERTY ACT, 1900

Crown Grant Vol.1043 Fol.123

Prior Title Vol.3469 Fol.184

Vol. 12177 Fol. 11

Edition issued 2-8-1973

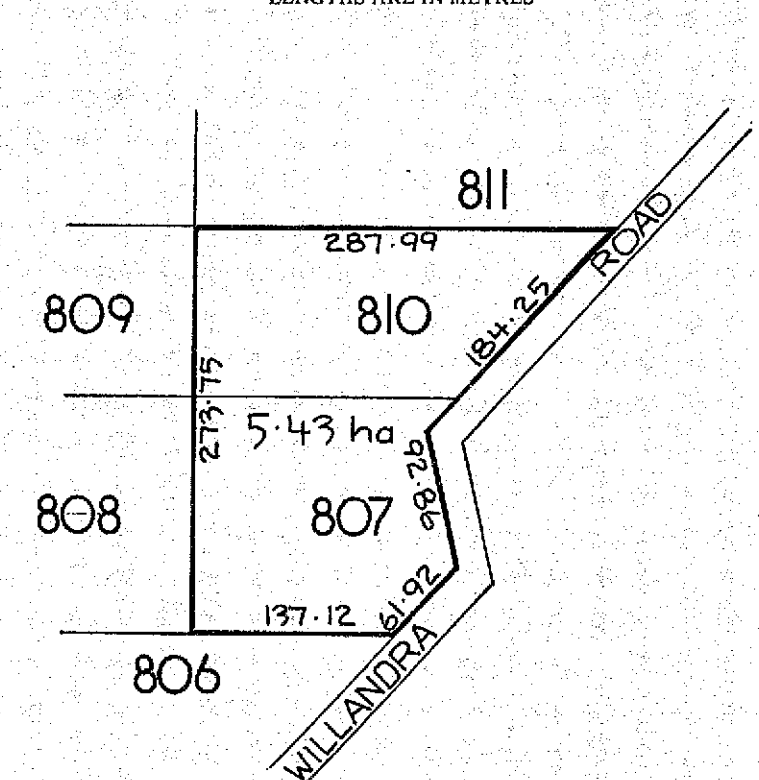
N311237

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Registrar General.

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



N311237

REDUCTION RATIO 1:500

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Portions 807 and 810 in the Shire of Warringah Parish of Manly Cove and County of Cumberland. EXCEPTING THEREOUT the minerals reserved by the Crown Grant.

FIRST SCHEDULE

~~GENERAL DEVELOPMENT (BUILDING) COMPANY PTY. LIMITED.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

Registrar General

Vol. 12177 Fol. 11

D311238 M — 39 M
D820034 TE (Re N311238).
R20031 Sr.93 2 T/M (N311239)
R974996 D/M — 977 Tel
W971390M R.
Y798561 DM

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
Peter Emanuel Papapetros of Woollahra, Medical Practitioner and Patricia Margaret Papapetros his wife as joint tenants	Transfer	R974997	------	13-8-1980	

CANCELLED

SEE AUTO FOLIO

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
Mortgage	N311238	4.6.1973	to Deposit and Investment Company Limited	16.8.1973		Discharged	R974996	
Mortgage	N311239	13.6.1973	to John Eugene Gregory of Vaucluse, Company Director	16.8.1973		Discharged	R974996	
Mortgage	N311238	—	affected by [illegible] Transfer of Mortgage Mortgagees now Peter Emmanuel Papapetros of Woollahra, Medical Practitioner and Margaret Patricia Papapetros his wife as joint tenants	[illegible]		Cancelled	R974996	
Mortgage	N311239	—	Affected by R20031 Notice of Death and R20032 Transfer of Mortgage Mortgagees now Peter Emmanuel Papapetros of Woollahra Medical Practitioner and Margaret Patricia Papapetros his wife as joint tenants	8-1-1979		Cancelled	R974996	
W971390 Mortgage to Commonwealth Bank of Australia Registered 21-7-1987						Y798561	31-1-1990	

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED