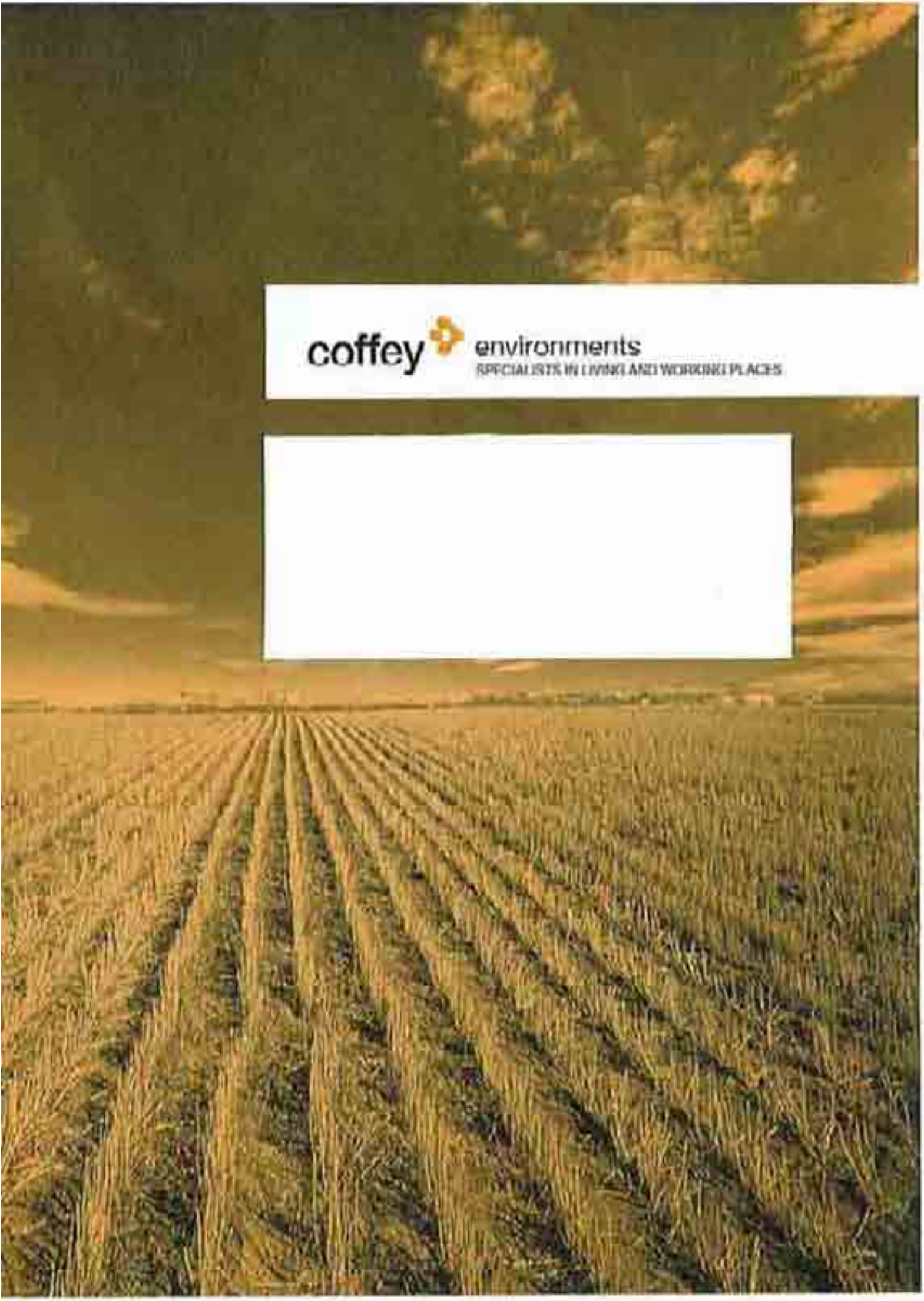

coffey
environments
SPECIALISTS IN LIVING AND WORKING PLACES

coffey environments
SPECIALISTS IN LIVING AND WORKING PLACES

CONTAMINATION ASSESSMENT
SYDNEY ADVENTIST HOSPITAL
185 FOX VALLEY ROAD
WAHROONGA NSW

Prepared for:

Taylor Thomson Whitting
Level 3, 19 Chandos Street
ST LEONARDS, NSW, 2065

Report Date. 30 May 2006
Project Ref. GEOTLCOV23402AA

Written/Submitted	Reviewed/Approved by:
Daniel Dean Environmental Scientist	Manuel Fernandez Associate Environmental Engineer

Coffey Environments Pty Ltd ABN 45 090 572 759
1/222 Berkeley Road Unanderra NSW 2526 Australia
PO Box 346 Unanderra NSW 2526 Australia
T (+61) (2) 4272 0071 F (+61) (2) 4272 0075 www.coffey.com.au/environments

coffey environments
SPECIALISTS IN LIVING AND WORKING PLACES

30 May 2008

Taylor Thomson Whiting
Level 3, 48 Chandos Street
ST LEONARDS, NSW, 2065

Attention: Mr Barry Young

Dear Barry,

RE: CONTAMINATION ASSESSMENT - SYDNEY ADVENTIST HOSPITAL
185 FOX VALLEY ROAD, WAHROONGA, NSW

We are pleased to present our Contamination Assessment report on the above site.

We draw your attention to the attached sheets titled "Important Information about your Coffey Environmental Report". These sheets should be read in conjunction with this report.

Thank you for your commission for this work and we look forward to the opportunity of being of assistance in the future. Should you have any questions in relation to the report, please do not hesitate to contact the undersigned.

For and on behalf of Coffey Environments Pty Ltd

MANUEL FERNANDEZ

Associate Environmental Engineer

Coffey Environments Pty Ltd ABN 40 092 022 709
10277 Berkeley Road Unanderra NSW 2526 Australia
PO Box 340 Unanderra NSW 2526 Australia
T (+61) (2) 4272 6071 F (+61) (2) 4272 6075 www.coffey.com/environments

RECORD OF DISTRIBUTION

No. of copies	Report File Name	Report Status	Date	Prepared for:	Initials
4	GEOTLCOV23462AA-AG.doc	Final	30 May 2008	Taylor Thomson Whitting Pty Ltd	
1	GEOTLCOV23462AA-AG.doc	Final	30 May 2008	Coffey Geotechnics Pty Ltd	

CONTENTS

LIST OF ATTACHMENTS		I
ABBREVIATIONS		II
EXECUTIVE SUMMARY		1
1	INTRODUCTION	3
1.1	Objectives	3
2	SCOPE OF WORK	4
3	SITE LANDUSE AND DESCRIPTION	5
3.1	Site Location and Landuse	5
3.2	Topography and Drainage	6
3.3	Local Geology, Hydrogeology and Groundwater Use	7
4	SITE HISTORY AND OBSERVATIONS	8
4.1	Summary of Site History	8
4.1.1	General	8
4.1.2	Building 1	9
4.1.3	Building 2	9
4.1.4	Building 3	9
4.1.5	Building 4	9
4.1.6	Gaps in the Site History	10
4.2	Site Observations	10
4.2.1	Building 1	10
4.2.2	Building 2	10
4.2.3	Building 3	11
4.2.4	Building 4	11
5	POTENTIAL AREAS OF ENVIRONMENTAL CONCERN (AEC) AND CHEMICALS OF CONCERN (COC)	12
6	SAMPLING AND ANALYSIS PLAN	14
6.1	Quality Assurance/Quality Control	15

CONTENTS

7	ASSESSMENT CRITERIA	16
7.1	Soil Vapour Criteria	16
7.2	Soil Investigation Levels (SILs)	16
7.3	Waste Classification Criteria	17
8	FIELD INVESTIGATIONS	18
8.1	Soil Sampling	18
8.2	Field Quality Control Procedures	19
8.3	Laboratory Analysis	20
9	RESULTS OF FIELD AND LABORATORY INVESTIGATIONS	22
9.1	Subsurface Conditions	22
9.2	Soil Vapour	23
9.3	Soil Contamination	23
9.3.1	Quality Assurance/Quality Control	23
9.3.2	Comparison of Results to Soil Investigation Levels	24
9.3.3	Comparison of Results to Waste Classification Guidelines	25
10	DISCUSSION	26
10.1	Building 1	26
10.2	Building 2	26
10.3	Building 3	26
10.4	Building 4	26
11	CONCLUSIONS	27
12	LIMITATIONS	28
13	REFERENCES	29

LIST OF ATTACHMENTS

Important Information about your Coffey Environmental Report

Tables

Table 1: Summary of Site Identification

Table 2: Potential Areas of Environmental Concern

Table 3 Generalised Soil Gas Criteria

Table 4: Summary of Duplicate Soil Samples

Table 5: Summary of Laboratory Results for Soil Samples – Proposed Building 1

Table 6: Summary of Laboratory Results for Soil Samples – Proposed Building 2

Table 7: Summary of Laboratory Results for Soil Samples – Proposed Building 3

Table 8: Summary of Soil Laboratory Results - Waste Classification for Proposed Building 1

Table 9: Summary of Soil Laboratory Results - Waste Classification for Proposed Building 2

Table 10: Summary of Soil Laboratory Results - Waste Classification for Proposed Building 3

Figures

Figure 1: Site Locality Plan

Figure 2: Site Layout Plan

Figure 3: Plan of Building 1 and 3 Showing Borehole Locations

Figure 4: Plan of Building 2 Showing Borehole Locations

Appendices

Appendix A: Site History and Groundwater Bore Search Results

Appendix B: Engineering Logs of Test Pits and Boreholes, with explanation notes

Appendix C: Soil Vapour Results

Appendix D: Chemical Laboratory Reports

Appendix E: Data Validation Report

Appendix F: Site Photographs

ABBREVIATIONS

AEC	Area of Environmental Concern
AHD	Australian Height Datum
AST	Aboveground Storage Tank
C_6-C_{36}	Hydrocarbon chainlength fraction
BH	Borehole
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
CBH	Coffey Borehole
COC	Chemical of Concern
DECC	Department of Environment and Climate Change (NSW)
DIPNR	Department of Infrastructure, Planning and Natural Resources
ID	Identification
LOR	Limit of Reporting
MGT	MGT Environmental
µg/L	micrograms per litre
mg/kg	milligrams per kilogram
mg/L	milligrams per litre
NATA	National Association of Testing Authorities
NEHF	National Environmental Health Forum
NEPM	National Environment Protection Measure
NSW EPA	Environment Protection Authority of New South Wales
OCP	Organochlorine Pesticide
OPP	Organophosphorous Pesticide
PAH	Polycyclic Aromatic Hydrocarbon

ABBREVIATIONS

PCB	Polychlorinated Biphenyl
PID	Photoionisation Detector
Ppm	parts per million
PQL	Practical Quantitation Limit
QA	Quality Assurance
QC	Quality Control
RL	Reduced Level
RPD	Relative Percent Difference
SGS	SGS Environmental Services Pty Ltd
SIL	Soil Investigation Level
SOP	Standard Operating Procedures
TD	Total Depth
TPH	Total Petroleum Hydrocarbon
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

Colley Geotechnics Pty Ltd (Colley Geotechnics) was commissioned by Taylor Thomson Whitting, to carry out a Geotechnical Investigation and Contamination Assessment at the SAN Hospital located at 185 Fox Valley Road, Wahroonga, NSW (Figure 1) (referred herein as 'the site'). The work was commissioned by Barry Young of Taylor Thomson Whitting (TTW) on behalf of Colley Projects Pty Ltd and was carried out in general accordance with the relevant sections of our fee proposal reference GEOTLCOV23464AA-AA, dated 4 February 2008. Colley Geotechnics sister company Colley Environments Pty Ltd (Colley Environments) assisted with the contamination investigation component of the works. This report presents the results of the contamination assessment which was carried out in conjunction with a geotechnical investigation (Report Ref: GEOTLCOV23462AA-AD, dated 4 April 2008).

The existing SAN Hospital is located on the western side of Fox Valley Road and is bound by The Comenarra Parkway to the south and Coups Creek to the west and north. Existing developments within the hospital grounds include multistorey buildings, roads, car parks, sport facilities and landscaped grassed areas.

We understand there are four proposed improvements to the hospital and these are labelled building 1, 2, 3 and 4 as shown on the Site Plan in Figure 2. Information of the proposed improvements are as follows:

- Building 1: A new five storey multi deck car park to be built in the same area as an existing car park at grade.
- Building 2: A new four storey reinforced concrete framed building to replace an existing car park at grade.
- Building 3: A new building with a possible three storey basement.
- Building 4: An existing three storey brick building with modifications to load bearing internal walls within the eastern corner. The building will appear unchanged from the outside.

The objectives of the contamination assessment were to assess the likelihood for contamination to exist on the site from past and present activities and make recommendations on the need for further investigation and/or remediation, should contamination be present.

The scope of work for the contamination assessment included:

- A site history study and site walkover,
- Drilling (28) boreholes, from which the subsurface conditions were logged and soil samples were collected;
- Laboratory analysis of selected soil samples for a suite of potential chemicals of concern (COC), and
- Reporting the results of the assessment including, summarising the site history, results of fieldwork, presenting and interpreting analytical results and findings, comparing chemical concentrations to applicable guidelines, and making recommendations on the need for further investigation and / or remediation and management.

EXECUTIVE SUMMARY

The results of the site history study indicated that the site has been used for hospital related purposes since at least 1951 and possibly since 1903. The proposed building areas have generally been undeveloped with part of Building 2 possibly having been used for some agricultural use and Buildings 1 and 3 recording some filling. Building 3 received larger quantities of fill to raise levels and create a retention pond. Generally the likelihood for the areas assessed to be affected by contamination was assessed to be low.

Field investigations confirmed the presence of fill soils in the three study areas ranging between 0.2m and 6.9m in depth. Building area 3 recorded the deeper fill profile with shallower fill at proposed Building areas 1 and 2. No obvious evidence of contamination was noted and samples selected for analysis for a suite of potential COCs did not record concentrations exceeding the adopted SILs for a commercial landuse.

A direct assessment of the groundwater quality was not made as part of this study. Based on the soil laboratory results, the anticipated depth to groundwater and lack of nearby contamination sources, the likelihood of groundwater contamination adversely affecting the proposed development is considered low.

Based on the results of this study it is considered that the potential for the areas assessed to be affected by land contamination that would adversely affect the proposed development is low and therefore the areas are considered suitable for proposed commercial use.

A preliminary assessment of the fill soils waste classification was made as part of this study. Based on the results, the fill soils are likely to classify as general solid waste for offsite disposal to a licensed facility. Natural soils underlying the fill are likely to classify as Virgin Excavated Natural Material (VENM), subject to the soils not being mixed with other fill soils or wastes.

1 INTRODUCTION

Coffey Geotechnics Pty Ltd (Coffey Geotechnics) was commissioned by Taylor Thomson Whitting, to carry out a Geotechnical Investigation and Contamination Assessment at the SAN Hospital located at 185 Fox Valley Road, Wahroonga, NSW (Figure 1) (referred herein as 'the site'). The work was commissioned by Barry Young of Taylor Thomson Whitting (TTW) on behalf of Coffey Projects Pty Ltd and was carried out in general accordance with the relevant sections of our fee proposal reference GEOTLCOV23464AA-AA, dated 4 February 2008. Coffey Geotechnics sister company Coffey Environments Pty Ltd (Coffey Environments) assisted with the contamination investigation component of the works. This report presents the results of the contamination assessment which should be read in conjunction with the Geotechnical Investigation report (Report Ref: GEOTLCOV23462AA-AD, dated 4 April 2008).

The existing SAN Hospital is located on the western side of Fox Valley Road and is bound by The Comenarra Parkway to the south and Coups Creek to the west and north. Existing developments within the hospital grounds include multistorey buildings, roads, car parks, sport facilities and landscaped grassed areas.

We understand there are four proposed improvements to the hospital and these are labelled building 1, 2, 3 and 4 as shown on the Site Plan in Figure 2. Information of the proposed improvements are as follows:

- Building 1: A new five storey multi deck car park to be built in the same area as an existing car park at grade.
- Building 2: A new four storey reinforced concrete framed building to replace an existing car park at grade.
- Building 3: A new building with a possible three storey basement
- Building 4: An existing three storey brick building with modifications to load bearing internal walls within the eastern corner. The building will appear unchanged from the outside.

1.1 Objectives

The objectives of the contamination assessment were to assess the likelihood for contamination to exist on the site from past and present activities and make recommendations on the need for further investigation and/or remediation, should contamination be present.

2 SCOPE OF WORK

The scope of work for the contamination assessment was as follows:

- A site history study including a review of aerial photographs, a search of historical land titles, interviewing people familiar with the history of the site, a review of published geological and topographic maps, review of NSW Department of Environment and Climate Change (DECC) records for listing of the site, a search of nearby groundwater bores registered with the Department of Natural Resources (DNR), review of dangerous goods licenses held for the site by WorkCover and a search of Ku-Ring-Gai Council (Council) records;
- A site walkover to visually assess potential sources of contamination, observe surrounding landuses, topography, drainage, nearby sensitive environments, and assess details of the site history and desk study to further assess potential Areas of Environmental Concern (AECs) and Chemicals of Concern (COCs);
- Drilling (28) boreholes, from which the subsurface conditions were logged and soil samples were collected;
- Laboratory analysis of selected soil samples for a suite of analytes including Total Petroleum Hydrocarbons (TPH), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX), Polycyclic Aromatic Hydrocarbons (PAH), Polychlorinated Biphenyls (PCB), Organochlorine Pesticides (OCP), asbestos and heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc). For waste classification purposes selected samples were also tested using the Toxicity Characteristic Leaching Procedure (TCLP) for PAH and heavy metals; and
- Preparation of this report summarising the site history, results of fieldwork, presenting and interpreting analytical results and findings, comparing chemical concentrations to applicable guidelines, and making recommendations on the need for further investigation and / or remediation and management.

3 SITE LANDUSE AND DESCRIPTION

3.1 Site Location and Landuse

The existing SAN Hospital is located on the western side of Fox Valley Road and is bound by The Comenarra Parkway to the south and Coups Creek to the west and north. The hospital grounds are a parcel of land that is irregular in shape with an approximate area of 55,550m². The approximate sizes of the three areas where new building structures will require some ground disturbance (and being the focus of this assessment) are:

- Building 1 88m x 24m 1,584m2
- Building 2 95m x 37m 3,515m2
- Building 3 32m x 30m 960m2
- Building 4 20m x 9m 180m2

Existing developments within the hospital grounds include multistorey buildings, roads, car parks, sport facilities and landscaped grassed areas. A summary of the site identification is presented below in Table 1

Table 1: Summary of Site Identification Information

Street Address	185 Fox Valley Road, Wahroonga, NSW
Area	Total - 55,550m² (size of areas covered by this assessment - are Bld 1 – 1,584m², Bld 2 – 3,515m², Bld 3 - 960m² & Bld 4 180m²)
Title Identifiers	Lot 62 DP1017514
Zoning	5(a) Special uses A (Hospital) and Part Recreation 6(b)
Local Government Area	Ku-Ring-Gai
Parish	Gordon
County	Cumberland
Grid Co-ordinates	151° 05' 48.62" E; 33° 44' 01.39" S (Centre Building 1) 151° 05' 56.41" E; 33° 43' 56.90" S (Centre Building 2) 151° 05' 60.68" E; 33° 44' 03.50" S (Centre Building 3) 151° 05' 59.41" E; 33° 44' 03.11" S (Centre Building 4)

The site locality is shown in Figure 1, the proposed improvements (Buildings 1 to 4) and the current SAN Hospital layout are shown in Figure 2. A cadastral plan is also included in Appendix A.

Surrounding land use to the SAN Hospital includes:

- Residential premises, located to the northeast, east and south;
- Creek and bushland, located to the west and northwest;
- A childcare Centre located to the southeast at the intersection of Fox Valley Road and Comenarra Parkway.

3.2 Topography and Drainage

Reference to the Hornsby 1:25,000 Topographic Map (9130 4-S) indicates that the site lies at an elevation between about 150m and 160m above Australian Height Datum (AHD). Typically the ground surface of the central hospital grounds is relatively flat and falls to the western and southern areas of the site towards Coups Creek.

A survey plan provided to Coffey Geotechnics (Drawing Ref: Plan titled 'Detail Survey of Sydney Adventist Hospital Ground', prepared by Concrete Constructions (NSW) Pty Ltd, dated 1989) indicates Buildings 1 and 3 lie at an elevation range of 156m AHD and 160m AHD and Building 2 lies at an elevation ranging between 157m AHD and 161m AHD.

Surface water at the site is anticipated to flow from the higher elevated central and northern hospital ground areas and flow towards the northwest, west and south towards Coup Creek and areas of lower elevation. A grassed stormwater retention pond was noted to the north west of proposed Building 2 and a grassed stormwater retention pond within the proposed Building 3 area. On site drainage is likely to flow into the grassed ponds during wet weather periods.

The closest watercourse to the site is Coup Creek, which is located approximately 50m north and west of the site in an inferred down slope direction. Runoff from the site is likely to flow into Coups Creek, which eventually flows into the Lane Cove River located approximately 620m to the west. The Lane Cove River flows in a south-easterly direction before joining the Parramatta River located approximately 14km to the southeast.

Further details regarding the general topography and drainage for each proposed building area are included in Section 4.2.

3.3 Local Geology, Hydrogeology and Groundwater Use

Reference to the Sydney 1:100,000 Geological Sheet indicates the site locality spans the contact between Ashfield Shale and Hawkesbury Sandstone. Ashfield Shale is described as a black to dark grey shale and laminate while Hawkesbury Sandstone is described as medium to coarse grained quartz sandstone, very minor shale and laminate lenses.

A survey of groundwater bores registered with Department of Water and Energy (DWE) indicated that there is one registered bore within a 1 kilometre radius of the site. Bore GW107929 is registered for recreation purposes and is located within the grounds of the retirement village on Mount Pleasant Avenue which is approximately 50m west to northwest and in an inferred upgradient location of the hospital grounds. The work summary sheet for the bore indicated that the bore was installed on the 18 March 2005, is registered for recreational purposes, had a standing water level of 58m below ground surface level with the lithology indicated to be sandstone from 0m to 180m. No other relevant details were supplied.

Based on observations of the surrounding topography, the regional groundwater would be expected to be located at depths greater than 10m.

4 SITE HISTORY AND OBSERVATIONS

Information on the site history was obtained from:

- A historical land title search to review previous landowners and possible past uses of the site;
- Interviews with persons familiar with the site;
- Review of selected aerial photographs;
- Review of records held by Ku-Ring-Gai Council;
- A search of NSW DECC records;
- A search of WorkCover records; and

The site history information is presented in Appendix A and a summary is provided below.

4.1 Summary of Site History

4.1.1 General

Site history information suggests that the site has been used as a hospital since prior to 1951 and possibly as far back as 1903. Various individuals owned the site prior to this time. Title records indicate that Sydney Sanitarium and Benevolent Associate was the registered proprietor for at least a portion of the site since 1903 and later by the Australasian Conference Association Limited (who are the current registered proprietors).

Various alterations have occurred to the hospital buildings over the history of the site. The areas of the proposed buildings have not previously been developed, except more recently for retention basins or car park areas. Further details of each area are provided below.

A search of the NSW DECC Contaminated Land Record website indicated there were no notices issued for the site under the Environmentally Hazardous Chemicals Act (1985) or the Contaminated Land Management Act (1997).

A search of the NSW DECC public register for Licences, Applications and Notices website indicated the site has an EPA license for Hazardous, Industrial or Group A waste generation or storage (73) up to 1001 under section 308 of the Protection of the Environment Operations Act 1997. No breaches or notices have been issued for the site under the license (No. 6546).

Site history information suggested that fuel or chemical storage was unlikely within or in very close proximity to the proposed building sites.

A WorkCover search of the Stored Chemical Information Database (SCID) for licences to keep dangerous goods indicated that a license (No.35/0174068) for the SAN Hospital to store a number of dangerous goods at various locations throughout the SAN Hospital for hospital related activities. The records indicate storage of products such as compressed/liquefied gases, motor spirit, copper based pesticide, organophosphorous pesticide, caustic, hypochlorite, hydrogen peroxide, hydrochloric acid, ethanol, diesel and heating oil. The closest (non-gaseous) storage area to the current study areas is approximately 100m.

The WorkCover search also suggested that the correct decommissioning procedures were not followed for two USTs (20,000L capacity each) located north of the maintenance buildings which were located approximately 125m east and upgradient of the proposed Building 1 and 125m northeast and upgradient of the proposed Building 3. The letter indicated that the petrol tank was removed and the diesel tank was filled with sand/soil, but there was no written history.

The closest storage containers to the proposed Buildings 1 and 3 were the two former USTs (mentioned above, two ASTs (15,000L & 20,000L) containing boiler oil 100m to the east-southeast and a number of gas cylinders approximately 125m to the east and upgradient of Building 1 and 3. The closest storage containers to the proposed Building 2 are a liquid oxygen AST 25m to the west and a UST (12,000L) and generator containing diesel fuel approximately 75m to the south which are both upgradient of Building 2.

4.1.2 Building 1

Aerial photographs and anecdotal evidence indicated that up until the mid 1990s the study area comprised vacant grassed areas and bush land. From the mid 1990s to date the study area was noted as being an asphalt paved carpark which was constructed at the same time of the stores/laundry building to the immediate east. The 1951 to 1986 aerial photographs indicated several structures to the west and southwest of Building 1. Anecdotal evidence suggested that the structures were former sewerage works and incinerator buildings which ceased operations in the 1970s.

4.1.3 Building 2

Aerial photographs indicated that up until the 1960s the study area was vacant rural land with agricultural landuses at the western portion of this area. A dairy was noted to be located west of the proposed Building 2 study area. The 1970 and 1986 aerial photograph indicated the southeast corner of Building 2 was paved carpark until the mid 1980s at which point the Building 2 area became an asphalt paved carpark. Anecdotal evidence suggested the Operating Theatre block (located immediately south of the Building 2 area) was approximately 11 years old and prior to its construction the area was for growing vegetables in gardens. Anecdotal evidence also suggested the SAN Clinic located immediately south of the southeast corner of the Building 2 was originally constructed of concrete, metal sheeting, brick and fibre cemented sheeting which was later removed.

4.1.4 Building 3

The 1951 to 1978 aerial photographs indicated the area was predominantly vacant grassed areas. The 1986 and 1994 aerial photographs indicated the presence of bare soil mounds located within the centre of the Building 3. Anecdotal evidence suggested the soil mounds comprised fill soils sourced offsite and 'cut' soils from other areas within the SAN Hospital grounds, used for the construction of the retention basin. The 2005 aerial photograph shows this area to be landscaped and grass covered. Anecdotal evidence suggested one source of fill material used to create the basin (approximately 40-50%) was from cut earthworks activities at other locations with the SAN Hospital. The main source of fill (approximately 50-60%) used for the basin's construction was from a shopping centre development on Pennant Hills Road located approximately 1km to 1.5km west of the site approximately 10 years ago.

4.1.5 Building 4

The area where Building 4 is located appears to have been occupied by this (or a similar) structure since at least 1951 and likely to have been used as a hospital ward building.

The results of the above mentioned site history searches are included in Appendix A.

4.1.5 Gaps in the Site History

Following the review of the site history information the followings gaps in site history are noted relating to the areas being assessed:

- The activities associated with the incinerator located west of the proposed Building 1 including disposal of incinerator wastes;
- The exact nature of agricultural activities in areas surrounding the hospital;
- The quality of fill soils imported to the site for retention basin construction.

4.2 Site Observations

An environmental scientist and a geotechnical engineer made observations of the general site and study areas at the time of fieldwork on the 10 March 2008 and an Associate Geotechnical Engineer on the 28 March 2008 during a site walkover. The proposed improvement layouts are shown on Figures 3 and 4. Selected site photographs are included in Appendix F.

4.2.1 Building 1

The proposed Building 1 site was located along the western perimeter of the hospital where currently a level asphalt surface car park was situated. The land adjacent to the car park generally slopes downwards to the west, with the car park having been cut into the slope along the eastern boundaries and filled along the western boundaries. The fill was estimated to be 2m high at the north western end of the car park.

To the west of the car park was a well maintained grassed strip of land approximately 20m wide. Further west, the land falls sharply and the vegetation consists of bushes and mature trees.

To the east of the car park the Stores and Business Offices were located approximately 3m to 4m above the ground surface of the car park with garden beds, bushes, trees and maintained grassed areas dividing the two areas. The Stores and Business Office buildings were noted as being constructed of metal sheeting and brick.

A stormwater drain oriented in a north-south direction was noted through the centre of the carpark area as evident by several steel grates and access pits

4.2.2 Building 2

The proposed Building 2 site was located along the central northern perimeter of the hospital where an asphalt surface car park was situated. In this area, the land falls to the north at an angle of 3 to 4 degrees with the car park terraced over 3 levels to accommodate the slope. There was minor cut and fill earthworks estimated at 1m height associated with the terracing. The eastern end of the car park was lower than the western end and has been filled where a former gully was located.

Adjacent to the north west of the car park was a maintained grassed drainage basin. The basin was approximately 2m deep and in the base was a galvanised steel grill probably associated with a drainage system. Beyond the basin the land slopes downwards to the north towards Coups Creek where dense vegetation was present.

Adjacent to the western portion of the carpark an aboveground storage tank containing liquid nitrogen was noted within a steel fence compound. Immediately to the south and southeast, the carpark was bound by the Operating Theatre Block and the SAN clinic. Additional carpark areas and the Fox Valley Centre were located to the east and northeast approximately 1m to 2m above ground surface level of the study area.

The car park terraces were separated by garden beds approximately 1m to 2m in width. The garden beds were noted to be filled with bark chip and leaf litter from the tall trees (approximately 15 to 20m in height) which were generally the only plant species identified in the garden beds

4.2.3 Building 3

The detail and location of proposed Building 3 was not finalised at the time this report was prepared, however we understand it is to be located adjacent and to the south of the proposed Building 5 site. In this area is a maintained grassed drainage basin. The basin is approximately 2m to 3m deep and has a galvanised steel grill and manhole in the base. The southern and western batter faces within the basin are garden beds which have been barked chipped with overgrown shrub and grass plants species noted.

At the western end of the basin was a 6m wide well maintained grassed crest. At the western edge of the grassed crest, a 2m wide strip used for the dumping of grass cuttings was noted. Beyond this, the land falls at an angle of approximately 18 degrees to the west and was vegetated with thick grass. Fragments of broken brick observed on the surface suggest that the basin walls may have been constructed using fill material. To the southwest the land falls at an angle of approximately 18 degrees to the south and was a maintained grass slope. At the base of the slopes are mature trees and bushes

Adjacent to the south of the basin was a car park. The south western end of the car park has been raised approximately 1.5m above the surrounding ground level. To the east of the basin the Staff Amenities Buildings are located, comprising two single storey buildings. An in-ground swimming pool is located to the northeast of the basin.

Approximately 20m to 30m to the south and southeast of the carpark, the surrounding landuse was a childcare centre and residential housing.

4.2.4 Building 4

Observations of the Building 4 were carried out by an Associate Geotechnical Engineer on the 28 March 2008. Building 4 was an existing three storey brick structure located in the eastern area of the hospital. The building is a brick structure used as a hospital ward

The building has a basement along its south eastern side and is inter-connected to new structures along the north western and south western walls. The land surrounding the building generally slopes down to the east.

A stairway leads to the basement from within the building. Within the basement in rooms titled "South Wing Switch Room" and the "Electrical Store Room", brick strip footings supporting a concrete slab associated with the ground floor were visible. The footings were resting on shale which was clearly visible since the basement had been cut into it.

5 POTENTIAL AREAS OF ENVIRONMENTAL CONCERN (AEC) AND CHEMICALS OF CONCERN (COC)

Based on the site history information and site observations potential Areas of Environmental Concern (AEC) and Chemicals of Concern (COCs) were identified. These are summarised in the following table

[illegible]

[illegible]

TABLE 1 SUMMARY OF POTENTIALLY CONTAMINATED ACTIVITIES AND AREAS OF ENVIRONMENTAL CONCERN, LIKELIHOOD OF CONTAMINATION AND CHEMICALS OF CONCERN

Potentially Contaminating Activity	Sub-Compound Description	Potential Area of Contamination Concern	Likelihood of Contamination	Potential Chemicals of Concern
AEC 1 Potential Widespread Various Building Material Demolition & Waste Handling	[illegible]	Building 1 [illegible] Building 2 [illegible] [illegible] [illegible]	[illegible]	[illegible]
AEC 2 Underlying Original Soils	[illegible]	[illegible] [illegible]	Building 1 & 2 [illegible] patients Building 3 [illegible]	[illegible]
AEC 3 Potential Widespread Asbestos Material Stockpiles	[illegible]	Building 3 [illegible]	[illegible]	[illegible]

Notes

[illegible]

[illegible]

6 SAMPLING AND ANALYSIS PLAN

The site sampling and analysis plan was designed to check for soil contamination for proposed building areas 1, 2 and 3.

The proposed developments for Building 4 were indicated to involve the adjustment of internal walls and possible height adjustments to the building. As the development works do not involve disturbance to the subsurface conditions, no sampling was proposed within the Building 4 study area.

A total of 27 sampling locations including 25 boreholes and two surface samples were drilled across the three study areas. Sampling locations are shown in Figures 3 and 4

The majority of the sampling locations for the investigation were pre-positioned for geotechnical purposes and were also used to collect soil samples for environmental purposes. Eight additional locations were used to complement these locations for environmental purposes. At the time of the field work and service location the areas indicated to be the study areas for the proposed Buildings 1, 2 and 3 were identified larger than what is presented in Figures 3 and 4. In total twenty-seven sampling locations were positioned for geotechnical and environmental purposes for Building 1, 2 and 3. Of the twenty-seven locations, seventeen sampling locations were identified to be outside and immediately adjacent to the three study areas, but were within reasonably close proximity to give an indication of the possibility for contamination to exist based on the general broad potential contamination sources.

To assess a site with an area of 1,584m^2 with respect to contamination for Building 1, the NSW EPA (1995) Sampling Design Guidelines recommends seven sampling locations, subject to the results of the site history. This is based on detecting a circular hotspot of approximately 19.9m in diameter with 95% confidence. At the time of the fieldwork seven geotechnical sampling locations were used to assess the potential for contamination to exist at the proposed Building 1 study area.

To assess a site with an area of 3,515m^2 with respect to contamination for Building 2, the NSW EPA (1995) Sampling Design Guidelines recommends eleven sampling locations, subject to the results of the site history. This is based on detecting a circular hotspot of approximately 22.5m in diameter with 95% confidence. At the time of the fieldwork thirteen sampling locations were positioned to assess the potential for contamination to exist at the proposed Building 2 study area.

To assess a site with an area of 980m^2 with respect to contamination for Building 3, the NSW EPA (1995) Sampling Design Guidelines recommends six sampling locations, subject to the results of the site history. This is based on detecting a circular hotspot of approximately 15.2m in diameter with 95% confidence. At the time of the fieldwork seven sampling locations were selected to assess the potential for contamination to exist at the proposed Building 3 study area.

The geotechnical boreholes were spread across each of the study areas in a rough grid based pattern, with the spacing between locations ranging between 10m and 20m. The additional environmental sampling locations were positioned between the geotechnical locations to better assess areas within the proposed Building 1, 2 and 3 footprints.

Samples were generally collected at the depth intervals of 0.0-0.1m, 0.5m, 1.0m and every 1.5m thereafter where deeper fill was encountered. Samples at the base of fill and the underlying natural soils were also collected. A minimum of two samples at each location were selected for analysis with additional samples from deeper fill soil also selected for analysis.

Selected soil samples collected from borehole locations were analysed for a suite of common potential chemicals of concern, as assessed from the site history. Samples for TPH and BTEX analysis were selected based on field screening and field evidence of potential contamination.

A direct assessment of groundwater quality was not carried out, as part of this preliminary investigation

6.1 Quality Assurance/Quality Control

A quality assurance/quality control plan was designed to achieve the predetermined data quality objectives (DQOs) and to demonstrate accuracy, precision, comparability, representativeness and completeness of the data generated and the procedures for assessing the DQOs are met. The results of the laboratory quality control are discussed in Section 9.3.1.

7 ASSESSMENT CRITERIA

7.1 Soil Vapour Criteria

For the purposes of this report the generalised soil vapour criteria presented in Table 3 have been used as a guide to the potential for hydrocarbon contamination. These criteria have been developed by Coffey Environments based on our experience (where monitoring for volatile organic compounds has occurred) to assist in the assessment of hydrocarbon contamination levels in soil. It is important to note that these generalised criteria are only a guide and that the PID has a different response to different chemicals.

Table 3: Generalised Soil Gas Criteria

PID reading as ppm isobutylene	Generalised soil gas content description relating to petroleum hydrocarbon contamination
<20 ppm	NEGLIGIBLE
20 to 60 ppm	LOW
60 – 300 ppm	MODERATE
>300 ppm	SIGNIFICANT

7.2 Soil Investigation Levels (SILs)

In order to assess the degree of contamination in soils on the site, the results of soil analyses were compared with guidelines in the following references:

- NSW Department of Environment and Conservation (2006) Guidelines for the NSW Auditor Scheme (2nd Edit.);
- NSW EPA (1994) Guidelines for Assessing Service Station Sites; and
- NEPC (1999) National Environmental Protection (Assessment of Site Contamination) Measure (NEPM) – Schedule B (1) Guideline on Investigation levels for Soil and Groundwater.

The NSW DEC (2006) Guidelines for the NSW Site Auditor Scheme and the NEPM summarise the National Environmental Health Forum (NEHF) investigation levels for protection of human health for different landuses. The references also provide guidelines for provisional phytotoxicity based investigation levels, (referred to as environmental investigation levels in the NEPM (EILs)) for a range of contaminants in soils.

The NEHF investigation levels are applicable for commercial/industrial landuse. The NEHF-F guidelines have been applied to soil samples collected from the proposed commercial development including the construction of hospital buildings in each of the study areas within the site.

The NSW EPA (1994) guidelines provide acceptable cleanup levels at Service Station Sites which are to be redeveloped for a sensitive use such as residential. The NSW DECC also recommends the use of these guidelines for assessing hydrocarbon contaminants for sites with less sensitive landuses (such as residential). Based on use of the site for commercial purposes, these criteria are used to supplement the NEPM commercial/industrial investigation levels. The NSW DEC (2006) guidelines provide human health criteria for petroleum hydrocarbons based on speciation of aliphatic and aromatic compounds for different landuses.

There are currently no national or NSW guidelines for asbestos in soil. The NSW DECC has advised that asbestos is a human health issue and not an environmental issue. On the advice of the NSW Department of Health, the NSW DECC has advised NSW Site Auditors (Site Auditors Meeting 1 March 2000) that "no asbestos in the soil at the surface is permitted". Enhealth (2005) provides some guidance on assessing and managing asbestos in soil although does not provide a threshold concentration or investigation level for asbestos.

The adopted Soil Investigation Levels (SILs) are summarised in Tables 4, 5 and 6.

7.3 Waste Classification Criteria

In order to assess the waste classification of the site soils on a preliminary level, the results of soil analysis were compared to the NSW DECC (2009) Waste Classification Guidelines.

The guidelines provide threshold values for total concentrations and leachable concentrations based on TCLP test results for a list of about 50 contaminants and groups of contaminants. For a waste to be classified under a given category (i.e. special, liquid, hazardous, restricted solid, general solid (putrescible and non-putrescible), both total and leachable concentrations of the waste should meet the respective threshold concentrations. The waste may be classified solely based on total concentrations (i.e. without undertaking leachability testing), but the applicable threshold concentrations when leachability testing is not undertaken are significantly lower (i.e. more stringent) than would apply when leachability testing is undertaken.

8 FIELD INVESTIGATIONS

Field investigations were carried between the 10 and 25 March 2008 in the full time presence of a geotechnical engineer from the Lane Cove Office who recorded an engineering log of the subsurface conditions observed at each location and collected soil samples.

Twenty-five (25) boreholes, designated CBH1 to CBH25 were drilled using a truck mounted drilling rig equipped with a continuous flight auger, to depths ranging between 1m and 12.30m. The boreholes were drilled in soils using 100mm solid flight augers and a steel V shaped bit (V-bit) or tungsten carbide bit (TC-bit). Standard Penetration Testing was carried out in all boreholes to assess soil strength and to obtain samples for logging and laboratory analysis. Upon encountering rock, diamond coring techniques were used to advance the boreholes and to obtain core for analysis.

Two sampling locations, designated CBH26 and CBH27 were drilled using a hand auger to depths of 0.1m and 0.2m respectively. The sampling locations were placed within garden beds of the Building 2 study area where the drilling could not gain access.

Water level readings were collected from boreholes at times and under conditions stated on the borehole logs. In cored boreholes, water was used as a drilling fluid and groundwater levels could not be monitored. It must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, and other factors.

The approximate locations of the boreholes and surface samples were measured relative to existing site features using a measuring wheel and/or tape and are shown in Figures 3 and 4. Test elevations were measured by staff and dumpy level to a datum of 162.541m AHD located within the hospital grounds. Engineering logs of the boreholes are included in Appendix B with explanatory sheets defining the terms and symbols used.

8.1 Soil Sampling

During drilling, soil samples were generally collected directly off the auger or the hand auger head within the upper 1m thereafter with a Standard Penetration Test (SPT) tube sampler. Between sampling locations the augers and hand auger were washed by brush scrubbing with a phosphate free detergent and finally rinsed with potable water. The SPT tube sampler was also washed with a phosphate free detergent, rinsed with potable water followed by rinsing with distilled water between sampling locations. Soil samples were collected with a new pair of latex gloves between sampling locations.

Soil samples were generally collected within the fill soils and upper residual layers. Samples were also collected where there was visual evidence of potential contamination (if observed) or at major changes in stratigraphy. The soil was placed into clean 250mL glass jars, which were sealed with Teflon lined caps, labelled and placed directly into ice cooled chests.

Soil vapour testing was carried out using a Mini Rae 2000 photoionisation detector (PID) fitted with a 10.6eV lamp and calibrated with isobutylene gas at a concentration of 100ppm. This instrument allows rapid, semi quantitative analysis of ionisable volatile organic compounds in the soil.

Soil samples for chemical analysis were collected in duplicate into tightly sealed plastic bags. The headspace air above each sample was measured with the PID. The results of the soil vapour testing are presented in Appendix C.

8.2 Field Quality Control Procedures

The field quality control was generally in accordance with the quality control plan and consisted of the following:

- Sampling was performed generally in accordance with the procedures outlined in Coffey Environments relevant standard operating procedures, which are based on industry accepted protocols for environmental sampling;
- Calibration of field instruments in accordance with manufacturers instructions;
- Collection and analysis of eight blind coded intra laboratory duplicate soil samples and three inter laboratory duplicate samples, which are summarised in Table 4;
- One rinsate blank sample designated RB102 was collected from the V-bit and solid stem augers and analysed for heavy metals, TPH, BTEX, PAH, OCP and PCB to check sampling equipment had been correctly decontaminated between sampling locations;
- Primary samples were transported in ice-cooled chests to the contract laboratory, MGT Environmental Consulting Pty Ltd (MGT) in Victoria who is NATA accredited for the analysis performed, under chain of custody conditions. A copy of the chain of custody is included in Appendix D;
- Three duplicate samples were selected for analysis at the secondary laboratory. Samples were transported in ice-cooled chests to the contract laboratory, SGS Environmental Pty Ltd (SGS) in Alexandria, New South Wales who is NATA accredited for the analysis performed, under chain of custody conditions. A copy of the chain of custody is included in Appendix D;

Table 4: Summary of Duplicate Soil Samples

Primary Sample ID	Duplicate Soil Sample ID	Duplicate Type		Analysis						
		Intra Laboratory	Inter Laboratory	TPH	BTEX	PAH	OCP	PCB	Heavy Metals	Asbestos
CBH1/0.0-0.1	QC100	✓	-	-	-	-	-	-	✓	-
CBH11/0.2-0.3	QC106	✓	-	-	-	✓	-	-	✓	-
CBH14/0.3-0.5	QC108	✓	-	✓	✓	✓	✓	-	✓	-
CBH14/0.3-0.5	QC109	-	✓	✓	✓	✓	✓	-	✓	-
CBH17/0.2-0.3	QC110	✓	-	-	-	-	-		✓	
CBH17/0.2-0.3	QC111	-	✓	-	-	-	-	-	✓	-
CBH6/0.2-0.3	QC114	✓	-	-	-				✓	-
CBH21/1.0-1.45	QC118	✓	-	✓	✓	✓	-	-	✓	-
CBH21/1.0-1.45	QC119	-	✓	✓	✓	✓	-	-	✓	-
CBH23/0.8-1.0	QC120	✓	-	✓	✓	-	-	-	✓	-
CBH6/0.0-0.1	QC122	✓	-	✓	✓			✓	-	-
Total		8	3	6	6	5	2	1	10	0
Total Primary Samples Analysed				36	38	39	17	11	62	12

8.3 Laboratory Analysis

Samples were selected for analysis mainly based on geological origin/fill type of the material, soil sample depth, site location, PID screening and field observations.

The following is a summary of the primary sample analysis for the proposed Building 1 area:

- 14 samples for heavy metals;
- 7 samples for BTEX and TPH;
- 8 samples for PAH;
- 2 samples for OCPs;
- 2 samples for PCBs;
- 1 samples for asbestos; and
- 1 samples for TCLP Heavy Metals

- 1 samples for TCLP PAH Benzo(a)pyrene

The following is a summary of the primary sample analysis for the proposed Building 2 area:

- 26 samples for heavy metals;
- 15 samples for BTEX and TPH;
- 13 samples for PAH,
- 7 samples for OCPs;
- 1 samples for PCBs;
- 4 samples for asbestos; and
- 2 samples for TCLP Heavy Metals

The following is a summary of the primary sample analysis for the proposed Building 3 area:

- 23 samples for heavy metals;
- 17 samples for BTEX and TPH;
- 20 samples for PAH,
- 5 samples for OCPs;
- 4 samples for PCBs;
- 3 samples for asbestos; and
- 2 samples for TCLP Heavy Metals
- 1 samples for TCLP PAH Benzo(a)pyrene

Original laboratory sheets and analytical procedures are included in Appendix D.

9 RESULTS OF FIELD AND LABORATORY INVESTIGATIONS

9.1 Subsurface Conditions

The generalised subsurface conditions encountered across the site from the boreholes are summarised below:

ASPHALT (Unit 1)	Bitumen and Roadbase materials for boreholes excavated in car parking areas within the proposed Building 1 and 2 footprints. Thickness in proposed Building 1: 0-0.3m encountered at CBH2, CBH6, CBH8, CBH15, CBH19, CBH22 Thickness in proposed Building 2: 0-0.4m encountered at CBH4, CBH5, CBH9, CBH10, CBH12 to CBH14, CBH17 and CBH23 to CBH25.
FILL (Unit 2)	Silty sand, clayey sand, sandy clay and clay, with some sandstone gravel up to cobbles size, concrete rubble, organic fragments and trees roots. Thickness in proposed Building 1: 0-2.5m encountered at CBH11, CBH15, CBH19, CBH22 Thickness in proposed Building 2: 0.15m-3.14m encountered at CBH2, CBH12, CBH13, CBH14, CBH17 and CBH23 to CBH27 Thickness in proposed Building 3: 0-5.85m encountered at CBH1, CBH10, CBH17, CBH16, CBH18, CBH20, CBH21 A sandstone boulder was encountered at 1.0-1.2m for CBH11 within the proposed Building 1 footprint.
RESIDUAL (Unit 3)	Typically • Sandy clay and clay: stiff, low to high plasticity, orange brown, pale grey and red • Silty sand and sand: fine to medium grained, brownish grey Thickness: 0 to 1.2m
SANDSTONE (Unit 4)	Unit 3A typically: • Very low to medium strength, yellow, red, orange, grey, extremely to moderately weathered Thickness: 0 to 3.7m Unit 3B typically: • Medium to high strength, grey, yellow, orange, red and brown, moderately weathered to fresh

Continued

SHALE **(Unit 5)**	Found only beneath Building 4. Very low to medium strength, highly to moderately weathered, grey and orange shale.

Notes:

(1) The unit thickness and base of unit values are based on the boreholes and may not represent the extremes (maximum or minimum) values across the site.

(2) Rock classified in accordance with Pells et al (1998) "Foundations on Sandstone and Shale in the Sydney Region" Aust. Geomech. Jnl, Dec 1998.

Apart from the fill, the subsurface conditions encountered are consistent with the published geological information.

Organic odours were noted at borehole locations CBH1, CBH3 and CBH11. No unusual odours or oily sheens were noted in soils during sampling at remaining locations. A black coloured material was noted at about 4.05m to 4.25m in CBH16 in the Building 3 area. The material did not have an unusual odour.

Groundwater inflows were noted in three boreholes (CBH1, CBH7 and CBH10) surrounding the proposed Building 3 footprint within the fill soils at depths of 3.5m, 1.0m and 5.5m respectively. A groundwater inflow was also noted within the fill soils at CBH28 at a depth of 1.5m which was located within the proposed Building 1 footprint. These groundwater inflows are considered to represent 'perched' groundwater located within the clayey fill and unlikely to represent local groundwater.

Within the cored boreholes, water was used as a drilling fluid which prevented groundwater observations. No groundwater was encountered during drilling or within the period they were open.

It should be noted that groundwater levels are subject to variation due to the influence of rainfall, temperature, local drainage and the seasons. There may also be the potential for development of perched groundwater tables following periods of rainfall.

9.2 Soil Vapour

Results of the soil gas headspace measurements are presented in Appendix C.

Soil samples tested recorded negligible to low readings ranging from 0 to 34.5ppm. The sample PID results were generally consistent with field observations and the laboratory-tested soil samples.

9.3 Soil Contamination

9.3.1 Quality Assurance/Quality Control

A data validation report for each batch of samples were prepared by Colley Environments as part of the quality assurance programme and are included in Appendix E. Following review of laboratory reports, the following comments can be made:

- A laboratory prepared trip spike was not taken into the field for this round of fieldwork. An assessment of potential loss of volatiles through this method cannot be made. This is not considered significant as soils screened in the field with a PID indicated a low likelihood for volatile contamination to exist on the site.

- Several BTEX surrogates recorded recoveries ranging between 50% and 58% for the soil samples CBH4/0.05-0.2m, CBH7/1.0-1.3m, CBH7/2.8-2.9m, CBH8/0.4-0.5m, CBH11/0.9-1.05m, CBH18/0.3-0.5m and CBH21/1.0-1.45m, which is below the lower control limit of 60%. This result may indicate that lower concentrations of BTEX may have been recorded than what was actually present for these samples. This result is not considered significant as screening results and observations suggested that volatile contaminants were unlikely to be present.
- Several laboratory spikes for PAHs and a PAH surrogate recorded recoveries above the upper control limit of 115% for the sample CBH21/0.4-0.5m. These results may indicate that some concentrations of PAHs for this sample may have been reported higher than what were actually present.
- RPDs ranging between 55% and 108% above the control limit of 50%, were recorded for the copper, mercury, nickel, zinc and the PAH Phenanthrene for the soil duplicate pairs CBH1/0.0-0.1m and QC100; CBH11/0.2-0.3m and QC106; CBH17/0.2-0.3m and QC110; CBH17/0.2-0.3m and QC111; CBH21/1.0-1.45m and QC119; and CBH21/1.0-1.45m and QC119. These results are considered to be attributed to the heterogeneous nature of the contaminant distribution throughout the soil/fill matrix.
- Several inconsistencies were noted between the duplicate pairs CBH1/0.0-0.1m and QC100; CBH2/0.15-0.25m and QC102; CBH17/0.2-0.3m and QC111; CBH6/0.2-0.3m and QC114; CBH21/1.0-1.45m and QC118 and QC119, for arsenic, copper, lead, nickel, zinc. These results are not considered significant as concentrations of the primary and duplicates samples were close to the LOR.

Apart from the above, the QA/QC was considered generally appropriate for the purposes of this assessment.

Data Quality Indicators (DQI) (completeness, comparability, representativeness, precision and accuracy) for both field and laboratory procedures have been checked. Based on the assessment it is considered that the data collected for this assessment is adequate and meets the objectives of the QA/QC plan

9.3.2 Comparison of Results to Soil Investigation Levels

The laboratory test results for soil samples collected within or immediately adjacent to the proposed development areas of Buildings 1, 2 and 3 are summarised in Tables 5, 6 and 7 respectively.

Concentration of the COCs tested were generally low and below the adopted SILs and/or below the laboratory reporting limits.

For the proposed Building 1 study area concentrations of PAHs, arsenic, chromium, copper, lead, nickel and zinc were generally low and below the adopted SILs. Concentrations of TPH, BTEX, OCP, PCB, cadmium, mercury and asbestos were below the laboratory limits of reporting (LOR).

For the proposed Building 2 study area concentrations of TPH C_{10}-C_{36}, PAHs, arsenic, chromium, copper, lead, nickel and zinc were generally low and below the adopted SILs. Concentrations of BTEX, OCP, PCB, cadmium, mercury and asbestos were below the laboratory LOR.

For the proposed Building 3 study area concentrations of PAHs, arsenic, chromium, copper, lead, nickel and zinc were generally low and below the adopted SILs. Concentrations of TPH, BTEX, OCP, PCB, cadmium, mercury and asbestos were below the laboratory limits LOR

9.3.3 Comparison of Results to Waste Classification Guidelines

The laboratory test results were compared to waste classification criteria. Results for Buildings 1, 2 and 3 are summarised in Tables 8, 9 and 10, respectively.

The laboratory results were compared to the guidelines presented in the NSW DECC (2008) Waste Classification Guidelines. Based on this assessment the soils for the proposed Buildings 1, 2 and 3 were assessed to classify as General Solid Waste for landfill disposal.

10 DISCUSSION

10.1 Building 1

Fieldwork results indicated that this area had fill soils ranging in depth between 0.2m to 2.5m (generally increasing in depth from east to west). The fill soils were typically clayey sands and sandy clays. Some brick and terracotta pieces were noted in CBH15 at a depth of about 2m. The soils are likely to be natural site soils from cut and fill activities (although this cannot be confirmed). No obvious evidence of contamination was noted. Sixteen (16) samples selected for analysis from the fill soils at various depth intervals did not indicate concentrations of the potential COCs tested above the adopted SILs.

10.2 Building 2

Fieldwork results indicated that this area had fill soils ranging in depth between 0.2m to 3.2m (generally increasing in depth from south-west to north-east). The fill soils were typically clayey sands and clay. No obvious evidence of contamination was noted. Thirty three (33) samples selected for analysis from the fill soils at various depth intervals did not indicate concentrations of the potential COCs tested above the adopted SILs.

10.3 Building 3

Fieldwork results indicated that this area had fill soils ranging in depth between 2.7m to 6.9m (generally increasing in depth from north-east to south-west). The fill soils were typically clayey sands, clays and sandy clays. A black coloured material was noted at about 4.05m to 4.25m in CBH16 in the Building 3 area. The material did not have an unusual odour and was insufficient for a sample. Apart from this no obvious evidence of contamination was noted. Twenty seven (27) samples selected for analysis from the fill soils at various depth intervals did not indicate concentrations of the potential COCs tested above the adopted SILs.

10.4 Building 4

The site history and site observations made as part of this assessment did not indicate obvious potential sources of contamination. The results from other areas would suggest that the likelihood for this area to be affected by contamination is low.

Groundwater quality at the site was not directly assessed as part of this study. It would generally appear that the likelihood for groundwater contamination to be present at the proposed building areas that would adversely affect the proposed development form a contamination perspective is low. Some USTs exist on the site further upslope of the areas being assessed which could act potential contamination sources to groundwater. Their distance and previous usage would suggest that if contamination occurred, the likelihood of it impacting these areas is likely to be relatively low.

11 CONCLUSIONS

The results of the site history study indicated that the site has been used for hospital related purposes since at least 1951 and possibly since 1903. The proposed building areas have generally been undeveloped with part of Building 2 possibly having been used for some agricultural use and Buildings 1 and 3 recording some filling. Building 3 received larger quantities of fill to raise levels and create a retention pond. Generally the likelihood for the areas assessed to be affected by contamination was assessed to be low.

Field investigations confirmed the presence of fill soils in the three study areas ranging between 0.2m and 6.9m in depth. Building area 3 recorded the deeper fill profile with shallower fill at proposed Building areas 1 and 2. No obvious evidence of contamination was noted and samples selected for analysis for a suite of potential COCs did not record concentrations exceeding the adopted SILs for a commercial landuse.

A direct assessment of the groundwater quality was not made as part of this study. Based on the soil laboratory results, the anticipated depth to groundwater and lack of nearby contamination sources, the likelihood of groundwater contamination adversely affecting the proposed development is considered low.

Based on the results of this study it is considered that the potential for the areas assessed to be affected by land contamination that would adversely affect the proposed development is low and therefore the areas are considered suitable for proposed commercial use.

A preliminary assessment of the fill soils waste classification was made as part of this study. Based on the results the fill soils are likely to classify as general solid waste for offsite disposal to a licensed facility. Natural soils underlying the fill are likely to classify as Virgin Excavated Natural Material (VENM), subject to the soils not being mixed with other fill soils or wastes.

12 LIMITATIONS

The findings contained in this report are the result of discrete/specific methodologies used in accordance with normal practices and standards. To the best of our knowledge, they represent a reasonable interpretation of the general condition of the site at the time the investigations were carried out.

Under no circumstances, however, can it be considered that these findings represent the actual state of the site at all points. Should any site conditions be encountered during construction that vary significantly from those discussed in this report, Colley Environments should be advised and appropriate action taken.

This report does not provide geotechnical information or information about hazardous building materials in site structures.

13 REFERENCES

1. EnHealth Council (2005), *Management of Asbestos in the Non-Occupational Environment*
2. NEPC (1999), *National Environment Protection (Assessment of Site Contamination) Measure*
3. NSW EPA (1994), *Guidelines for Assessing Service Station Sites*
4. NSW EPA (1995), *Sampling Design Guidelines*
5. NSW EPA (1997), Guidelines for Consultants Reporting on Contaminated Sites
6. NSW DEC (2006), Guidelines for the NSW Auditor Scheme 2nd Ed.
7. NSW DECC (2008), Waste Classification Guidelines

coffey environments

Important information about your **Coffey** Environmental Report

Uncertainties as to what lies below the ground on potentially contaminated sites can lead to remediation costs blow outs, reduction in the value of the land and to delays in the redevelopment of land. These uncertainties are an inherent part of dealing with land contamination. The following notes have been prepared by Coffey to help you interpret and understand the limitations of your report.

Your report has been written for a specific purpose

Your report has been developed on the basis of a specific proposal as understood by Coffey and applies only to the site or area investigated. For example, the purpose of your report may be:

- To assess the environmental effects of an ongoing operation
- To provide due diligence on behalf of a property vendor
- To provide due diligence on behalf of a property purchaser
- To provide information related to redevelopment of the site due to a proposed change in use, for example, industrial use to a residential use
- To assess the existing, baseline environmental and sometimes geological and hydrological conditions or constraints of a site prior to an activity which may alter the sites environmental, geological or hydrological condition

For each purpose, a specific approach to the assessment of potential soil and groundwater contamination is required. In most cases, a key objective is to identify and if possible, quantify risks that both recognised and unrecognised contamination pose to the proposed activity. Such risks may be both financial (for example clean up costs or limitations to the site use) and physical (for example potential health risks to users of the site or the general public).

Scope of Investigations

The work was conducted, and the report has been prepared, in response to specific instructions from the client to whom this report is addressed, within practical time and budgetary constraints, and in reliance on certain data and information made available to Coffey. The analyses, evaluations, opinions and conclusions presented in this report are based on those instructions, requirements, data or information, and they could change if such instructions etc. are in fact inaccurate or incomplete.

Subsurface conditions can change

Subsurface conditions are created by natural processes and the activity of mankind and may change with time. For example, groundwater levels can vary with time. fill may be placed on a site and pollutants may migrate with time. Because a report is based on conditions which existed at the time of the subsurface exploration, decisions should not be based on a report whose adequacy may have been affected by time. Consult Coffey to be advised how time may have impacted on the project and/or on the property.

Interpretation of factual data

Environmental site assessments identify actual subsurface conditions only at those points at which samples are taken and when they are taken. Data obtained from indirect field measurements and samples, other reports on the site and interpreted by geotechnical engineers or scientists, to provide an opinion about overall site conditions, their likely interpretation in relation to the report purpose and recommendations based thereon. Actual conditions may differ from those inferred to exist, because no professional, no matter how diligent or qualified, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of such conditions. For this reason, parties involved in property acquisition, management and/or redevelopment should retain the services of Coffey through the development and use of the site to identify variances, conduct additional tests if required, and recommend solutions to unexpected conditions or other problems encountered on site.

coffey environments

SITES, ACCESS, LIVING AND WORKING PLACES

Important information about your **Coffey** Environmental Report

Your report will only give preliminary recommendations

Your report is based on the assumption that the site conditions as revealed through selective point sampling are indicative of actual conditions throughout an area. This assumption cannot be substantiated until project implementation has commenced and therefore your report recommendations can only be regarded as preliminary. Only Coffey, who prepared the report, is fully familiar with the background information needed to assess whether or not the report's recommendations are valid and whether or not changes should be considered with redevelopment or on-going use of the site. If another party undertakes the implementation of the recommendations of this report there is a risk that the report will be misinterpreted and Coffey cannot be held responsible for such misinterpretation.

Your report is prepared for specific purposes and persons

To avoid misuse of the information contained in your report it is recommended that you confer with Coffey before passing your report on to another party who may not be familiar with the background and the purpose of the report. In particular, a due diligence report for a property vendor may not be suitable for satisfying the needs of a purchaser. Your report should not be applied for any purpose other than that originally specified at the time the report was issued.

Interpretation by other professionals

Costly problems can occur when other professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations retain Coffey to work with other professionals who are affected by the report. Have Coffey explain the report implications to professionals affected by them and then review plans and specifications produced to see how they have incorporated the report findings.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, laboratory data, drawings etc. are customarily included in our reports and are developed by scientists, engineers or geologists based on their interpretation of field logs (assembled by field personnel), field testing and laboratory evaluation of field samples. This information should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

Contact Coffey for additional assistance

Coffey is familiar with a variety of techniques and approaches that can be used to help reduce risks for all parties to land development and land use. It is common that not all approaches will be necessarily dealt with in your environmental site assessment report due to concepts proposed at that time. As a project progresses through planning and design toward construction and/or maintenance, speak with Coffey to develop alternative approaches to problems that may be of genuine benefit both in time and cost.

Responsibility

Environmental reporting relies on interpretation of factual information based on judgement and opinion and has a level of uncertainty attached to it, which is far less exact than other design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. To help prevent this problem, a number of clauses have been developed for use in contracts, reports and other documents. Responsibility clauses do not transfer appropriate liabilities from Coffey to other parties but are included to identify where Coffey's responsibilities begin and end. Their use is intended to help all parties involved to recognise their individual responsibilities. Read all documents from Coffey closely and do not hesitate to ask any questions you may have.

Tables

CONTAMINATION ASSESSMENT - SAN Hospital
185 Fox Valley Road, Wahroonga

TABLE [illegible]

SUMMARY OF [illegible] FOSSIL FUEL SAMPLE FROM [illegible]

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TABLE 1b:

SUMMARY OF GENERATION RESULTS ON SOIL SUBJECT TO IRON-INDUCED BUILDING

[illegible]

(Results in mg/g)

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TABLE [illegible] CONTINUED

SUMMARY OF LABORATORY RESULTS FOR SOIL SAMPLES FROM PROPOSED BUILDINGS

Heavy Metals, TPH, BTEX, PAH, [illegible], PCB and Solvents

(All results in mg/kg)

[illegible]

TABLE 7:

[illegible]

[illegible]

A [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TABLE 27 (CONTINUED)

[illegible]

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TABLE 8:

SUMMARY OF LABORATORY RESULTS FOR PRELIMINARY WASTE CLASSIFICATION - BUILDING 1

TPH, BTEX, PAH and Heavy Metals

(All results in mg/kg, except TCLP concentrations in mg/L)

Sample ID	THRESHOLD CONCENTRATIONS		CBH2	CBH6	CBH6	CBH8	CBH8	CBH11	CBH11	CBH11	CBH15	CBH15	CBH19	CBH19	CBH22	CBH22	CBH22	CBH22
Material			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date of Sampling			10-Mar-08	12-Mar-08	12-Mar-08	13-Mar-08	13-Mar-08	14-Mar-08	14-Mar-08	14-Mar-08	18-Mar-08	18-Mar-08	20-Mar-08	20-Mar-08	25-Mar-08	25-Mar-08	25-Mar-08	25-Mar-08
Depth (m)			0.15-0.25	0.2-0.3	0.4-0.5	0.15-0.30	0.4-0.5	0.0-0.2	0.2-0.3	0.90-1.05	0.3-0.5	1.00-1.45	0.3-0.5	1.10-1.45	0.2-0.3	0.4-0.5	1.00-1.35	2.0-2.2
	GENERAL SOLID WASTE	RESTRICTED SOLID WASTE																
HEAVY METALS (Total)																		
Arsenic	500 [1]	2000 [4]	5.8	2.7	3.8	2.4	< 2	4.3	5.6	3.8	< 2	< 2	2.5	< 2	< 2	-	-	< 2
Cadmium	100 [1]	400 [4]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	< 0.5
Chromium	1900 [1]	7600 [4]	14	88	16	27	10	14	16	42	12	7.4	16	9	11	-	-	22
Lead	1500 [1]	6000 [4]	16	< 5	9.2	6	< 5	70	75	10	13	7.6	13	8.1	14	-	-	< 5
Nickel	1050 [1]	4200 [4]	< 5	67	< 5	25	< 5	< 5	< 5	< 5	< 5	< 5	6.3	< 5	5	-	-	< 5
Mercury	50 [1]	200 [4]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1
HEAVY METALS TCLP																		
Arsenic	5.0 [2]	20 [5]	-	-	-	-	-	-	< 0.01	-	-	-	-	-	-	-	-	-
Cadmium	1.0 [2]	4 [5]	-	-	-	-	-	-	< 0.01	-	-	-	-	-	-	-	-	-
Chromium	5 [2]	20 [5]	-	-	-	-	-	-	< 0.01	-	-	-	-	-	-	-	-	-
Lead	5 [2]	20.0 [5]	-	-	-	-	-	-	0.01	-	-	-	-	-	-	-	-	-
Nickel	2 [2]	8 [5]	-	-	-	-	-	-	< 0.01	-	-	-	-	-	-	-	-	-
Mercury	0.2 [2]	0.8 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL PETROLEUM HYDROCARBONS																		
C6 - C9 Fraction	650 [1]	2600 [4]	< 20	-	< 20	-	< 20	-	-	< 20	< 20			< 20	-	< 20	-	-
C10 - C14 Fraction			< 50	-	< 50	-	< 50	-	-	< 50	< 50	-	-	< 50	-	< 50	-	-
C15 - C28 Fraction			< 100	-	< 100	-	< 100	-	-	< 100	< 100	-	-	< 100	-	< 100	-	-
C29 - C36 Fraction			< 100	-	< 100	-	< 100	-	-	< 100	< 100	-	-	< 100	-	< 100	-	-
Total C10-C36	10000 [1]	40000 [4]	ND	-	ND	-	ND	-	-	ND	ND	-	-	ND	-	ND	-	-
BTEX																		
Benzene	10 [3]	40 [6]	< 0.05	-	< 0.05	-	< 0.1	-	-	< 0.1	< 0.05	-	-	< 0.05	-	< 0.05	-	-
Toluene	288 [3]	1152 [6]	< 0.05	-	< 0.05	-	< 0.1	-	-	< 0.1	< 0.05	-	-	< 0.05	-	< 0.05	-	-
Ethylbenzene	600 [3]	2400 [6]	< 0.05	-	< 0.05	-	< 0.1	-	-	< 0.1	< 0.05	-	-	< 0.05	-	< 0.05	-	-
Total Xylene	1000 [3]	4000 [6]	< 0.05	-	< 0.05	-	< 0.1	-	-	< 0.1	< 0.05	-	-	< 0.05	-	< 0.05	-	-
POLYCYCLIC AROMATIC HYDROCARBONS																		
Benzo(a)pyrene	10 [1]	23 [4]	-	< 0.1	0.3	< 0.1	< 0.1	-	0.4	-	-	< 0.1	< 0.1	-	-	-	< 0.1	-
Total PAH*	200 [1]	800 [4]	-	ND	3.9	0.3	ND	-	7.9	-	-	ND	ND	-	-	-	ND	-
PAH TCLP																		
Benzo(a)pyrene	0.04 [2]	0.16 [5]	-	-	-	-	-	-	< 0.001	-	-	-	-	-	-	-	-	-
Total PAH*																		
OCP			-	-	-	-	ND	-	-	-	-	-	-	-	ND	-	-	-
PCB	<50 [1]	<50 [4]	-	-	-	-	-	-	-	-	-	ND	-	-	ND	-	-	-
Asbestos			-	-	-	-	-	-	-	-	-	-	ND	-	-	-	-	-

NOTES:

Bold	Concentration exceed the respective General Solid Waste Criteria
Bold	Concentration exceed the respective Restricted Solid Waste Criteria

Based on NSW DEC (2004) Environmental Guidelines Assessment, Classification & Management of Liquid and Non-Liquid Wastes.

[1] Specific Contaminant Concentration (SCC1) for General Solid Waste

[2] Leachable Concentration (TCLP1) for General Solid Waste

[3] Contamination Threshold Value (CT1) for General Solid Waste

[4] Specific Contaminant Concentration (SCC2) for Restricted Solid Waste

[5] Leachable Concentration (TCLP2) for Restricted Solid Waste

[6] Contamination Threshold Value (CT2) for Restricted Solid Waste

ND Not Detected

\- Not Tested

* Total PAHs is the sum of detectable concentrations of individual PAH compounds

See original laboratory reports for detection limits

TABLE 9 (Continued):

SUMMARY OF LABORATORY RESULTS FOR PRELIMINARY WASTE CLASSIFICATION - BUILDING 2

TPH, BTEX, PAH and Heavy Metals

(All results in mg/kg, except TCLP concentrations in mg/L)

Sample ID	THRESHOLD CONCENTRATIONS		CBH14	CBH14	CBH14	CBH17	CBH17	CBH17	CBH23	CBH23	CBH24	CBH24	CBH25	CBH25	CBH26	CBH27
Material			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date of Sampling			17-Mar-08	17-Mar-08	17-Mar-08	19-Mar-08	19-Mar-08	19-Mar-08	26-Mar-08	26-Mar-08	26-Mar-08	26-Mar-08	26-Mar-08	26-Mar-08	26-Mar-08	26-Mar-08
Depth (m)			0.3-0.5	1.00-1.45	2.50-2.65	0.2-0.3	0.4-0.5	2.70-2.95	0.3-0.4	0.8-1.0	0.4-0.5	0.8-1.0	0.3-0.4	0.7-0.8	0.0-0.1	0.1-0.2
	GENERAL SOLID WASTE	RESTRICTED SOLID WASTE														
HEAVY METALS (Total)																
Arsenic	500 [1]	2000 [4]	-	3.5	2.8	< 2	-	< 2	< 2	3.4	7.3	< 2	< 2	2	3.3	2.2
Cadmium	100 [1]	400 [4]	-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	1900 [1]	7600 [4]	-	19	19	40	-	17	51	11	21	< 5	46	23	22	16
Lead	1500 [1]	6000 [4]	-	19	14	7.8	-	6.4	< 5	< 5	11	14	13	11	55	55
Nickel	1050 [1]	4200 [4]	-	< 5	< 5	36	-	< 5	42	< 5	5.1	< 5	32	< 5	7	7.9
Mercury	50 [1]	200 [4]	-	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
HEAVY METALS TCLP																
Arsenic	5.0 [2]	20 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	1.0 [2]	4 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	5 [2]	20 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	5 [2]	20.0 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	2 [2]	8 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.2 [2]	0.8 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL PETROLEUM HYDROCARBONS																
C6 - C9 Fraction	650 [1]	2600 [4]	< 20	-	-		< 20		-	< 20	< 20	-	-	< 20	< 20	< 20
C10 - C14 Fraction			< 50	-	-	-	< 50	-	-	< 50	< 50	-	-	< 50	< 50	< 50
C15 - C28 Fraction			< 100	-	-	-	< 100	-	-	< 100	< 100	-	-	< 100	< 100	< 100
C29 - C36 Fraction			< 100	-	-	-	< 100	-	-	< 100	< 100	-	-	< 100	< 100	110
Total C10-C36	10000 [1]	40000 [4]	ND	-	-	-	ND	-	-	ND	ND	-	-	ND	ND	110
BTEX																
Benzene	10 [3]	40 [6]	< 0.05	-	-	-	< 0.05	-	-	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05
Toluene	288 [3]	1152 [6]	< 0.05	-	-	-	< 0.05	-	-	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05
Ethylbenzene	600 [3]	2400 [6]	< 0.05	-	-	-	< 0.05	-	-	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05
Total Xylene	1000 [3]	4000 [6]	< 0.05	-	-	-	< 0.05	-	-	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05
POLYCYCLIC AROMATIC HYDROCARBONS																
Benzo(a)pyrene	10 [1]	23 [4]	-	< 0.1	-	-	-	< 0.1	< 0.1	-	-	< 0.1	< 0.1	-	< 0.1	< 0.1
Total PAH*	200 [1]	800 [4]	-	ND	-	-	-	ND	ND	-	-	ND	ND	-	0.7	0.1
PAH TCLP																
Benzo(a)pyrene	0.04 [2]	0.16 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PAH*																
OCP			-	-	-	-	-	-	-	-	-	-	-	-	ND	ND
PCB	<50 [1]	<50 [4]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos			-	ND	-	ND	-	-	-	-	-	-	-	-	-	-

NOTES:

Bold	Concentration exceed the respective General Solid Waste Criteria
Bold	Concentration exceed the respective Restricted Solid Waste Criteria

Based on NSW DEC (2004) Environmental Guidelines Assessment, Classification & Management of Liquid and Non-Liquid Wastes.

[1] Specific Contaminant Concentration (SCC1) for General Solid Waste

[2] Leachable Concentration (TCLP1) for General Solid Waste

[3] Contamination Threshold Value (CT1) for General Solid Waste

[4] Specific Contaminant Concentration (SCC2) for Restricted Solid Waste

[5] Leachable Concentration (TCLP2) for Restricted Solid Waste

[6] Contamination Threshold Value (CT2) for Restricted Solid Waste

ND Not Detected

- Not Tested

* Total PAHs is the sum of detectable concentrations of individual PAH compounds

See original laboratory reports for detection limits

TABLE 8:

SUMMARY OF LABORATORY RESULTS FOR PRELIMINARY WASTE CLASSIFICATION - BUILDING 1

TPH, BTEX, PAH and Heavy Metals

(All results in mg/kg, except TCLP concentrations in mg/L)

Sample ID	THRESHOLD CONCENTRATIONS		CBH2	CBH6	CBH6	CBH8	CBH8	CBH11	CBH11	CBH11	CBH15	CBH15	CBH19	CBH19	CBH22	CBH22	CBH22	CBH22
Material			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date of Sampling			10-Mar-08	12-Mar-08	12-Mar-08	13-Mar-08	13-Mar-08	14-Mar-08	14-Mar-08	14-Mar-08	18-Mar-08	18-Mar-08	20-Mar-08	20-Mar-08	25-Mar-08	25-Mar-08	25-Mar-08	25-Mar-08
Depth (m)			0.15-0.25	0.2-0.3	0.4-0.5	0.15-0.30	0.4-0.5	0.0-0.2	0.2-0.3	0.90-1.05	0.3-0.5	1.00-1.45	0.3-0.5	1.10-1.45	0.2-0.3	0.4-0.5	1.00-1.35	2.0-2.2
	GENERAL SOLID WASTE	RESTRICTED SOLID WASTE																
HEAVY METALS (Total)																		
Arsenic	500 [1]	2000 [4]	5.8	2.7	3.8	2.4	< 2	4.3	5.6	3.8	< 2	< 2	2.5	< 2	< 2	-	-	< 2
Cadmium	100 [1]	400 [4]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	< 0.5
Chromium	1900 [1]	7600 [4]	14	88	16	27	10	14	16	42	12	7.4	16	9	11	-	-	22
Lead	1500 [1]	6000 [4]	16	< 5	9.2	6	< 5	70	75	10	13	7.6	13	8.1	14	-	-	< 5
Nickel	1050 [1]	4200 [4]	< 5	67	< 5	25	< 5	< 5	< 5	< 5	< 5	< 5	6.3	< 5	5	-	-	< 5
Mercury	50 [1]	200 [4]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	< 0.1
HEAVY METALS TCLP																		
Arsenic	5.0 [2]	20 [5]	-	-	-	-	-	-	< 0.01	-	-	-	-	-	-	-	-	-
Cadmium	1.0 [2]	4 [5]	-	-	-	-	-	-	< 0.01	-	-	-	-	-	-	-	-	-
Chromium	5 [2]	20 [5]	-	-	-	-	-	-	< 0.01	-	-	-	-	-	-	-	-	-
Lead	5 [2]	20.0 [5]	-	-	-	-	-	-	0.01	-	-	-	-	-	-	-	-	-
Nickel	2 [2]	8 [5]	-	-	-	-	-	-	< 0.01	-	-	-	-	-	-	-	-	-
Mercury	0.2 [2]	0.8 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL PETROLEUM HYDROCARBONS																		
C6 - C9 Fraction	650 [1]	2600 [4]	< 20	-	< 20	-	< 20	-	-	< 20	< 20			< 20	-	< 20	-	-
C10 - C14 Fraction			< 50	-	< 50	-	< 50	-	-	< 50	< 50	-	-	< 50	-	< 50	-	-
C15 - C28 Fraction			< 100	-	< 100	-	< 100	-	-	< 100	< 100	-	-	< 100	-	< 100	-	-
C29 - C36 Fraction			< 100	-	< 100	-	< 100	-	-	< 100	< 100	-	-	< 100	-	< 100	-	-
Total C10-C36	10000 [1]	40000 [4]	ND	-	ND	-	ND	-	-	ND	ND	-	-	ND	-	ND	-	-
BTEX																		
Benzene	10 [3]	40 [6]	< 0.05	-	< 0.05	-	< 0.1	-	-	< 0.1	< 0.05	-	-	< 0.05	-	< 0.05	-	-
Toluene	288 [3]	1152 [6]	< 0.05	-	< 0.05	-	< 0.1	-	-	< 0.1	< 0.05	-	-	< 0.05	-	< 0.05	-	-
Ethylbenzene	600 [3]	2400 [6]	< 0.05	-	< 0.05	-	< 0.1	-	-	< 0.1	< 0.05	-	-	< 0.05	-	< 0.05	-	-
Total Xylene	1000 [3]	4000 [6]	< 0.05	-	< 0.05	-	< 0.1	-	-	< 0.1	< 0.05	-	-	< 0.05	-	< 0.05	-	-
POLYCYCLIC AROMATIC HYDROCARBONS																		
Benzo(a)pyrene	10 [1]	23 [4]	-	< 0.1	0.3	< 0.1	< 0.1	-	0.4	-	-	< 0.1	< 0.1	-	-	-	< 0.1	-
Total PAH*	200 [1]	800 [4]	-	ND	3.9	0.3	ND	-	7.9	-	-	ND	ND	-	-	-	ND	-
PAH TCLP																		
Benzo(a)pyrene	0.04 [2]	0.16 [5]	-	-	-	-	-	-	< 0.001	-	-	-	-	-	-	-	-	-
Total PAH*																		
OCP			-	-	-	-	ND	-	-	-	-	-	-	-	ND	-	-	-
PCB	<50 [1]	<50 [4]	-	-	-	-	-	-	-	-	-	ND	-	-	ND	-	-	-
Asbestos			-	-	-	-	-	-	-	-	-	-	ND	-	-	-	-	-

NOTES:

Bold Concentration exceed the respective General Solid Waste Criteria

Bold Concentration exceed the respective Restricted Solid Waste Criteria

Based on NSW DEC (2004) Environmental Guidelines Assessment, Classification & Management of Liquid and Non-Liquid Wastes.

[1] Specific Contaminant Concentration (SCC1) for General Solid Waste

[2] Leachable Concentration (TCLP1) for General Solid Waste

[3] Contamination Threshold Value (CT1) for General Solid Waste

[4] Specific Contaminant Concentration (SCC2) for Restricted Solid Waste

[5] Leachable Concentration (TCLP2) for Restricted Solid Waste

[6] Contamination Threshold Value (CT2) for Restricted Solid Waste

ND Not Detected

\- Not Tested

* Total PAHs is the sum of detectable concentrations of individual PAH compounds

See original laboratory reports for detection limits

TABLE 9:

SUMMARY OF LABORATORY RESULTS FOR PRELIMINARY WASTE CLASSIFICATION - BUILDING 2

TPH, BTEX, PAH and Heavy Metals

(All results in mg/kg, except TCLP concentrations in mg/L)

Sample ID	THRESHOLD CONCENTRATIONS		CBH4	CBH4	CBH4	CBH5	CBH5	CBH5	CBH9	CBH9	CBH9	CBH10	CBH10	CBH10	CBH12	CBH12	CBH12	CBH12	CBH13	CBH13	CBH13
Material			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date of Sampling			11-Mar-08	11-Mar-08	11-Mar-08	11-Mar-08	11-Mar-08	11-Mar-08	13-Mar-08	13-Mar-08	13-Mar-08	14-Mar-08	14-Mar-08	14-Mar-08	17-Mar-08	17-Mar-08	17-Mar-08	17-Mar-08	17-Mar-08	17-Aug-08	17-Mar-08
Depth (m)			0.05-0.20	0.3-0.5	0.7-1.0	0.05-0.25	0.3-0.4	0.4-0.5	0.0-0.2	0.3-0.4	0.4-0.5	0.25-0.30	0.3-0.5	0.7-0.9	0.3-0.5	1.00-1.25	1.25-1.45	2.5-2.9	0.3-0.5	0.7-1.0	1.00-1.06
	GENERAL SOLID WASTE	RESTRICTED SOLID WASTE																			
HEAVY METALS (Total)																					
Arsenic	500 [1]	2000 [4]	5.9	11	-	3	2.6	7.2	2.8	-	5	10	8.7	-	4.8	-	10	< 2	2.6	-	2.1
Cadmium	100 [1]	400 [4]	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	< 0.5	-	< 0.5
Chromium	1900 [1]	7600 [4]	33	29	-	95	22	28	91	-	30	32	27	-	14	-	20	14	21	-	19
Lead	1500 [1]	6000 [4]	13	15	-	< 5	17	11	< 5	-	< 5	14	17	-	15	-	120	9.4	14	-	13
Nickel	1050 [1]	4200 [4]	16	< 5	-	71	9.8	8.3	79	-	< 5	14	9.5	-	< 5	-	< 5	< 5	< 5	-	< 5
Mercury	50 [1]	200 [4]	0.1	< 0.1	-	< 0.1	<0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1	-	< 0.1	-	< 0.1	< 0.1	< 0.1	-	< 0.1
HEAVY METALS TCLP																					
Arsenic	5.0 [2]	20 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.01	-	-	-	-
Cadmium	1.0 [2]	4 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.01	-	-	-	-
Chromium	5 [2]	20 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.01	-	-	-	-
Lead	5 [2]	20.0 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-
Nickel	2 [2]	8 [5]	-	-	-	-	-	-	0.04	-	-	-	-	-	-	-	< 0.01	-	-	-	-
Mercury	0.2 [2]	0.8 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL PETROLEUM HYDROCARBONS																					
C6 - C9 Fraction	650 [1]	2600 [4]	< 20	-	< 20	< 20	< 20	-	-	-	< 20	-	-	< 20	-	< 20	-	-	< 20	-	-
C10 - C14 Fraction			< 50	-	< 50	< 50	< 50	-	-	-	< 50	-	-	< 50	-	< 50	-	-	< 50	-	-
C15 - C28 Fraction			< 100	-	< 100	< 100	< 100	-	-	-	< 100	-	-	< 100	-	< 100	-	-	< 100	-	-
C29 - C36 Fraction			< 100	-	< 100	< 100	< 100	-	-	-	< 100	-	-	< 100	-	< 100	-	-	< 100	-	-
Total C10-C36	10000 [1]	40000 [4]	ND	-	ND	ND	ND	-	-	-	ND	-	-	ND	-	ND	-	-	ND	-	-
BTEX																					
Benzene	10 [3]	40 [6]	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	< 0.1	-	-	< 0.1	-	< 0.05	-	-	< 0.05	-	-
Toluene	288 [3]	1152 [6]	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	< 0.1	-	-	< 0.1	-	< 0.05	-	-	< 0.05	-	-
Ethylbenzene	600 [3]	2400 [6]	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	< 0.1	-	-	< 0.1	-	< 0.05	-	-	< 0.05	-	-
Total Xylene	1000 [3]	4000 [6]	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	< 0.1	-	-	< 0.1	-	< 0.05	-	-	< 0.05	-	-
POLYCYCLIC AROMATIC HYDROCARBONS																					
Benzo(a)pyrene	10 [1]	23 [4]	< 0.1	-	-	< 0.1	-	-	< 0.1	-	-	-	< 0.1	-	-	-	< 0.1	-	< 0.1	-	-
Total PAH*	200 [1]	800 [4]	ND	-	-	0.4	-	-	0.6	-	-	-	0.6	-	-	-	ND	-	ND	-	-
PAH TCLP																					
Benzo(a)pyrene	0.04 [2]	0.16 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PAH*																					
OCP			-	-	-	-	ND	-	-	ND	-	-	ND	-	-	-	-	ND	ND	-	-
PCB	<50 [1]	<50 [4]	-	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos			-	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	-

NOTES:

Bold	Concentration exceed the respective General Solid Waste Criteria
Bold	Concentration exceed the respective Restricted Solid Waste Criteria

Based on NSW DEC (2004) Environmental Guidelines Assessment, Classification & Management of Liquid and Non-Liquid Wastes.

[1] Specific Contaminant Concentration (SCC1) for General Solid Waste

[2] Leachable Concentration (TCLP1) for General Solid Waste

[3] Contamination Threshold Value (CT1) for General Solid Waste

[4] Specific Contaminant Concentration (SCC2) for Restricted Solid Waste

[5] Leachable Concentration (TCLP2) for Restricted Solid Waste

[6] Contamination Threshold Value (CT2) for Restricted Solid Waste

ND Not Detected

\- Not Tested

* Total PAHs is the sum of detectable concentrations of individual PAH compounds

See original laboratory reports for detection limits

TABLE 9 (Continued):

SUMMARY OF LABORATORY RESULTS FOR PRELIMINARY WASTE CLASSIFICATION - BUILDING 2

TPH, BTEX, PAH and Heavy Metals

(All results in mg/kg, except TCLP concentrations in mg/L)

Sample ID	THRESHOLD CONCENTRATIONS		CBH14	CBH14	CBH14	CBH17	CBH17	CBH17	CBH23	CBH23	CBH24	CBH24	CBH25	CBH25	CBH26	CBH27
Material			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date of Sampling			17-Mar-08	17-Mar-08	17-Mar-08	19-Mar-08	19-Mar-08	19-Mar-08	26-Mar-08	26-Mar-08	26-Mar-08	26-Mar-08	26-Mar-08	26-Mar-08	26-Mar-08	26-Mar-08
Depth (m)			0.3-0.5	1.00-1.45	2.50-2.65	0.2-0.3	0.4-0.5	2.70-2.95	0.3-0.4	0.8-1.0	0.4-0.5	0.8-1.0	0.3-0.4	0.7-0.8	0.0-0.1	0.1-0.2
	GENERAL SOLID WASTE	RESTRICTED SOLID WASTE														
HEAVY METALS (Total)																
Arsenic	500 [1]	2000 [4]	-	3.5	2.8	< 2	-	< 2	< 2	3.4	7.3	< 2	< 2	2	3.3	2.2
Cadmium	100 [1]	400 [4]	-	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	1900 [1]	7600 [4]	-	19	19	40	-	17	51	11	21	< 5	46	23	22	16
Lead	1500 [1]	6000 [4]	-	19	14	7.8	-	6.4	< 5	< 5	11	14	13	11	55	55
Nickel	1050 [1]	4200 [4]	-	< 5	< 5	36	-	< 5	42	< 5	5.1	< 5	32	< 5	7	7.9
Mercury	50 [1]	200 [4]	-	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
HEAVY METALS TCLP																
Arsenic	5.0 [2]	20 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	1.0 [2]	4 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	5 [2]	20 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	5 [2]	20.0 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	2 [2]	8 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.2 [2]	0.8 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL PETROLEUM HYDROCARBONS																
C6 - C9 Fraction	650 [1]	2600 [4]	< 20	-	-		< 20		-	< 20	< 20	-	-	< 20	< 20	< 20
C10 - C14 Fraction			< 50	-	-	-	< 50	-	-	< 50	< 50	-	-	< 50	< 50	< 50
C15 - C28 Fraction			< 100	-	-	-	< 100	-	-	< 100	< 100	-	-	< 100	< 100	< 100
C29 - C36 Fraction			< 100	-	-	-	< 100	-	-	< 100	< 100	-	-	< 100	< 100	110
Total C10-C36	10000 [1]	40000 [4]	ND	-	-	-	ND	-	-	ND	ND	-	-	ND	ND	110
BTEX																
Benzene	10 [3]	40 [6]	< 0.05	-	-	-	< 0.05	-	-	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05
Toluene	288 [3]	1152 [6]	< 0.05	-	-	-	< 0.05	-	-	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05
Ethylbenzene	600 [3]	2400 [6]	< 0.05	-	-	-	< 0.05	-	-	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05
Total Xylene	1000 [3]	4000 [6]	< 0.05	-	-	-	< 0.05	-	-	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05
POLYCYCLIC AROMATIC HYDROCARBONS																
Benzo(a)pyrene	10 [1]	23 [4]	-	< 0.1	-	-	-	< 0.1	< 0.1	-	-	< 0.1	< 0.1	-	< 0.1	< 0.1
Total PAH*	200 [1]	800 [4]	-	ND	-	-	-	ND	ND	-	-	ND	ND	-	0.7	0.1
PAH TCLP																
Benzo(a)pyrene	0.04 [2]	0.16 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PAH*																
OCP			-	-	-	-	-	-	-	-	-	-	-	-	ND	ND
PCB	<50 [1]	<50 [4]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos			-	ND	-	ND	-	-	-	-	-	-	-	-	-	-

NOTES:

Bold	Concentration exceed the respective General Solid Waste Criteria
Bold	Concentration exceed the respective Restricted Solid Waste Criteria

Based on NSW DEC (2004) Environmental Guidelines Assessment, Classification & Management of Liquid and Non-Liquid Wastes.

[1] Specific Contaminant Concentration (SCC1) for General Solid Waste

[2] Leachable Concentration (TCLP1) for General Solid Waste

[3] Contamination Threshold Value (CT1) for General Solid Waste

[4] Specific Contaminant Concentration (SCC2) for Restricted Solid Waste

[5] Leachable Concentration (TCLP2) for Restricted Solid Waste

[6] Contamination Threshold Value (CT2) for Restricted Solid Waste

ND Not Detected

\- Not Tested

* Total PAHs is the sum of detectable concentrations of individual PAH compounds

See original laboratory reports for detection limits

TABLE 10:

SUMMARY OF LABORATORY RESULTS FOR PRELIMINARY WASTE CLASSIFICATION - BUILDING 3

TPH, BTEX, PAH and Heavy Metals

(All results in mg/kg, except TCLP concentrations in mg/L)

Sample ID	THRESHOLD CONCENTRATIONS		CBH1	CBH1	CBH1	CBH3	CBH3	CBH3	CBH7	CBH7	CBH7	CBH16	CBH16	CBH16	CBH16	CBH18	CBH18	CBH18	CBH18	CBH18	CBH18
Material			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date of Sampling			10-Mar-08	10-Mar-08	10-Mar-08	10-Mar-08	10-Mar-08	10-Mar-08	12-Mar-08	12-Mar-08	12-Mar-08	19-Mar-08	19-Mar-08	19-Mar-08	19-Mar-08	19-Mar-08	19-Mar-08	19-Mar-08	19-Mar-08	20-Mar-08	20-Mar-08
Depth (m)			0.0-0.1	1.2-1.45	2.65-2.95	0.00-0.15	2.65-2.90	5.7-5.95	0.00-0.15	1.0-1.3	2.8-2.9	0.1-0.2	1.15-1.30	2.60-2.75	4.25-4.39	0.3-0.5	1.2-1.3	1.30-1.45	2.60-2.95	4.10-4.45	5.60-5.95
	GENERAL SOLID WASTE	RESTRICTED SOLID WASTE																			
HEAVY METALS (Total)																					
Arsenic	500 [1]	2000 [4]	< 2	-	< 2	6.4	-	< 2	22	3.2	5.7	2.4	2.4	2.3	2.9	< 2	-	< 2	-	2.7	< 2
Cadmium	100 [1]	400 [4]	< 0.5	-	< 0.5	< 0.5	-	< 0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5
Chromium	1900 [1]	7600 [4]	20	-	5.9	25	-	25	26	7.8	120	20	21	22	19	20	-	25	-	13	12
Lead	1500 [1]	6000 [4]	21	-	11	280	-	17	12	18	< 5	29	17	17	22	32	-	16	-	27	21
Nickel	1050 [1]	4200 [4]	11	-	< 5	51	-	< 5	11	< 5	< 5	8.3	8.2	< 5	< 5	9.9	-	20	-	5.7	< 5
Mercury	50 [1]	200 [4]	< 0.1	-	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	-	< 0.1	< 0.1
HEAVY METALS TCLP																					
Arsenic	5.0 [2]	20 [5]	-	-	-	< 0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	1.0 [2]	4 [5]	-	-	-	< 0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	5 [2]	20 [5]	-	-	-	< 0.01	-	-	-	-	0.03	-	-	-	-	-	-	-	-	-	-
Lead	5 [2]	20.0 [5]	-	-	-	< 0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	2 [2]	8 [5]	-	-	-	< 0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	0.2 [2]	0.8 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL PETROLEUM HYDROCARBONS																					
C6 - C9 Fraction	650 [1]	2600 [4]	-	-	< 20	-	-	< 20	-	< 20	< 20	< 20	< 20	< 20	< 20	< 20			< 20		< 20
C10 - C14 Fraction			-	-	< 50	-	-	< 50	-	< 50	< 50	< 50	< 50	< 50	< 50	< 50	-	-	< 50	-	< 50
C15 - C28 Fraction			-	-	< 100	-	-	< 100	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	-	-	< 100	-	< 100
C29 - C36 Fraction			-	-	< 100	-	-	< 100	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	-	-	< 100	-	< 100
Total C10-C36	10000 [1]	40000 [4]	-	-	ND	-	-	ND	-	ND	ND	ND	ND	ND	ND	ND	-	-	ND	-	ND
BTEX																					
Benzene	10 [3]	40 [6]	-	-	< 0.05	-	-	< 0.05	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	-	< 0.05
Toluene	288 [3]	1152 [6]	-	-	< 0.05	-	-	< 0.05	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	-	< 0.05
Ethylbenzene	600 [3]	2400 [6]	-	-	< 0.05	-	-	< 0.05	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	-	< 0.05
Total Xylene	1000 [3]	4000 [6]	-	-	< 0.05	-	-	< 0.05	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	-	< 0.05
POLYCYCLIC AROMATIC HYDROCARBONS																					
Benzo(a)pyrene	10 [1]	23 [4]	-	< 0.1	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 0.1	-	< 0.1	< 0.1
Total PAH*	200 [1]	800 [4]	-	ND	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6	-	ND	-	ND	ND
PAH TCLP																					
Benzo(a)pyrene	0.04 [2]	0.16 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PAH*																					
OCP			ND	-	-	-	-	-	ND	ND	ND	ND	-	-	ND	-	-	-	-	-	-
PCB	<50 [1]	<50 [4]	ND	-	-	-	-	-	-	ND	ND	ND	-	-	-	-	-	-	-	-	-
Asbestos			-	-	-	-	-	-	-	-	-	ND	-	-	-	-	ND	-	-	-	-

NOTES:

Bold Concentration exceed the respective General Solid Waste Criteria

Bold Concentration exceed the respective Restricted Solid Waste Criteria

Based on NSW DEC (2004) Environmental Guidelines Assessment, Classification & Management of Liquid and Non-Liquid Wastes.

[1] Specific Contaminant Concentration (SCC1) for General Solid Waste

[2] Leachable Concentration (TCLP1) for General Solid Waste

[3] Contamination Threshold Value (CT1) for General Solid Waste

[4] Specific Contaminant Concentration (SCC2) for Restricted Solid Waste

[5] Leachable Concentration (TCLP2) for Restricted Solid Waste

[6] Contamination Threshold Value (CT2) for Restricted Solid Waste

ND Not Detected

\- Not Tested

* Total PAHs is the sum of detectable concentrations of individual PAH compounds

See original laboratory reports for detection limits

TABLE 10 (Continued):

SUMMARY OF LABORATORY RESULTS FOR PRELIMINARY WASTE CLASSIFICATION - BUILDING 3

TPH, BTEX, PAH and Heavy Metals

(All results in mg/kg, except TCLP concentrations in mg/L)

Sample ID	THRESHOLD CONCENTRATIONS		CBH20	CBH20	CBH20	CBH20	CBH21	CBH21	CBH21	CBH21
Material			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date of Sampling			20-Mar-08	20-Mar-08	25-Mar-08	25-Mar-08	25-Mar-08	25-Mar-08	8-Mar-08	8-Mar-08
Depth (m)			0.3-0.5	2.60-2.95	4.1-4.45	6.74-6.80	0.4-0.5	1.00-1.45	2.70-2.95	4.10-4.45
	GENERAL SOLID WASTE	RESTRICTED SOLID WASTE								
HEAVY METALS (Total)										
Arsenic	500 [1]	2000 [4]	3.2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Cadmium	100 [1]	400 [4]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	1900 [1]	7600 [4]	15	20	18	16	9.2	16	21	6.1
Lead	1500 [1]	6000 [4]	44	24	21	9.4	16	20	26	58
Nickel	1050 [1]	4200 [4]	6.2	15	8.3	< 5	< 5	5.1	13	< 5
Mercury	50 [1]	200 [4]	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
HEAVY METALS TCLP										
Arsenic	5.0 [2]	20 [5]	-	-	-	-	-	-	-	-
Cadmium	1.0 [2]	4 [5]	-	-	-	-	-	-	-	-
Chromium	5 [2]	20 [5]	-	-	-	-	-	-	-	-
Lead	5 [2]	20.0 [5]	-	-	-	-	-	-	-	-
Nickel	2 [2]	8 [5]	-	-	-	-	-	-	-	-
Mercury	0.2 [2]	0.8 [5]	-	-	-	-	-	-	-	-
TOTAL PETROLEUM HYDROCARBONS										
C6 - C9 Fraction	650 [1]	2600 [4]		< 20	< 20	< 20	< 20	< 20	< 20	-
C10 - C14 Fraction			-	< 50	< 50	< 50	< 50	< 50	< 50	-
C15 - C28 Fraction			-	< 100	< 100	< 100	< 100	< 100	< 100	-
C29 - C36 Fraction			-	< 100	< 100	< 100	< 100	< 100	< 100	-
Total C10-C36	10000 [1]	40000 [4]		ND	ND	ND	ND	ND	ND	-
BTEX										
Benzene	10 [3]	40 [6]	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-
Toluene	288 [3]	1152 [6]	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-
Ethylbenzene	600 [3]	2400 [6]	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-
Total Xylene	1000 [3]	4000 [6]	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-
POLYCYCLIC AROMATIC HYDROCARBONS										
Benzo(a)pyrene	10 [1]	23 [4]	0.2	< 0.1	< 0.1	-	0.2	< 0.1	< 0.1	-
Total PAH*	200 [1]	800 [4]	1.2	ND	ND	-	1.7	ND	ND	-
PAH TCLP										
Benzo(a)pyrene	0.04 [2]	0.16 [5]	-	-	-	-	< 0.001	-	-	-
Total PAH*										
OCP			-	-	-	-	-	-	-	-
PCB	<50 [1]	<50 [4]	-	-	-	-	-	-	-	-
Asbestos			-	ND	-	-	-	-	-	-

NOTES:

Bold	Concentration exceed the respective General Solid Waste Criteria
Bold	Concentration exceed the respective Restricted Solid Waste Criteria

Based on NSW DEC (2004) Environmental Guidelines Assessment, Classification & Management of Liquid and Non-Liquid Wastes.

[1] Specific Contaminant Concentration (SCC1) for General Solid Waste

[2] Leachable Concentration (TCLP1) for General Solid Waste

[3] Contamination Threshold Value (CT1) for General Solid Waste

[4] Specific Contaminant Concentration (SCC2) for Restricted Solid Waste

[5] Leachable Concentration (TCLP2) for Restricted Solid Waste

[6] Contamination Threshold Value (CT2) for Restricted Solid Waste

ND Not Detected

\- Not Tested

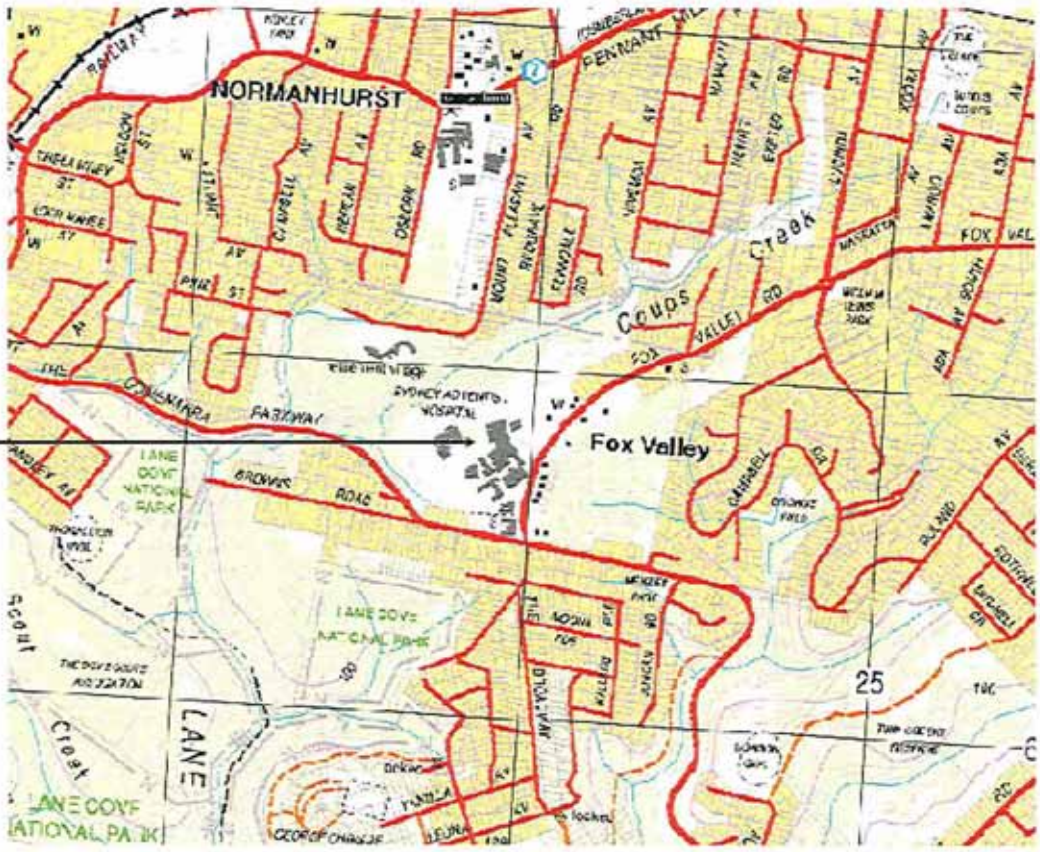
* Total PAHs is the sum of detectable concentrations of individual PAH compounds

See original laboratory reports for detection limits

Figures

CONTAMINATION ASSESSMENT - SAN Hospital
185 Fox Valley Road, Wahroonga

(A)



SITE

N

Approx Scale 1:17354 1km

(B)

SITE

Approx Scale 1:7427 200m

Reference:

Department of Lands - Spatial Information Exchange

(A) Hornsby 1:25,000 Topographic Map 91304S
(B) Sydney-Newcastle Aerial Photo 2008

drawn	DJD	coffey environments SPECIALISTS IN LIVING AND WORKING PLACES	client:	TAYLOR THOMSON WHITTING
approved	JMF		project:	CONTAMINATION ASSESSMENT - SAN HOSPITAL 185 FOX VALLEY ROAD WAHROONGA, NSW
date	30/5/08		title:	SITE LOCALITY PLAN
scale	AS SHOWN		project no: GEOTLCOV23462AA-AG	figure no: 1
original size	A3			

Native Bushland

Retirement Village

Fox Valley Centre

Native Bushland

Car Parking

Residential

BUILDING 2 - SAN CLINIC

Car Parking

Church

Native Bushland

SAN Clinic

DETAIL FIGURE 3

Operating Theatre Block

Tennis Court

Residential

BUILDING 1

Car Parking

Main Building

Maintenance Building

BUILDING 4

BUILDING 3

FOX VALLEY ROAD

DETAIL FIGURE 2

Native Bushland

Medical Centre

Proposed College of Nursing

Residential

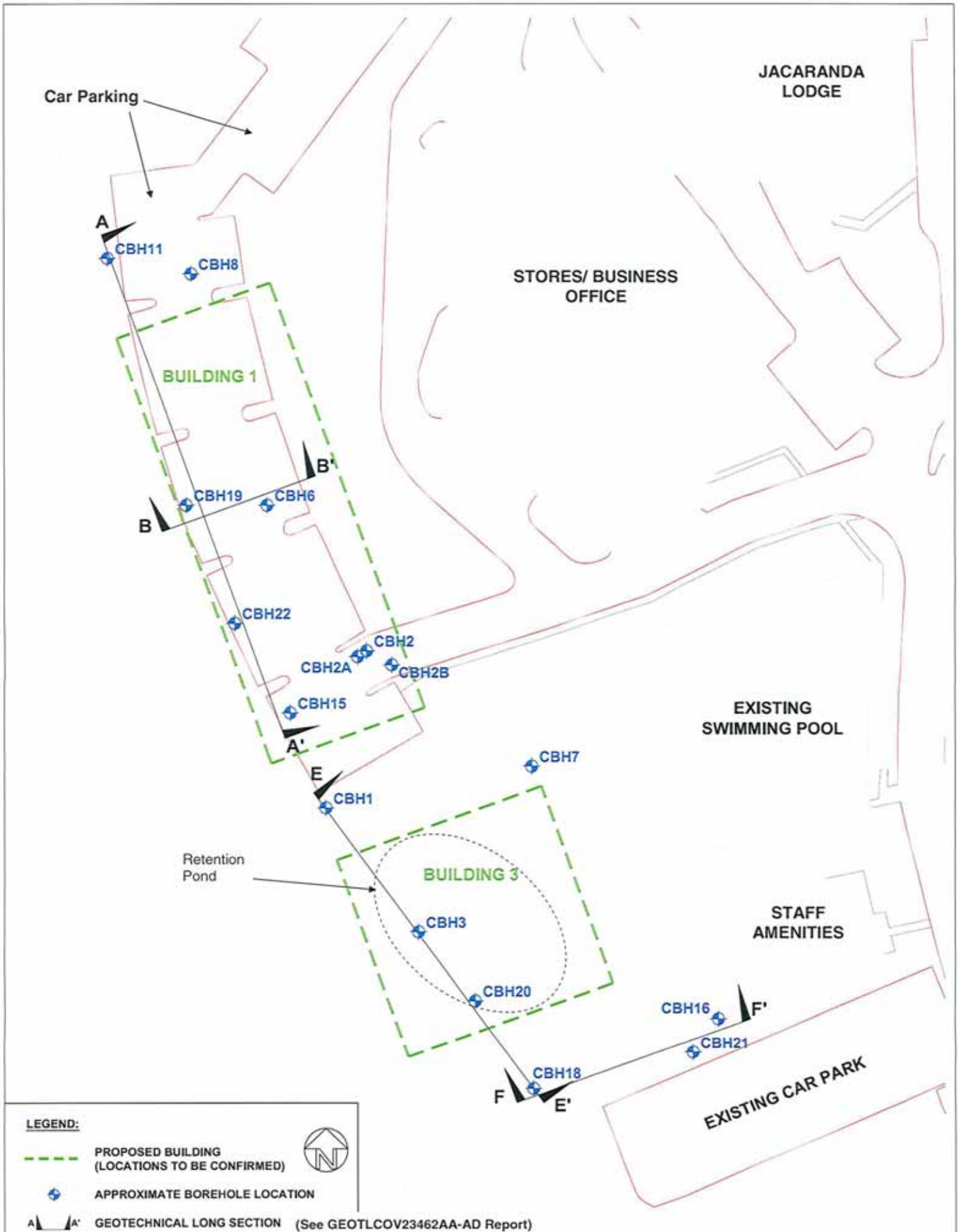
THE COMENARRA PARKWAY

LEGEND:

PROPOSED BUILDING (LOCATIONS TO BE CONFIRMED)

EXISTING BUILDING

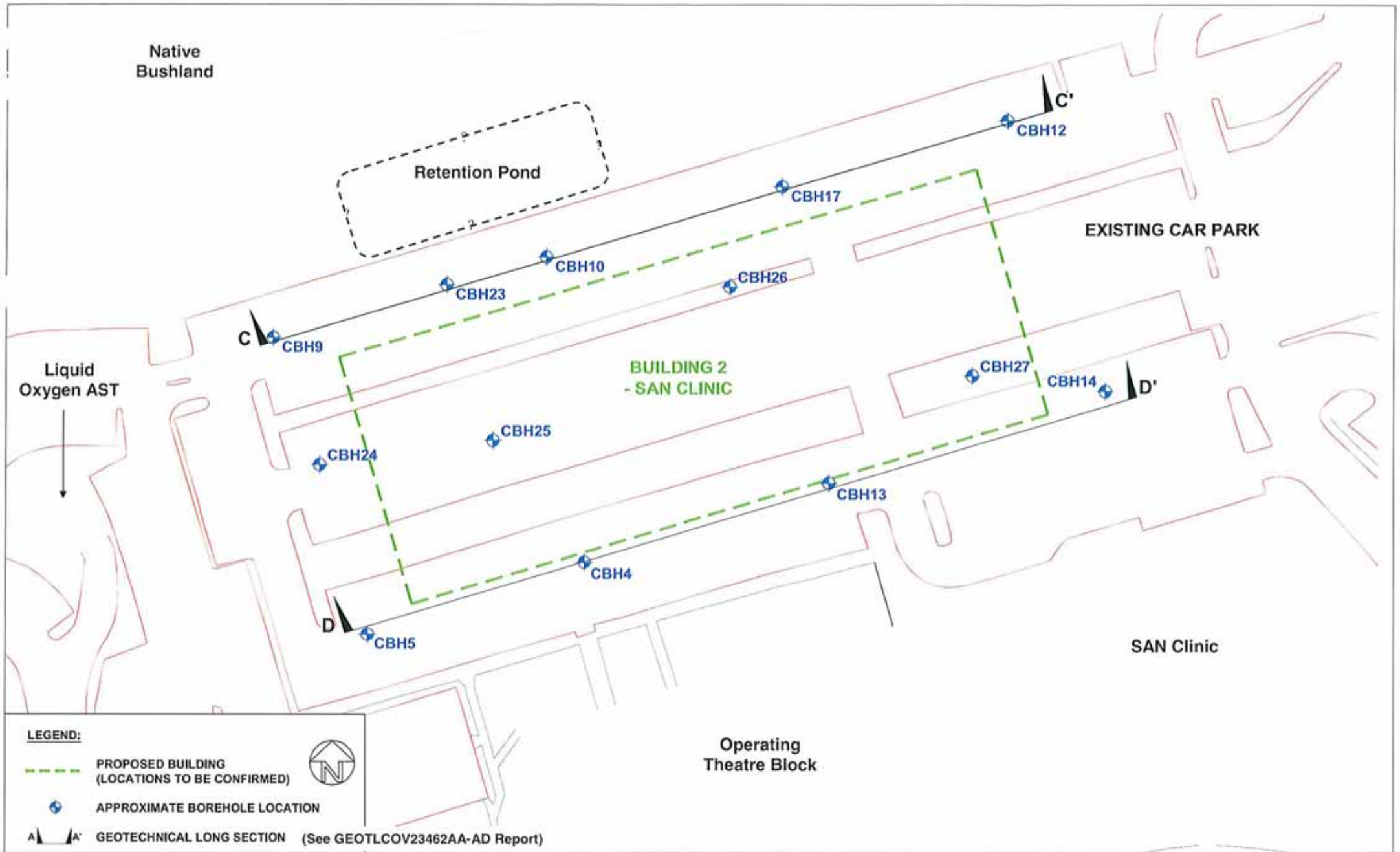
drawn	SH/LT/DJD	coffey environments SPECIALISTS IN LIVING AND WORKING PLACES	client:	TAYLOR THOMSON WHITTING
approved	JMF		project:	CONTAMINATION ASSESSMENT - SAN HOSPITAL 185 FOX VALLEY ROAD WAHROONGA, NSW
date	30/5/08		title:	SITE LAYOUT PLAN
scale	1:2000		project no: GEOTLCOV23462AA-AG	figure no: 2
original size	A3			



LEGEND:

- PROPOSED BUILDING (LOCATIONS TO BE CONFIRMED)
- APPROXIMATE BOREHOLE LOCATION
- A A' GEOTECHNICAL LONG SECTION (See GEOTLCOV23462AA-AD Report)

drawn	DJD	coffey environments SPECIALISTS IN LIVING AND WORKING PLACES	client:	TAYLOR THOMSON WHITTING
approved	JMF		project:	CONTAMINATION ASSESSMENT - SAN HOSPITAL 185 FOX VALLEY ROAD WAHROONGA, NSW
date	30/5/08		title:	PLAN OF PROPOSED BUILDING 1 & 3 SHOWING BOREHOLE LOCATIONS
scale	1:500		project no: GEOTLCOV23462AA-AG	figure no: 3
original size	A3			



revision	description	drawn	approved	date

0 5 10 20 30
Horizontal Scale (metres)

drawn	SH/LT/DJD
approved	JMF
date	30/5/08
scale	1:500
original size	A3

coffey environments
SPECIALISTS IN LIVING AND WORKING PLACES

client: TAYLOR THOMSON WHITTING

project: CONTAMINATION ASSESSMENT - SAN HOSPITAL
185 FOX VALLEY ROAD
WAHROONGA, NSW

title: DETAILED PLAN OF PROPOSED BUILDING 2SHOWING BOREHOLE LOCATIONS

project no: GEOTLCOV23462AA-AG figure no: 4

Appendix A
Site History and Groundwater Bore Search Results

CONTAMINATION ASSESSMENT - SAN Hospital
185 Fox Valley Road, Wahroonga

A1 LAND TITLE SEARCH

A search through land titles dating back to 1870 was carried out by Advance Legal Search Pty Ltd at the Lands Title Office, for Lot 62 DP1017514 within which the proposed Buildings 1 to 3 are located.

The title records indicate that between 1870 and 1903, the registered proprietors included individuals with occupations of business manager, physician, minister of gospel, architect, widow, grantee and esquire.

From 1903 to 1918, the Sydney Sanitarium and Benevolent Associate Limited were the registered proprietors for several portions of the site. From 1918 to date, the registered proprietors for the majority of the site were the Australian Conference Centre Limited.

It is noted that from 1918 to 1935, one portion of the site was under the ownership of an esquire. From 1935 to 1941 the registered proprietor for this portion of the site was the Perpetual Trustee Company (Limited) before falling under the ownership of the Australian Conference Associate Limited to date.

A2 AERIAL PHOTOGRAPH REVIEW

Aerial photographs dating back to 1951 were purchased by Coffey Environments from the Department of Lands and reviewed on the 13 March 2008. Table A1 summarises the observations made.

TABLE A1 – AERIAL PHOTOGRAPH REVIEW

DATE	OBSERVATIONS
May 1951 (black & white)	The site is bound to the south and east by Fox Valley Road and Cumenarra Parkway which are visible. The hospital grounds are surrounded by trees and bush to the west and north where a gully is noted. Trees/bushes are located on the eastern side of Fox Valley Road. Residential developments are noted to the south and northeast of the hospital grounds. The hospital grounds of the site are indicated by vacant grassed areas and a number of buildings in the central eastern portions of the site. There are also a number of vacant areas that are roughly rectangular in shape of different colours possibly cultivated areas. *Proposed Building 1* - The area appears to be generally vacant with sparse trees noted. A circular shaped structure appears to be located near the south western portion of this area with a large square shaped area noted immediately to the east. *Proposed Building 2* - The area appears to be vacant grassed areas with two rectangular structures located on the southwest corner. One large building structure is also noted near the southeastern corner of the area. *Proposed Building 3* - The area appears to be vacant grassed areas with some large trees noted. A roughly circular shaped vacant area appears to be present in a position similar to that of the current retention basin. There is a house structure located immediately east of the area.

TABLE A1 – AERIAL PHOTOGRAPH REVIEW (CONTINUED)

DATE	OBSERVATIONS
1961 (black & white)	The area of the hospital grounds where the sites are located and surrounding properties appear relatively unchanged from the previous aerial photograph except for some minor changes in some of the hospital buildings. The roughly rectangular vacant areas identified in the previous photo appear to be cultivated garden beds *Proposed Building 1* - The area appears relatively unchanged since the previous aerial photo except for the circular shaped object which is now roughly square in shape. There also appears to be a few trees missing. *Proposed Building 2* - The area appears to be relatively unchanged since the previous aerial photo except for the cultivated garden beds which are more evident on the south western corner of the area *Proposed Building 3* - The area appears to have fewer trees than the previous aerial photograph and the roughly circular vacant area is not as evident
07/07/1970 (black & white)	The area of the hospital grounds where the sites are located and surrounding properties appear relatively unchanged from the previous aerial photograph except for some minor changes in some of the hospital buildings. *Proposed Building 1* - The area appears relatively unchanged since the previous aerial photo except for the circular shaped object which is appears to have a number of smaller structures surrounding it. A number of rectangular shaped vacant areas of different colour appear to be present in the northern portions of this area. The roughly square shaped vacant area east of this area appears to be tennis courts. *Proposed Building 2* - The area appears to be relatively unchanged since the previous aerial photo except for the car parking areas near the southeast portions of the area. *Proposed Building 3* - The area appears to be vacant and grassed

TABLE A1 – AERIAL PHOTOGRAPH REVIEW (CONTINUED)

DATE	OBSERVATIONS
29/03/1978 (black & white)	The area of the hospital grounds where the sites are located and surrounding properties appear relatively unchanged from the previous aerial photograph except for some changes in some of the hospital buildings and paved access pathways through the hospital grounds. *Proposed Building 1* - The area appears relatively unchanged since the previous aerial photo except for an access pathway of bare soils now present in this area orientated north south. The previously identified circular shaped structures (i.e. incinerators) no longer appear to be present. *Proposed Building 2* - The area appears to be relatively unchanged since the previous aerial photograph except for the building (i.e. SAN Clinic) noted immediately adjacent to the southeast corner of the study area. Parking spaces are noted within the south eastern portions of the study area. The cultivated garden beds and a rectangular structure in the western portions of the study area appear to be present. *Proposed Building 3* - The area appears to be vacant and grassed with what appears to be a rectangular shaped structure which appears to be a swimming pool to the east.
03/08/1986 (colour)	The area of the hospital grounds where the sites are located and surrounding properties appear relatively unchanged from the previous aerial photograph except for some minor changes in some of the hospital buildings. *Proposed Building 1* - The area appears relatively unchanged since the previous aerial photo except for the access pathway of bare soils which is no longer present. Areas within the building footprint appear to be vacant and grassed except for the rectangular garden beds and a rectangular shaped structure which are present in the northern parts of the study area. *Proposed Building 2* - The area appears to be relatively unchanged since the previous aerial photo. *Proposed Building 3* - The area appears to be vacant and grassed with sparse trees and what appears to be a mound of bare soils (i.e. the sediment retention basin).

TABLE A1 – AERIAL PHOTOGRAPH REVIEW (CONTINUED)

DATE	OBSERVATIONS
10/10/1994 (colour)	The area of the hospital grounds where the sites are located and surrounding properties appear relatively unchanged from the previous aerial photograph except for some changes in some of the hospital buildings. *Proposed Building 1* - the study area is occupied by parking spaces and paved access pathways similar to that currently on site. The tennis courts located immediately east of the study area are now located southwest of the of proposed building 2 study area (i.e. adjacent to the operating theatre block) *Proposed Building 2* - A large structure is adjacent to the south western corner of the study area (i.e. operating theatre block). The study area is now occupied by car parking spaces similar to that currently on the proposed building footprint. The cultivated garden beds and rectangular structure are no longer present. Bare vacant soils appear to be present on the northern side of the parking spaces. *Proposed Building 3* - The area appears to be vacant and with scarce grass cover and trees. The majority of the site is occupied by bare soils and a mound of soils (i.e. the sediment detention basin). The aerial photograph indicates a site located to the east which may be the potential source material.
10/12/2005 (colour)	The area of the hospital grounds where the sites are located and surrounding properties appear relatively unchanged from the previous aerial photograph except for some minor changes to some of the hospital buildings. *Proposed Building 1* - the study area appears to be relatively unchanged since the previous photograph except for tree growth on the eastern portions of the study area. *Proposed Building 2* - the study area appears relatively unchanged since the previous aerial photograph except for the bare vacant soils to the north which are now grass covered and vacant. *Proposed Building 3* - The sediment retention basin appears to be complete and is similar to what is currently on site. The study area appears to have more grass cover.

A.3 COUNCIL RECORDS

A request to review Ku-Ring-Gai Council (Council) records was submitted by an environmental scientist on 7 March 2008. Council staff had indicated that there were approximately 161 files on records relating to various development and upgrade works associated with the SAN Hospital grounds. A list of those records was provided to Coffey Environments and is included at the end of this Appendix A.

The list of records suggest various alterations and additions to the hospital. A development application in 1994 suggested the onsite disposal of excavated material. A development application in 2002 suggested the demolition of sheds and a fuel area.

The list of Council records also indicated that the site is zoned 5(a) Special Uses (Hospital) and Part Recreation 6(b).

A.4 INTERVIEWS

An interview with a staff member of the SAN Hospital who was familiar with the history of the site was carried out on the 10 March 2008. A summary of the relevant information from the interview is summarised below. Refer to Figures 3 and 4 for the approximate location of site features.

MR BRIAN HUDSON (ENGINEERING & WORKS COORDINATOR, SAN HOSPITAL)

Mr Hudson is the SAN Hospital Engineering & Works Coordinator and has been associated with the hospital for 20 years.

With regards to the proposed Building 1, Mr Hudson indicated that until the mid 1990s the study area was vegetated bush land at which point the Store/Business office, Laundry and the Jacaranda lodge located immediately east of the study area were constructed. The carpark areas that make up the study area were constructed at the same time as the Store/Business office and have always been asphalt paved carpark areas. Mr Hudson indicated the former sewerage works building and incinerator were located west of the proposed building area and were used for the treating of hospital grade waste prior to 1970. Following 1970, hospital waste was disposed/treated offsite by licensed/registered contractors.

With regards to the proposed Building 2, Mr Hudson indicated this portion of the site has been an asphalt sealed paved carpark area since 1973. Mr Hudson indicated the Operating Theatre block located immediately south of the Building 2 study area was approximately 11 years old which prior that was gardens used for growing vegetables. The SAN Clinic located approximately 10m south of the southeast corner of the proposed Building 2 study area was originally constructed of concrete, metal sheeting, brick and fibre cemented sheeting. Mr Hudson indicated that the fibre cement sheeting had been removed under AS1 conditions. He was not able to provide Coffey Environments with a date of removal or the contractors used for the demolition works. Mr Hudson indicated the tennis court located south of the southeast corner of the proposed Building 2 study area was also previously a vegetable garden and there was also a swimming pool. The tennis court was indicated to be approximately 11 years old. West of the proposed Building 2 study area and northwest of the tennis court Mr Hudson indicated that a dairy was once located. Mr Hudson indicated the dairy had not been in operation during his time as Engineering and Works Coordinator at the SAN Hospital. He had no knowledge of the practices at the dairy but he did indicate that the former cottage and dairying shed may have been painted with lead paint. The retention pond located immediately north of the study area was constructed approximately 5 years ago.

With regards to the proposed Building 3, Mr Hudson indicated that the sediment retention pond currently located within the central portion of the proposed Building 3 study area was constructed approximately 10 years ago. Mr Hudson indicated the sediment retention pond located north of the proposed Building 2 study area was constructed at the same time as the one within the Building 3 study area. Mr Hudson indicated one of the sources of fill material (approximately 40-50%) to create the retention ponds was from cut earthworks activities that had been carried out as part of hospital upgrade works south of proposed Building 2. The main source of fill (approximately 50-60%) used for the basin's construction was from a shopping centre development on Pennant Hills Road located approximately 1.0km to 1.5km west of the site approximately 10 years ago. Mr Hudson indicated that he was not aware of the fill materials classification and that locally sourced boulders of sandstone were used at the base of the pond.

The 'Tower' building (also known as the Main Operating Theatre Building) centrally located within the SAN Hospital was built in 1973. Northwest of the 'Tower' the now vacant land was once a Sanitarium. Southwest of 'Tower' the maternity wards were located. West of 'Tower's Hunter indicated the site has been unused and vacant for the duration of his time on site.

Mr Hudson indicated that electrical substations and diesel fuelled generators were located within some of the main hospital buildings located within the central portions of the site. An electrical substation located northeast of the physio/maternity ward located near the central eastern boundary of the SAN Hospital grounds had been previously decommissioned by Energy Australia (date not known).

Mr Hudson was able to supply Coffey Environments with a number of site plans for the SAN Hospital dated from 1970 to 2006. The plans are included at the end of Appendix A. A site plan dated 18/7/2006 indicated the location of gas, liquid, chemical and fuel tanks stored on the site. Within each of the study areas, Mr Hudson was able to confirm that no USTs or ASTs were previously located. He did indicate that leading up to the year 2000, the SAN hospital had installed a number of USTs near some the hospital main buildings for the storage of diesel and oil to be used for backup diesel generators and boilers. A number of the tanks were decommissioned shortly after. Mr Hudson also indicated that a bowser and two USTs used for storing unleaded and lead petrol were located in the area now encompassed by the carpark located immediately north of the maintenance building. Mr Hudson indicated that validation of the tank/bowser removal was carried out but he was unsure of the contractors/consultants used to carry out the works.

Mr Hudson indicated that generally there were no incidents of burning, illegal dumpings, chemical spills or fuel spills that he could recall for the SAN Hospital grounds. He also indicated that site was not used for the disposal/burial of human matter, tissue, fluids or corpses. Hospital grade waste up until 1970 had been treated at the incinerator located southwest of proposed Building 1, at which point waste was disposed of offsite.

A.5 DECC NOTICES

A search of the NSW DECC Contaminated Land Record website on the 7 March 2008 indicated that there were no notices issued for the site under the Environmentally Hazardous Chemicals Act (1985) or the Contaminated Land Management Act (1997). A copy of the search results is attached at the end of this Appendix.

A search of the NSW DECC public register for Licenses, Applications and Notices website on the 7 March 2008 indicated that the site has an EPA license for Hazardous, Industrial or Group A waste generation or storage (73) up to **100T** under section 308 of the Protection of the Environment Operations Act 1997. No breaches or notices have been issued for the site under the license (No. 6546)

A.6 WORKCOVER RECORDS

The WorkCover search of the Stored Chemical Information Database (SCID) for licenses to keep dangerous goods indicated that a license (No.35/0174066) which had information of a number of dangerous goods stored at various locations throughout the SAN Hospital. The license details indicated that as of 11/6/2004 up to 20 storage areas including ASTs, compressed gas cylinders, toxic and liquid cabinets were used for the storage of refrigerated oxygen, ethanol, petroleum, diesel, motor spirit, hydrochloric acid, hydrogen peroxide, hypochlorite, heating oil and various compressed gases (including air, carbon dioxide, helium, nitrogen, nitrous oxide and argon). The location for each of the storage areas is indicated on a map contained at the end of this Appendix. None of the above mentioned storage containers were noted to be within each of the study areas. No evidence of former storage containers within the study areas was also noted.

The WorkCover search also confirmed the location of two USTs with capacity of 20,000L each and a bowser within carpark areas immediately north of the maintenance buildings which is located approximately 125m east of the proposed building 1 and 125 northeast of the proposed building 3. A letter to WorkCover by the SAN Hospital engineer confirms that the correct procedures were not followed in notification for its decommissioning. The letter indicates that the petrol tank was removed with the diesel fuel tank filled with sand/soil, with no records or history written on these activities

The closest storage containers to the proposed buildings 1 and 3 are the above mentioned former USTs 125m to the east, two ASTs (15,000L & 20,000L) containing boiler oil 100m to the east-southeast and a number of gas cylinders approximately 125m to the east.

The closest storage containers to the proposed building 2 are a liquid oxygen AST 25m to the west and a UST (12,000L) and generator containing diesel fuel approximately 75m to the south.

The results to the WorkCover search are attached at the end of this Appendix.

ADVANCE LEGAL SEARCH PTY LIMITED

(ACN 077 067 068)
ABN 49 077 067 068

P.O. Box 149
Yagoona NSW 2199

Telephone: +612 9754 1590
Mobile: 0412 169 809
Facsimile: +612 9754 1364
Email: alsearch@optusnet.com.au

12 March 2008

Coffey
Unanderra
RECEIVED
14 MAR 2008
Job No: | Action:
Rec'd by

COFFEY ENVIRONMENTS Pty Ltd
PO Box 346
UNANDERRA NSW 2526

Attention: Daniel Deen/ Nathan Foster

RE: 185 Fox Valley Road
WAIROONGA
Sydney Adventist Hospital
Job: GEOTLCOV23062AA
PO S18054 NF

Note search is limited to subject site plan.

Current Search

Folio Identifier 62/1017514 (title attached)
DP 1017514 (plan attached)
Dated 10 March 2008
Registered Proprietor:
AUSTRALASIAN CONFERENCE ASSOCIATION LIMITED

Title Tree
Lot 62 DP 1017514

Folio Identifier 62/1017514

Folio Identifier 53/880017

Folio Identifier 14/834969

Certificate of Title Volume 8447 Fol 83

Certificate of Title Volume 6572 Fol 212

Certificate of Title Volume 5964 Fol 61

(a)		(b)	(c)
CT Vol 4506 Folio 44		CTVol 5011 Folio 245	CTVol 3067 Folio 88
CTVol 2827 Folio 182		CTVol 313 Folio 146	CTVol 2112 Folio 104
(ai)	(aii)	***	***
CT 97 – 141	CT 98 - 64		
****	****		

Summary of proprietor(s)
Lot 62 DP 1017514

Year	Proprietor
	(Lot 62 DP 1017514)
2000 – todate	Australasian Conference Association Limited
(2000 – todate)	*(various commercial leases see Folio Identifier 62/1017514)*
(2000 – todate)	*(various commercial leases see Historical Folio Identifier 62/1017514)*
	(Lot 53 DP 880017)
1998 – 2000	Australasian Conference Association Limited
(1998 – 2000)	*(various commercial leases see Historical Folio Identifier 53/880017)*
	(Lot 14 DP 834969)
1994 – 1998	Australasian Conference Association Limited
(1994 – 1998)	*(various commercial leases see Historical Folio Identifier 14/834969)*
	(Portion 30 and part Portios 28, 29 & 31 and 1 Acre 2 Roods 4 ¼ Perches grant, Parish Gordon & South Colah – Area 158 Acres 0 Roods 25 Perches – CT Vol 8447 Fol 83)
1963 – 1994	Australasian Conference Association Limited
	(Portion 30 and part Portios 28, 29 & 31 and 1 Acre 2 Roods 4 ¼ Perches grant, Parish Gordon & South Colah – Area 159 Acres 1 Roods 37 ¼ Perches – CT Vol 6572 Fol 212)
1952 – 1963	Australasian Conference Association Limited
(1955 – 1958)	*(lease to Walter George Fredericks, storekeeper & Margaret Lucy Fredericks, of part)*
	(Portion 30 and part Portios 28, 29 & 31 and 1 Acre 2 Roods 4 ¼ Perches grant, Parish Gordon & South Colah – Area 159 Acres 1 Roods 37 ¼ Perches – CT Vol 5964 Fol 61)
1949 – 1952	Australasian Conference Association Limited

See Notes (a), (b) & (c)

Note (a)

	(Part Portions 29 & 30 Parish Gordon – Area 74 Acres 0 Roods 3 ¾ Perches – CTVol 4506 Fol 44)
1931 – 1949	Australasian Conference Association Limited
	(Part Portions 29 & 30 Parish Gordon – Area 75 Acres 1 Roods 18 Perches – CTVol 2827 Fol 182)
1918 – 1931	Australasian Conference Association Limited

See Notes (ai) & (aii)

Note (ai)

	(Part Portion 30 Parish Gordon – Area 9 Acres 0 Roods 33 Perches – CTVol 97 Fol 141)
1903 – 1918	The Sydney Sanitarium and Benevolent Association Limited
1901 – 1903	Frederick Lacey Sharp, business manager
	John Allen Burbery, business manager
	Daniel Kness, physician
	Eugene William Farnsworth, minister of gospel
	Merritt Gardiner Kellogg, architect
1890 – 1901	Joshua Reuben Johnson, minor

****

Note (aii)

	(Part Portions 29 & 30 Parish Gordon – Area 71 Acres 2 Roods 21 Perches – CTVol 98 Fol 64)
1903 – 1918	The Sydney Sanitarium and Benevolent Association Limited
1901 – 1903	Frederick Lacey Sharp, business manager
	John Allen Burbery, business manager
	Daniel Kness, physician
	Eugene William Farnsworth, minister of gospel
	Merritt Gardiner Kellogg, architect
1895 – 1901	Elizabeth Sharpe Evans, widow
1870 – 1895	Richard Bartleff Evans, labourer

****

Note (b)

	(Part Portion 31 Parish Gordon – Area 54 Acres 2 Roods 31 ½ Perches CTVol 5011 Fol 245)
1941 – 1949	Australasian Conference Association Limited
1939 – 1941	Perpetual Trustee Company (Limited)
	(Portion 31 Parish Gordon Area 72 Acres – CTVol 353 Fol 146)
1935 – 1939	Perpetual Trustee Company (Limited)
1885 – 1935	Austin Corange, esquire
1877 – 1885	Alexander Bowman, grantee

****

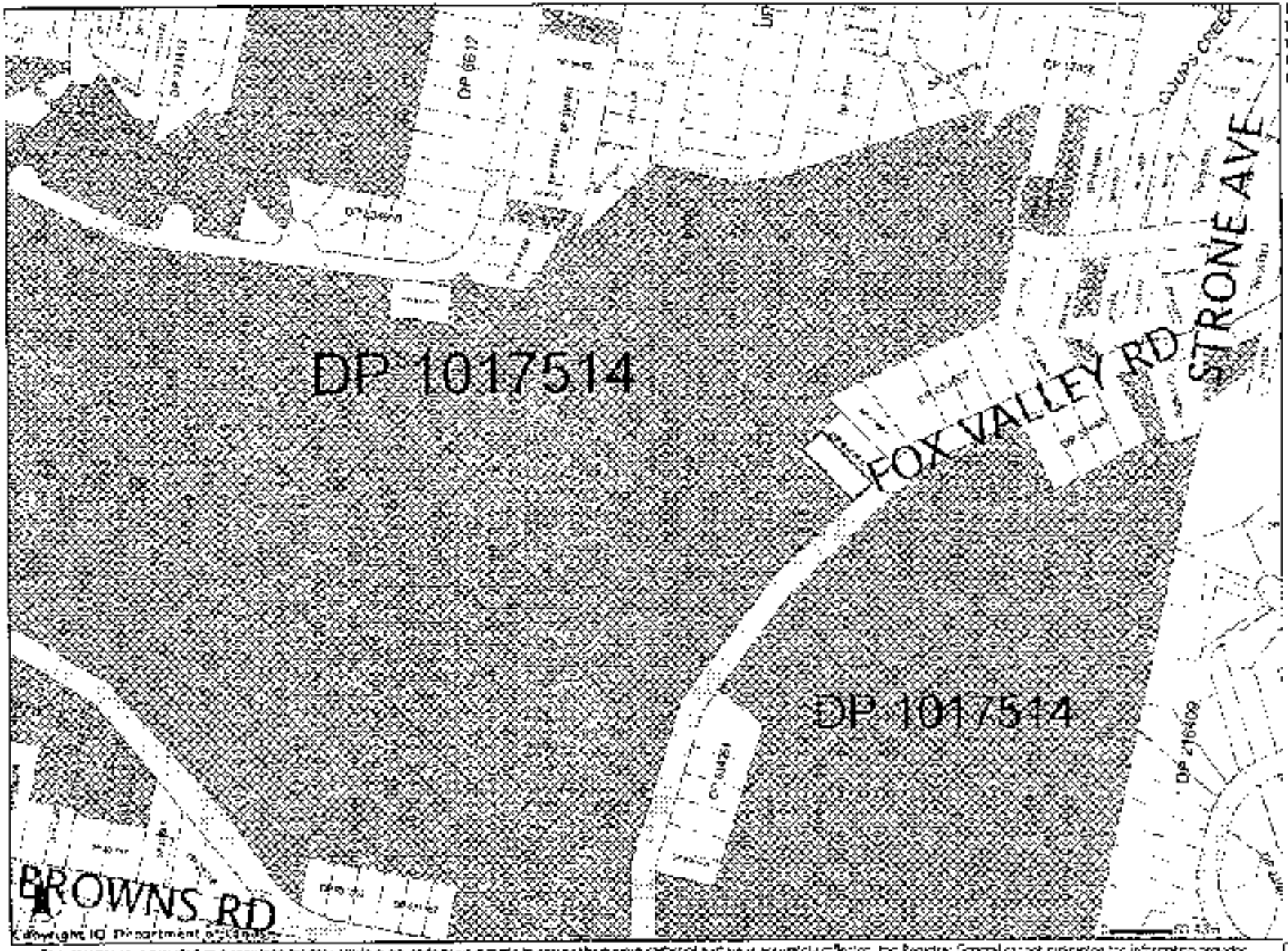
Note (c)

	(Part Portions 29 & 30 Parish Gordon – Area 16 Acres 3 Roods 18 Perches – CTVol 3067 Fol 88)
1920 – 1949	Australasian Conference Association Limited

****

Printed : Monday, 10 March 2008 1:18:11 PM by pkrecm3

Cadastral Records Viewer Print



Current Feature
Lot 1 DP833960
Local by: WA-KOOR-GA
Trial: QL-RING GE
Parish: GORDON
County: CUMBERLAND

LEGEND
(Parcels Selected Features)

Copyright © Department of Lands

"The information is provided as a searchable list only. While every endeavour is made to ensure the current national pattern is accurately reflected, the Registrar General cannot guarantee the information provided."

Department of Lands

Information Provided Through
Advance Legal Search Pty Ltd
Ph 02[illegible] Fax 02[illegible]

Title Search

EziSearch
An Approved LPI NSW
Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES TITLE SEARCH

FOLIO: 62/1017514

SEARCH DATE	TIME	EDITION NO	DATE
10/3/2008	6:11 PM	24	19/2/2007

LAND

LOT 62 IN DEPOSITED PLAN 1017514
AT WARRONGA
LOCAL GOVERNMENT AREA KU-RING-GAI
PARISH OF GORDON COUNTY OF CUMBERLAND
TITLE DIAGRAM DP1017514

FIRST SCHEDULE

AUSTRALASIAN CONFERENCE ASSOCIATION (THE)

SECOND SCHEDULE (52 NOTIFICATIONS)
---
1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 C941593 COVENANT AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM.
3 B830204 EASEMENT FOR NATURAL WATERCOURSE 1.82 WIDE AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
4 B830204 EASEMENT FOR DRAINAGE 1.82 WIDE AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
5 J221147 EASEMENT 7.62 WIDE AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
6 J221147 CONSTRUCTION EASEMENT 7.62 WIDE AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
7 K610215 EASEMENT FOR WATER SUPPLY WORKS 3.05 WIDE AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
8 DP660633 DRAINAGE EASEMENT 2.5 WIDE AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
9 X643857 LEASE TO SYDNEY COUNTY COUNCIL OF SUBSTATION PREMISES NO 6435 TOGETHER WITH RIGHT OF WAY & EASEMENT FOR ELECTRICITY PURPOSES AS SHOWN IN PLAN WITH X643857. EXPIRES 31.12.2037
10 Q251457 LEASE TO SYDNEY ELECTRICITY OF SUBSTATION PREMISES NO.7241 TOGETHER WITH RIGHT OF WAY & EASEMENT FOR ELECTRICITY PURPOSES AS SHOWN IN PLAN WITH Q251457. EXPIRES 28.2.2045
11 3301465 LEASE TO ENERGY AUSTRALIA OF SUBSTATION PREMISES NO.7484 TOGETHER WITH RIGHT OF WAY & EASEMENT SHOWN IN PLAN WITH 3301465. EXPIRES 31.8.2046
12 5431960 LEASE TO OPTUS MOBILE PTY LIMITED OF THE PART SHOWN HATCHED IN PLAN WITH 5431960. COMMENCES 31/3/2004. EXPIRES: 30/3/2009.

END OF PAGE 1 - CONTINUED OVER

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 07/1317524 PAGE 2

SECOND SCHEDULE (97 NOTIFICATIONS) (CONTINUED)

13 5431961 LEASE TO OPTUS MOBILE PTY LIMITED OF THE PART SHOWN HATCHED IN PLAN WITH 5431961. COMMENCES 01/3/2009. EXPIRES: 28/3/2014.

14 DP1017814 EASEMENT TO DRAIN WATER 1 METRE(S) WIDE AFFECTING THE PARCEL(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM

15 7015241 LEASE TO LUCENT TECHNOLOGIES AUSTRALIA PTY LIMITED OF THE AREA SHOWN HATCHED IN PLAN NOTE 7015241. EXPIRES: 10/2/2002. OPTION OF RENEWAL: 3 OPTIONS OF 5 YEARS.

8680492 TRANSFER OF LEASE 7015241 LESSEE NOW HUTCHISON 3G AUSTRALIA PTY LIMITED

16 9789667 LEASE TO JUDGE PHILLIP HOWE & PETA MONICA HOWE OF SUITE 307, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 30/6/2008. OPTION OF RENEWAL: 5 YEARS WITH A FURTHER PERIOD OF 5 YEARS.

AC327610 TRANSFER OF LEASE 9789667 LESSEE NOW BRAMLO PTY LIMITED

17 9789668 LEASE TO KSLZ 210 PTY LIMITED OF "THE POOL CHILDCARE CENTRE", 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 31/3/2008. OPTION OF RENEWAL: 5 YEARS.

AC359617 TRANSFER OF LEASE 9789668 LESSEE NOW CHILDS FAMILY KINDERGARTENS LIMITED

18 9903478 LEASE TO STUART G KIRKHAM OF SUITE 308, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 27/7/2008. OPTION OF RENEWAL: 5 YEARS.

19 9973248 LEASE TO GRAHAM DOUGLAS SELLARS OF SUITE 307, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 9/7/2008. OPTION OF RENEWAL: 5 YEARS.

20 9973249 LEASE TO MAXIVEND PTY LTD OF SUITE 601A, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 27/7/2008. OPTION OF RENEWAL: 5 YEARS.

21 9973250 LEASE TO JOHN JAMES BURKE & DAVID MCHARG OF SUITE 306, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 15/7/2010. OPTION OF RENEWAL: TWO TERMS OF 7 YEARS EACH.

22 9973251 LEASE TO MELISSA DOGHAN OF SUITE 504, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 9/7/2008. OPTION OF RENEWAL: 5 YEARS.

23 9973252 LEASE TO MADELEINE GIUTRONICH OF SUITE 601C, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 27/7/2008. OPTION OF RENEWAL: 5 YEARS.

24 9973253 LEASE TO WESTERN SYDNEY ORTHOPAEDIC ASSOCIATES PTY LIMITED OF SUITE 601B, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 27/7/2008. OPTION OF RENEWAL: 5 YEARS.

25 9966048 LEASE TO THOMAS P CAVALIERI PTY & NICHOLAS CARDIOLOGY

END OF PAGE 2 - CONTINUED OVER

Guffey - Wahroonga ALSP PRINTED ON 10/3/2008

LAND AND PROPERTY INFORMATION NEW SOUTH WALES TITLE SEARCH

FOLIO: 62/1017514 PAGE 3

SECOND SCHEDULE (62 NOTIFICATIONS) (CONTINUED)

PTY LTD OF SUITE 502, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 9/7/2008. OPTION OF RENEWAL: 5 YEARS.

26 9985692 LEASE TO KOH PTY LIMITED OF SUITE 511, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 9/7/2008. OPTION OF RENEWAL: 5 YEARS.

27 9985693 LEASE TO THOMAS DEAN PTY LIMITED O. SUITE 506, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 3/8/2008. OPTION OF RENEWAL: 5 YEARS.

28 9985694 LEASE TO HARVEY GEORGE WASHINGTON OF SUITE 603, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 3/8/2008. OPTION OF RENEWAL: 5 YEARS.

29 AA7460 LEASE TO SCOTT BUTLER SIMPSON OF SUITE 510, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 29/7/2008. OPTION OF RENEWAL: 5 YEARS.

30 AA7461 LEASE TO RODISO PTY LTD OF SUITE 304, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 26/8/2008. OPTION OF RENEWAL: 5 YEARS.

31 AA31754 LEASE TO BONE RECONSTRUCTION PTY LIMITED OF SUITE 601D, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 27/7/2008. OPTION OF RENEWAL: 5 YEARS.

32 AA81015 LEASE TO MATTHEW JOSEPH MCNAMARA OF SUITE 501, THE SAN CLINIC, 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 15/7/2008. OPTION OF RENEWAL: 5 YEARS.

33 AA95145 LEASE TO DR ARTHUR RICHARDSON PTY LTD OF SUITE 503, THE SAN CLINIC, 185 FOX VALLEY RD, WAHROONGA. EXPIRES: 9/7/2008. OPTION OF RENEWAL: 5 YEARS.

34 AA95146 LEASE TO ROBERT JAMES HARDWICK OF SUITE 606, THE SAN CLINIC, 185 FOX VALLEY RD, WAHROONGA. EXPIRES: 24/7/2008. OPTION OF RENEWAL: 5 YEARS.

35 AA177677 LEASE TO CONCOR MANAGEMENT SERVICES PTY LIMITED OF SUITE 505, THE SAN CLINIC, 185 FOX VALLEY RD, WAHROONGA. EXPIRES: 27/7/2008. OPTION OF RENEWAL: 5 YEARS.

36 AA302540 LEASE TO NORTHSIDE PHYSIO NO 2 PTY LIMITED OF SUITE 602, THE SAN CLINIC, 185 FOX VALLEY RD, WAHROONGA. EXPIRES: 19/10/2008 OPTION OF RENEWAL: 5 YRS.

37 AA467068 LEASE TO DR R. & S. L KIRSOP PTY LIMITED OF SUITE 605, THE SAN CLINIC, 185 FOX VALLEY RD, WAHROONGA. EXPIRES: 9/7/2008. OPTION OF RENEWAL: 5 YRS.

38 AA478702 LEASE TO STAN SIGNO PTY LTD OF SUITE 604, THE SAN CLINIC, 185 FOX VALLEY RD, WAHROONGA. EXPIRED: 9/8/2008. OPTION OF RENEWAL: 5 YEARS.

AB940552 TRANSFER OF LEASE AA478702 LESSEE NOW GREGORY BRUCE BENNETT

39 AB277604 LEASE TO G B PAUL PTY LTD OF SUITE 509, THE SAN

END OF PAGE 3 - CONTINUED OVER

LAND AND PROPERTY INFORMATION NSW SOUTH WALES - TITLE SEARCH

FOLIO: 62/1017514 PAGE 4

SECOND SCHEDULE (39 NOTIFICATIONS) (CONTINUED)

CLINIC, 185 FOX VALLEY RD, WAHROONGA. EXPIRES: 30/6/2008. OPTION OF RENEWAL: 5 YEARS.

40 AB624793 EASEMENT FOR ELECTRICITY SUBSTATION AFFECTING THE PART DESIGNATED (C) IN DP1080220

41 AB624793 RIGHT OF WAY AFFECTING THE PART DESIGNATED (B) IN DP1080220

42 AB624793 EASEMENT FOR ELECTRICITY PURPOSES AFFECTING THE PART DESIGNATED (A) IN DP1080220

43 AB166636 LEASE TO VODAFONE NETWORK PTY LIMITED OF PART OF THE ROOF SHOWN HATCHED IN PLAN WITH LEASE J990412 AND EXCLUDING THE AREA SHOWN HATCHED IN PLAN WITH PARTIAL SURRENDER OF LEASE S532722. EXPIRES: 30/3/2009. OPTION OF RENEWAL: 5 YEARS.

44 AB856608 LEASE TO TELSTRA CORPORATION LIMITED OF THE PART SHOWN HATCHED IN PLAN WITH AB856608. EXPIRES: 30/6/2007. OPTION OF RENEWAL: 5 YEARS WITH 1 FURTHER PERIOD OF 5 YEARS.

45 AC392261 LEASE TO JOE WATSON PTY LTD OF SUITE 402 THE SAN CLINIC 185 FOX VALLEY ROAD WAHROONGA. EXPIRES: 31/12/2010. OPTION OF RENEWAL: 2 X 5 YEARS.

46 AC392262 LEASE TO ROAM PTY LTD OF SUITE 401 THE SAN CLINIC 185 FOX VALLEY ROAD WAHROONGA. EXPIRES: 31/12/2010. OPTION OF RENEWAL: 2 X 5 YEARS.

47 AC366403 LEASE TO SPECIALIST ONCOLOGY SERVICES PTY LTD OF SUITES 301 AND 302, "THE SAN CLINIC", 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 31/10/2010. OPTION OF RENEWAL: 5 YEARS WITH A FURTHER PERIOD OF 5 YEARS.

48 AC366404 LEASE TO NORTHERN SURGICAL ONCOLOGY PTY LTD OF SUITE 404, "THE SAN CLINIC", 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 31/10/2010. OPTION OF RENEWAL: 5 YEARS WITH A FURTHER PERIOD OF FIVE YEARS.

49 AC366405 LEASE TO SYDNEY UROLOGICAL ASSOCIATES PTY LTD OF SUITE 406, "THE SAN CLINIC", 185 FOX VALLEY ROAD, WAHROONGA. EXPIRES: 31/10/2010. OPTION OF RENEWAL: 5 YEARS WITH A FURTHER PERIOD OF 5 YEARS.

50 AC484401 EASEMENT FOR ELECTRICITY SUBSTATION PURPOSES 5.33 WIDE AFFECTING THE PART DESIGNATED (S) IN DP1101280

51 AC484401 EASEMENT FOR ELECTRICITY PURPOSES 2 WIDE AFFECTING THE PART DESIGNATED (E) IN DP1101280

52 AC484401 RIGHT OF WAY VARIABLE WIDTH AFFECTING THE PART DESIGNATED (R) IN DP1101280

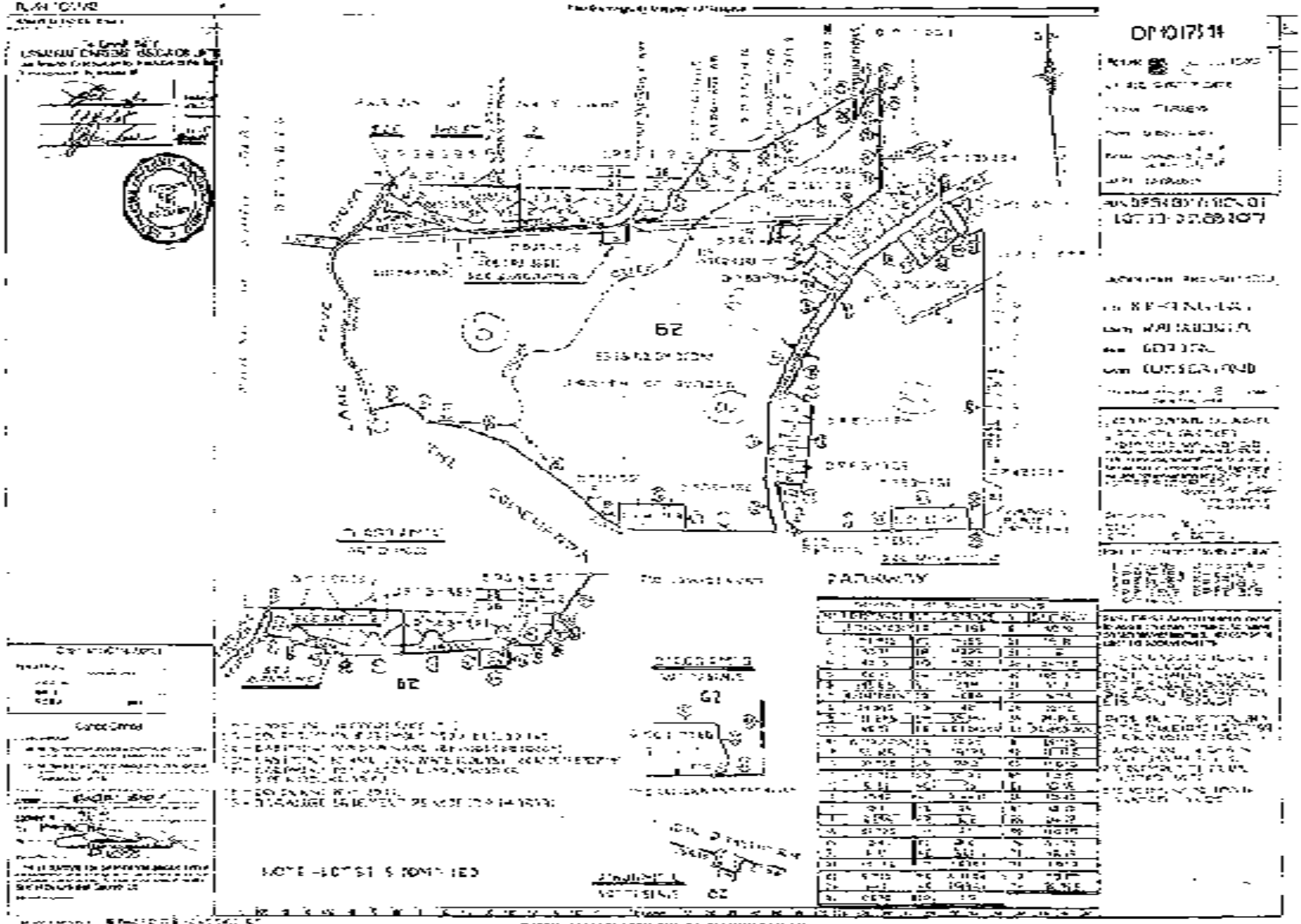
NOTATIONS

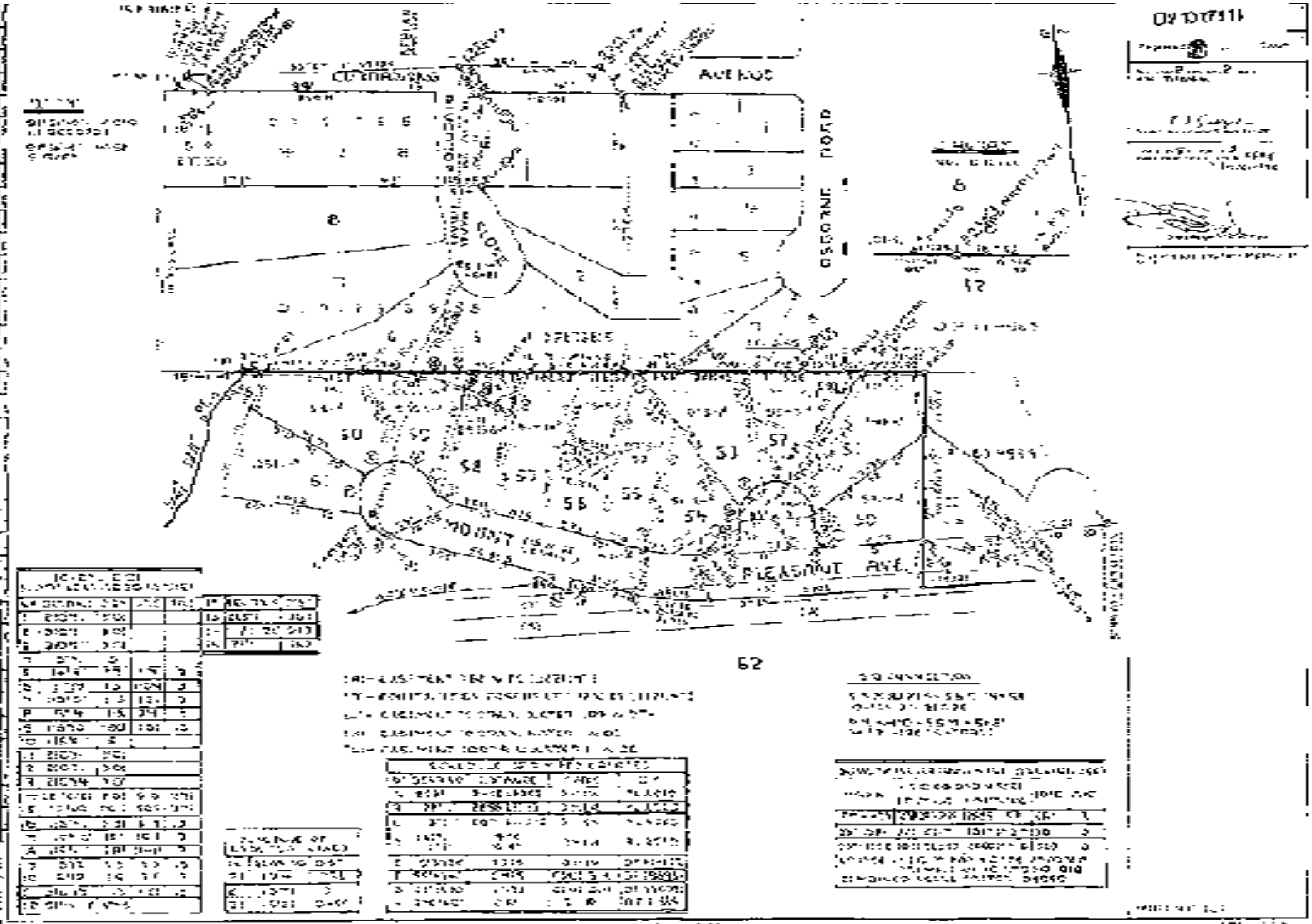
UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Corley - Wahroonga ALSP PRINTED ON 10/3/2008

* ANY ENTRIES PRECEDED BY AN ASTERISK DO NOT APPEAR ON THE CURRENT EDITION OF TITLE. WARNING: THE INFORMATION APPEARING UNDER NOTATIONS HAS NOT BEEN FORMALLY RECORDED IN THE REGISTER. ADVANCE LEGAL SEARCHES ONLY CERTIFIES THAT THE INFORMATION CONTAINED IN THIS DOCUMENT HAS BEEN PROVIDED ELECTRONICALLY BY THE REGISTRAR GENERAL IN ACCORDANCE WITH SECTION 96B(2) OF THE REAL PROPERTY ACT 1900


DP 1017544
PATHWAY


AVENUE
OSBORNE ROAD
FLORA
MOUNT
PLEASANT AVE.
62
57
51
55
54
50
52
12
6

Information Provided Through
Advance Legal Search Pty Ltd
Ph 0297111590 Fax. 0297541364

Historical Search

EziSearch
An Approved LPI NSW
Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
10/3/2008 6:14PM

FOLIO: 62/1017514

First Title(s): VOL 313 FOL 146 VOL 4785 FOL 192
OLD SYSTEM
Prior Title(s): 53/800017

Recorded	Number	Type of Instrument	C.T. Issue
2/11/2000	DP1017514	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
9/1/2001	7015241	LEASE	
12/2/2001	7154495	LEASE	EDITION 1
29/3/2001	7398269	TRANSFER OF LEASE	
11/7/2002	8660107	LEASE	
11/7/2002	8680491	TRANSFER OF LEASE	EDITION 2
15/7/2003	9789667	LEASE	
15/7/2003	9789668	LEASE	EDITION 3
22/8/2003	9903470	LEASE	EDITION 4
29/8/2003	9923248	LEASE	
29/8/2003	9923249	LEASE	
29/8/2003	9923250	LEASE	
29/8/2003	9923251	LEASE	
29/8/2003	9923252	LEASE	
29/8/2003	9923253	LEASE	EDITION 5
12/9/2003	9966040	LEASE	EDITION 6
18/9/2003	9985692	LEASE	
18/9/2003	9985693	LEASE	
18/9/2003	9985694	LEASE	
25/9/2003	AA7022	DEPARTMENTAL DEALING	EDITION 7
25/9/2003	AA7460	LEASE	
25/9/2003	AA7461	LEASE	EDITION 8
2/10/2003	AA31754	LEASE	EDITION 9
22/10/2003	AA87015	LEASE	EDITION 10
27/10/2003	AA95145	LEASE	

END OF PAGE 1 - CONTINUED OVER

Coffey - Wahroonga ALSP

PRINTED ON 10/3/2008

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

10/3/2008 6:04PM

FOLIO: 62/1017514 PAGE 2

Recorded	Number	Type of Instrument	C.T. Issue
27/10/2003	AA895146	LEASE	EDITION 11
20/11/2003	AA177677	LEASE	EDITION 12
7/1/2004	AA302548	LEASE	EDITION 13
2/3/2004	AA462063	LEASE	EDITION 14
15/6/2004	AA478792	LEASE	EDITION 15
18/10/2004	AB27704	LEASE	EDITION 16
18/4/2005	DP1080220	DEPOSITED PLAN	
10/7/2005	AB624793	GRANT OF EASEMENT	EDITION 17
27/9/2005	AB766634	LEASE	EDITION 18
9/11/2005	AB856407	DETERMINATION OF LEASE	
9/11/2005	AB856408	LEASE	EDITION 19
25/11/2005	AB940557	TRANSFER OF LEASE	
2/12/2005	AB953505	LEASE	EDITION 20
24/5/2006	AC327613	TRANSFER OF LEASE	
1/6/2006	AC352261	LEASE	
1/6/2006	AC352262	LEASE	EDITION 21
23/6/2006	AC399613	TRANSFER OF LEASE	
21/7/2006	AC366463	LEASE	
21/7/2006	AC366464	LEASE	
21/7/2006	AC366465	LEASE	EDITION 22
14/8/2006	DP1101280	DEPOSITED PLAN	
20/9/2006	AC484401	GRANT OF EASEMENT	EDITION 23
20/9/2006	AC610039	DEPARTMENTAL DEALING	
19/2/2007	AC947037	DETERMINATION OF LEASE	EDITION 24

*** END OF SEARCH ***

Coffey - Wahroonga ALSP PRINTED ON 10/3/2008

* ANY ENTRIES PRECEDED BY AN ASTERISK DO NOT APPEAR ON THE CURRENT EDITION OF TITLE. WARNING: THE INFORMATION APPEARING UNDER NOTATIONS HAS NOT BEEN FORMALLY RECORDED IN THE REGISTER. ADVANCE LEGAL SEARCH BY LPI CERTIFIES THAT THE INFORMATION CONTAINED IN THIS DOCUMENT HAS BEEN PROVIDED ELECTRONICALLY BY THE REGISTRAR GENERAL IN ACCORDANCE WITH SECTION 96B(2) OF THE REAL PROPERTY ACT, 1900

Information Provided Through
Advance Legal Search Pty Ltd
Ph: 0297541300 Fax: 0297541361

Historical Search

EziSearch
An Approved LPI NSW
Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

10/3/2008 6:16PM

FOLIO: 53/880017

First Title(s): OLD SYSTEM VOL 313 FOL 146
VOL 4085 FOL 192
Prior Title(s): 14/834969

Recorded	Number	Type of Instrument	C.T. Issue
18/9/1998	DP880017	DEPOSITED PLAN	FOLIO CREATED EDITION 1
10/12/1998	5431958	LEASE	
10/12/1998	5431959	LEASE	
10/12/1998	5431960	LEASE	
10/12/1998	5431961	LEASE	EDITION 2
19/1/1999	5532722	DETERMINATION OF LEASE	EDITION 3
20/1/1999	5534627	DEPARTMENTAL DEALING	
20/1/1999	5534644	CHANGE OF NAME	EDITION 4
29/4/1999	5507304	CHANGE OF NAME	
18/11/1999	6250590	LEASE	EDITION 5
2/11/2000	DP1017514	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS
7/11/2000	7204401	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

Coffey - Wahroonga ALSP PRINTED ON 10/3/2008

* ANY ENTRIES PRECEDED BY AN ASTERISK DO NOT APPEAR ON THE CURRENT EDITION OF TITLE. WARNING: THE INFORMATION APPEARING UNDER NOTATIONS HAS NOT BEEN FORMALLY RECORDED IN THE REGISTER. ADVANCE LEGAL SEARCH PTY LTD CERTIFIES THAT THE INFORMATION CONTAINED IN THIS DOCUMENT HAS BEEN PROVIDED ELECTRONICALLY BY THE REGISTRAR GENERAL IN ACCORDANCE WITH SECTION 96(B)(2) OF THE REAL PROPERTY ACT, 1900

Information Provided Through
Advance Legal Search Pty Ltd
Ph 0297591500 Fax 0297541364

Historical Search

EziSearch
An Approved LPI NSW
Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

10/3/2008 6:21PM

FOLIO: 14/834969

First Title(s): OLD SYSTEM VOL 313 FOL 146
VOL 4785 FOL 192
Prior Title(s): VOL 8447 FOL 83

Recorded	Number	Type of Instrument	C.T. Issue
7/2/1994	DP834969	DEPOSITED PLAN	FOLIO CREATED EDITION 1
22/2/1995	0990412	LEASE	EDITION 2
25/5/1995	0251457	LEASE	EDITION 3
22/6/1995		AMENDMENT: LOCAL GOVT AREA	
22/6/1995		AMENDMENT: PARISH-COUNTY	
22/6/1995	0324983	DEPARTMENTAL DEALING	
18/8/1997	3301465	LEASE	EDITION 4
16/9/1998	DP880017	DEPOSITED PLAN	FOLIO CANCELLED
3/11/1998	5370510	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

Corfey - Wahroonga ALSP PRINTED ON 10/3/2008

* ANY ENTRIES PRECEDED BY AN ASTERISK DO NOT APPEAR ON THE CURRENT EDITION OF THE TITLE. WARNING: THE INFORMATION APPEARING UNDER NOTATIONS HAS NOT BEEN FORMALLY RECORDED IN THE REGISTER. ADVANCE LEGAL SEARCH PTY LTD CERTIFIES THAT THE INFORMATION CONTAINED IN THIS DOCUMENT HAS BEEN PROVIDED ELECTRONICALLY BY THE REGISTRAR-GENERAL IN ACCORDANCE WITH SECTION 96B(2) OF THE REAL PROPERTY ACT 1900

No. 75

New South Wales

Vol. 313 Fol. 149

GRANT OF LAND SOLD AT UPset PRICE AFTER ADVERTISED SALE BY AUCTION.

The land described ..... 2 ..... acres ..... perches

Where the director from [illegible]

RECORDED and ENROLLED in the Registrar General's Office at Sydney, in New South Wales, this [illegible] day of [illegible] 1[illegible]

Registrar General.

No. [illegible] MORTGAGE [illegible] from the [illegible] to the NORTHERN [illegible] PRODUCED and ENTERED [illegible] 12 o'clock in the forenoon.

Deputy Registrar General.

[illegible] PRODUCED and ENTERED [illegible] at 12 o'clock noon.

Deputy Registrar General.

No. 71.216 MORTGAGE [illegible] from the [illegible] ALEXANDER [illegible] to the [illegible] AUSTRALIA, PRODUCED and ENTERED [illegible] at [illegible] 12 o'clock in the forenoon.

Deputy Registrar General.

[illegible] 18[illegible]
FROM THE [illegible] TO [illegible]
PRODUCED & ENTERED [illegible] 18[illegible]
[illegible] 10 o'clock [illegible] noon.
[illegible] REGISTRAR GENERAL.

COPY OF TRANSFER DATED [illegible] 18[illegible]
BY THE [illegible] NAMED [illegible] TO [illegible]
[illegible] DESCRIBED
PRODUCED & ENTERED [illegible] 18[illegible]
[illegible] o'clock [illegible] noon.
[illegible] REGISTRAR GENERAL.

[illegible] NOTIFICATION BY TRANSMISSION
[illegible] 18[illegible]
[illegible]

TO [illegible] GREAT [illegible] of the [illegible] PRODUCED [illegible] 18[illegible]
[illegible] REGISTRAR GENERAL

[illegible] of the land within [illegible]
[illegible]

Title Deed to Certificate of Title issued
No. [illegible]
[illegible]

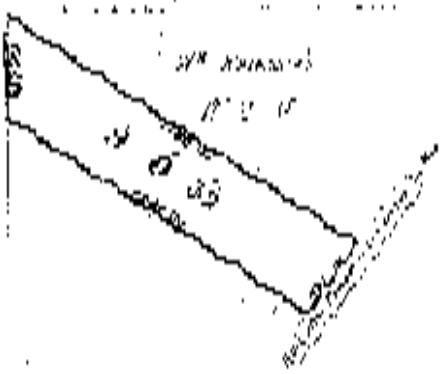
CERTIFICATE OF TITLE

(C.)

New South Wales.

REGISTER BOOK

[illegible]



[illegible]TIFICATE OF TIT[illegible]

CANCELLED

New South Wales.

[illegible] Title [illegible] 1505

Richard [illegible] of the City of Sydney [illegible] [illegible]

[illegible]

Twenty [illegible]

March One thousand eight hundred and [illegible]

Signed the 22nd day of March 18[illegible]

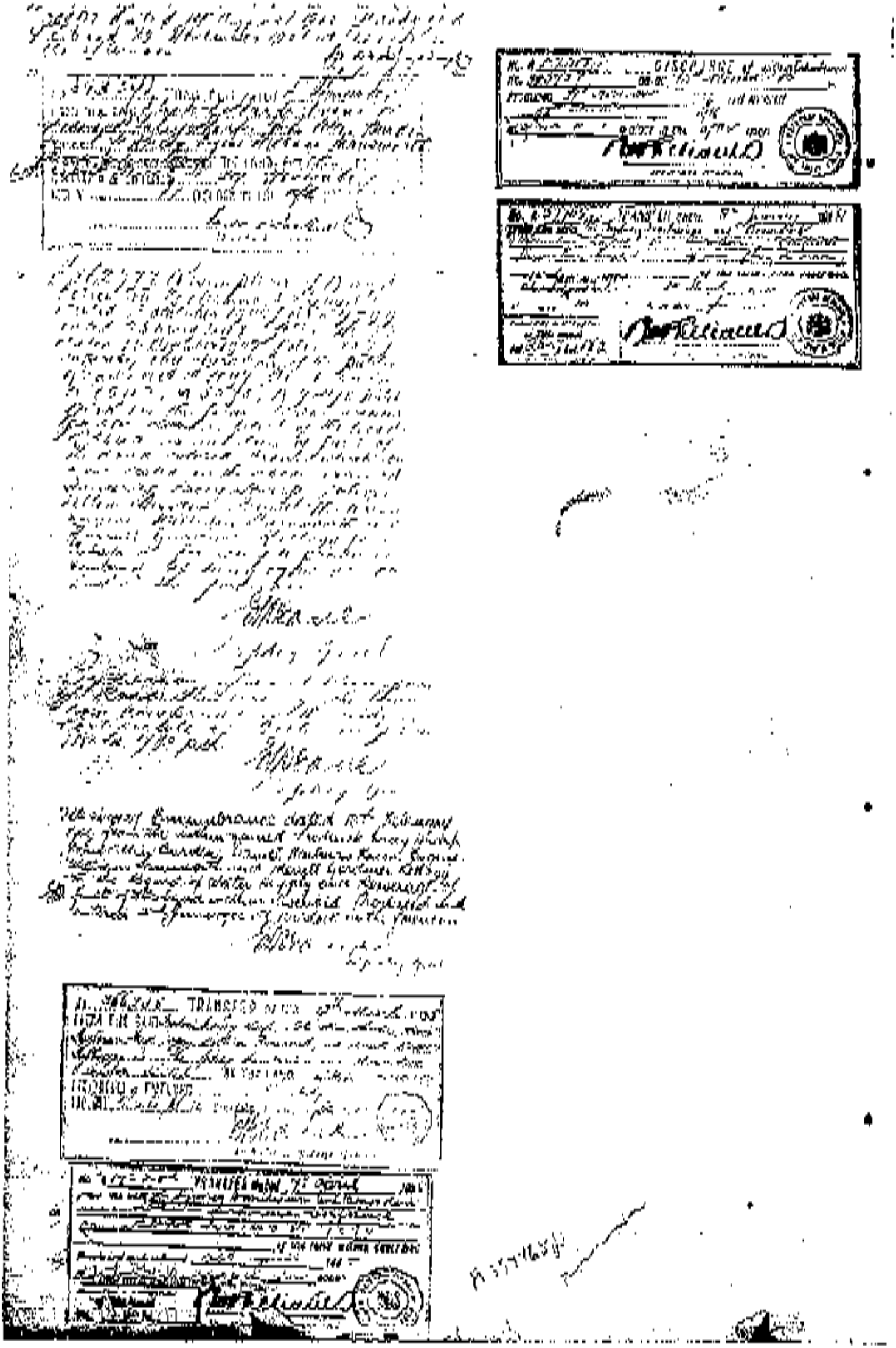
in the presence of

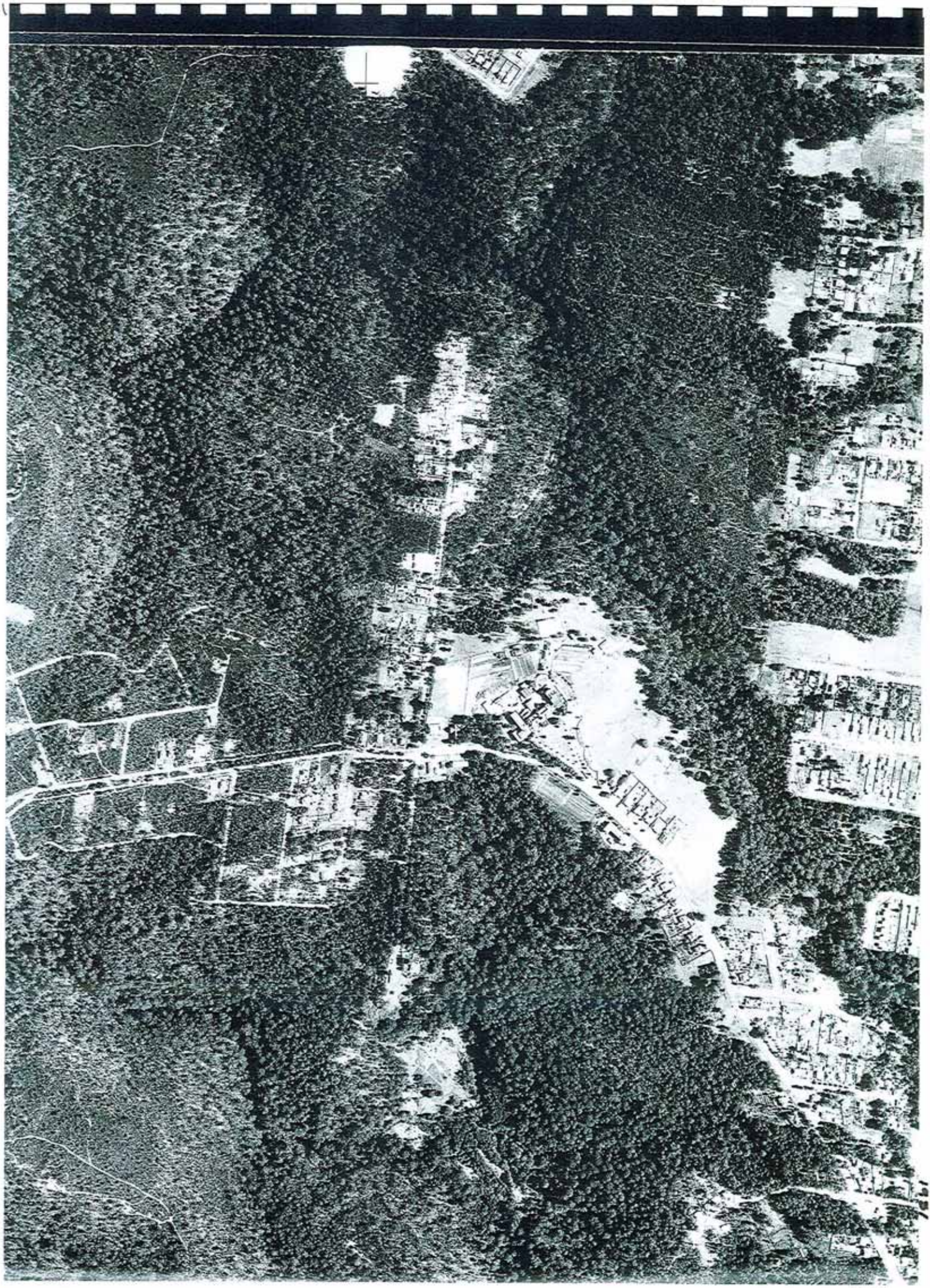
[illegible]

Registrar General.

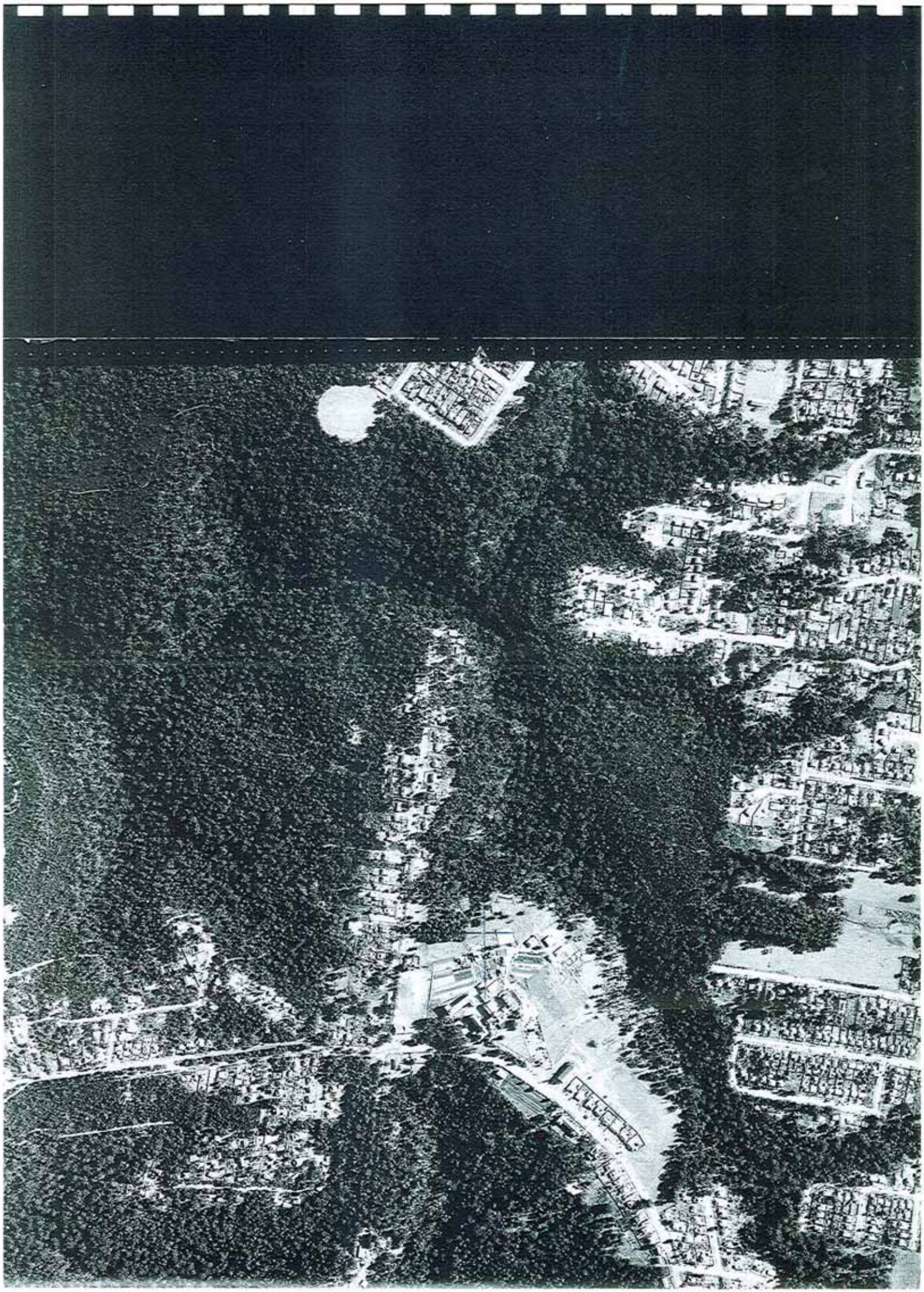
[illegible] November 1899 [illegible]

Dep. Reg. Gen.



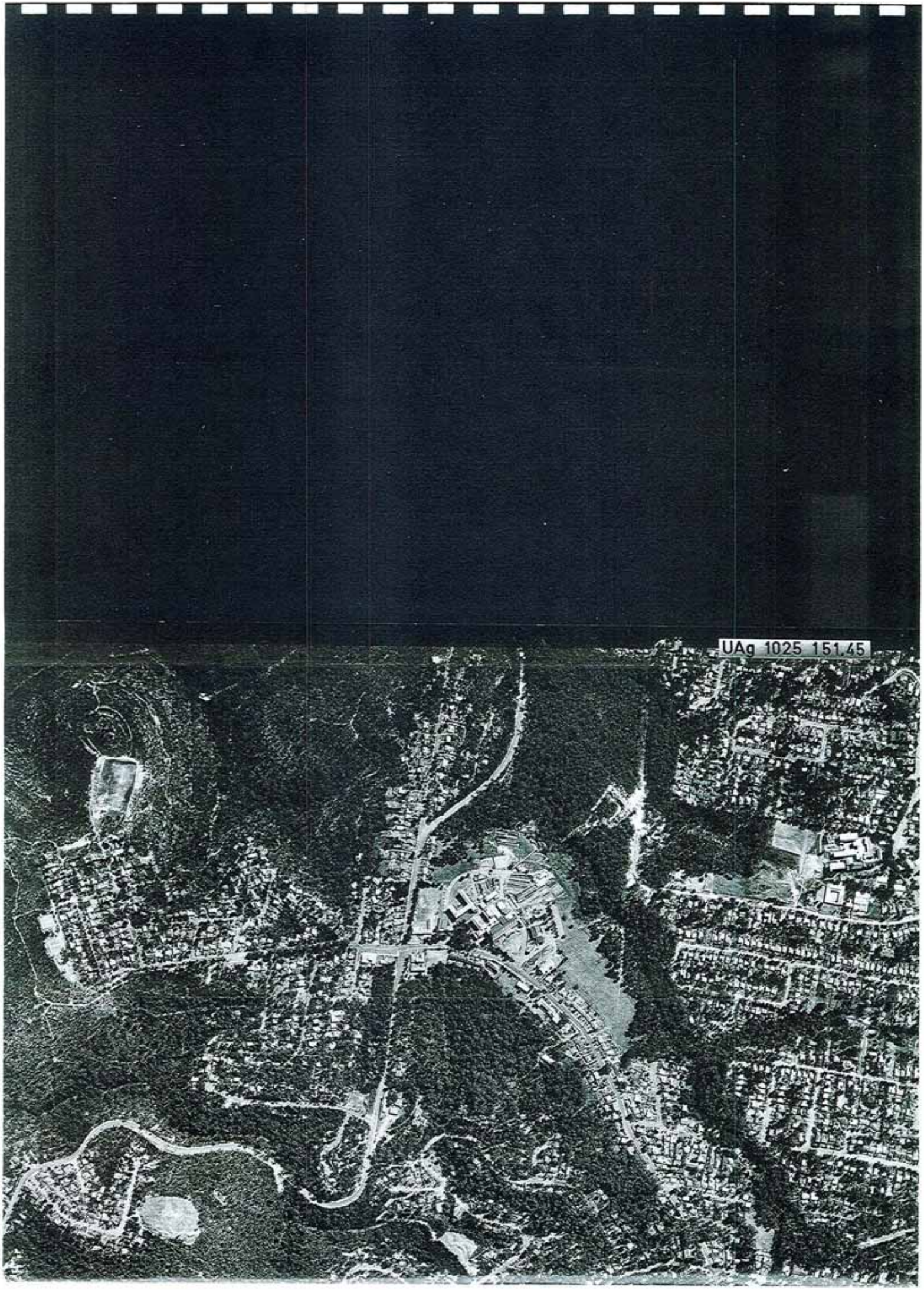


1951



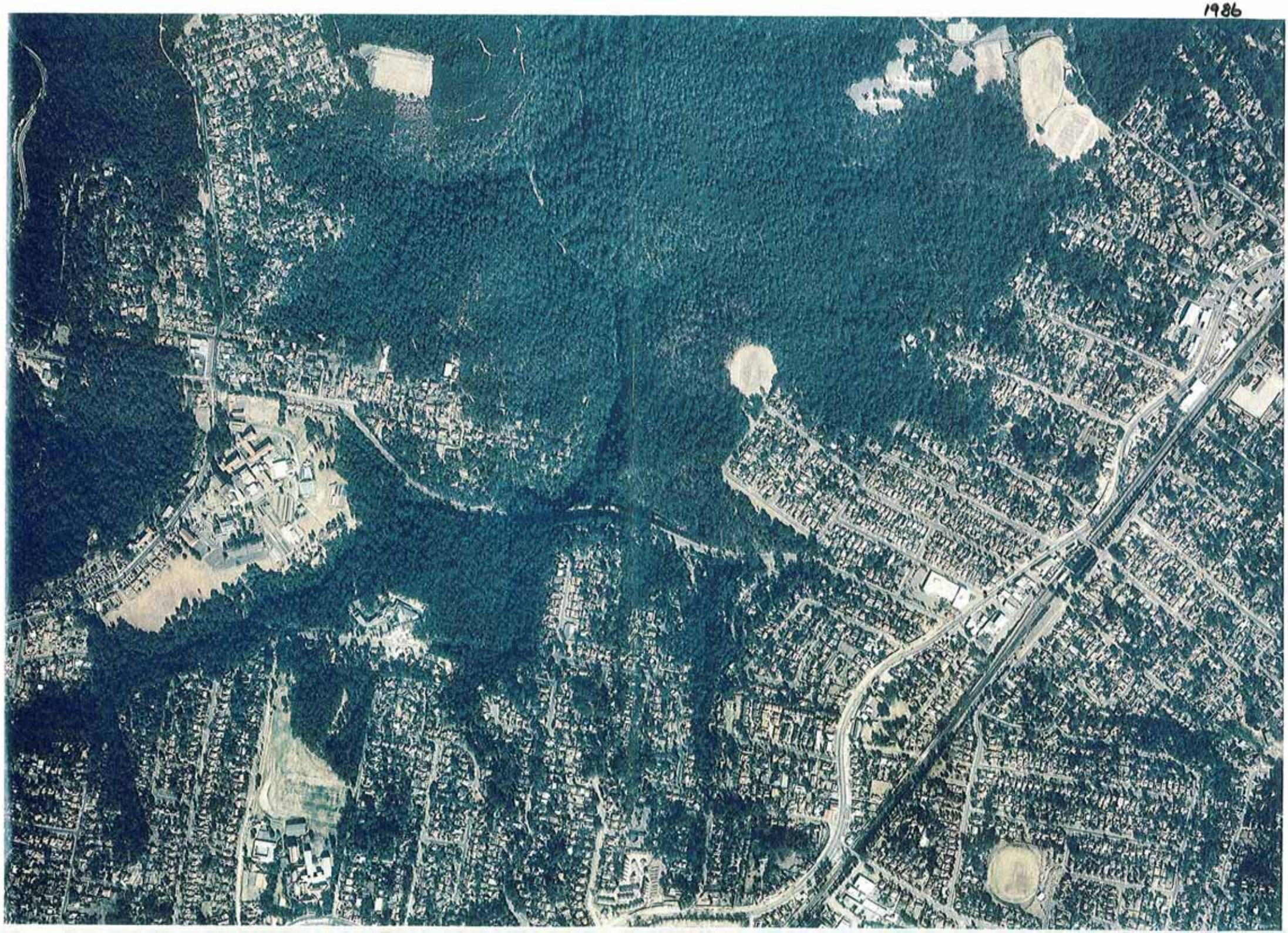
1961

1970

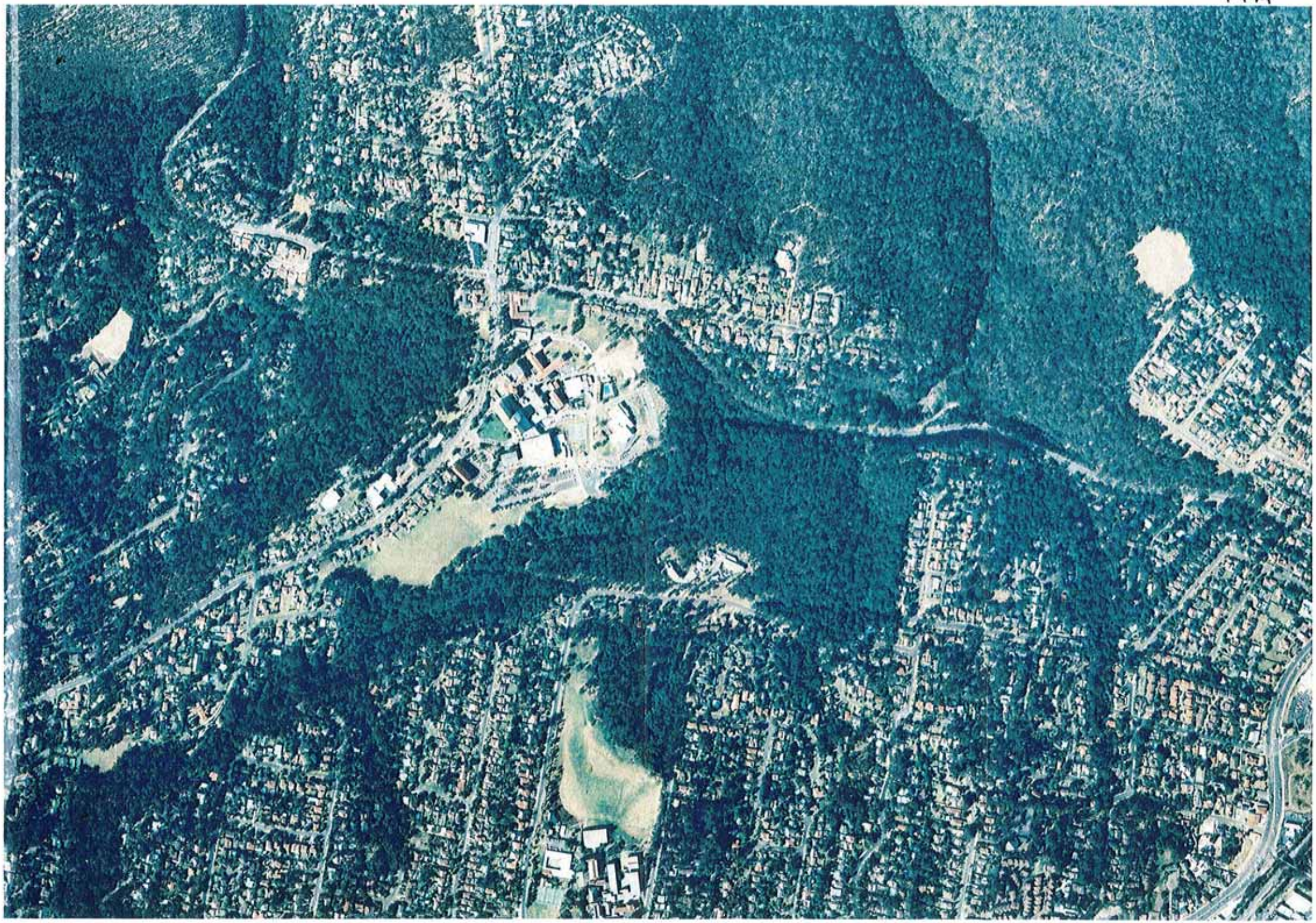


1978

1986



1994



2005

2005

Property Details

185 Fox Valley Road, WAHROONGA

Details

Property Number: 13005
Legal Description: Part Lot 52 DP 1017514
Land Number(s): 23966
Ward: CDP/ENMARRA
Property Name: Hospital S.D.A

Applications

CCPCA0426/07 - CC for DA 1185/06 issued by PCA Philip Chun & Associat...
PCDC0001/07 - CDC - Private Certifier *** PHILIP CHUN & ASSOCIATES - ..
CU98/00071 - SIGN APPLICATION
CU06/00717 - PROPOSED ENTRY CANOPY TO FOUNDATION COTTAGE SYDNEY ADVE...
CU96/00178 - INTERNAL ALTERATION TO PURCHASING OFFICE
CN98/00235 - OFFICE FITOUT AND ADDITIONS
CN97/00204 - INTERNAL FITOUT OF EXISTING BUILDING TO PROVIDE OFFICE ...
CN97/00107 - INTERNAL ALTERATIONS TO ENDOSCOPY UNIT OF SYDNEY ADVENT
CL97/00002 - ADDITIONAL CARPARKING FOR SYDNEY ADVENTIST HOSPITAL
CL96/00170 - INTERNAL ALTERATIONS & NEW DISABLED RAMP
CL95/00435 - ADDITION OF CHEMICAL TANK COMPOUND FOR LAUNDRY
BL98/00506 - ADDITIONS TO EXISTING OFFICE, STORES AREA
BL95/00739 - REFURBISHMENT OF EXISTING ENTRANCE TO INCLUDE AN AIRLOC ...
BL95/00589 - CENTRE FOR HEALTH MANAGEMENT
DA96/0509 - CARPORT AT SYDNEY ADVENTIST HOSPITAL
BE95/0625 - ADDITION OF A CANCER SUPPORT CENTRE
BE95/0570 - EMERGENCY CARE CIVIL WORKS
DE94/0830 - ALTERATION TO PLUMBER WSHOP
BE94/0172 - NURSES WORKSTATION IN WARD 7
BE94/0667 - ADDS & ALTS TO RADIATION ONCOLOGY DEPARTMENT
BE94/0299 - HOSPITAL ADDITIONS (MAJOR)
98/01030 - ROADWAY FOR LAUNDRY SERVICE
98/00900 - INTERNAL ALTERATIONS
97/01641A - JACARANDA LODGE - STAGE 2 AMENDMENT
97/01641 - JACARANDA LODGE - STAGE 2
96/01852 - INTERNAL ALTERATIONS AT LEVEL SIX
96/01378 - INSTITUTIONAL ADDITIONS AND ALTERATIONS
96/01348 - ADDITIONAL CARPARKING
95/01327 - CONVERSION OF EXISTING STORE LOWER GROUND FLOOR
95/01012 - RELOCATION OF MEDICAL RECORDS DEPARTMENT
95/00011 - ADDITIONS & ALTERATIONS TO EMERGENCY CARE UNIT
93/01134 - EARLY STAGE APPLICATION
93/01198 - INTERNAL ALTERATIONS
93/01188 - PROPOSED STORE ROOM FIFTH FLOOR
93/00785 - PROPOSED MAMMOGRAPHY SCREENING UNIT
93/00955 - ALTERATIONS TO HOSPITAL DAY SURGERY CENTRE
93/00934 - ADDITIONS AND ALTERATIONS TO DWELLING IN HOSPITAL GROUN...
93/00238 - PROPOSED INTERNAL ADDITIONS AND ALTERATIONS
92/00865 - ALTERATIONS MEDICAL AND DENTAL CENTRE
92/00766 - ADDITIONS AND ALTERATIONS TO THEATRE 8
91/02278 - CARPARK
C6/00407/C2 - PCA CC for DA953/06 INTERNAL ADDS & ALTS TO HOSPITAL ...
99/01039/FP - ALTERATION TO LEVEL 4 - MAIN BUILDING - FOR OFFICE AND...
99/00809/C - ALTERATIONS TO EXISTING OFFICE FITOUT ON LEVEL 6 IN MAI...
99/00071/FD - FITOUT OF EXISTING SPACE ON LEVEL 3 FOR MAGNET RESONANC...
96/01750/FP - REMODELLING OF PURCHASING DEPOT INTO MINDRY AND STORES BU...
96/01367/FP - LAUNDRY,MEZZANINE TO OFFICE SPACE.
96/01278/FP - INTERNAL ALTERATIONS
C6/01006/C1 - CC FOR DA 1099/06
C6/00011/C2 - PCA CC FOR DA 1225/05 GREENFIELD ACCREDITED CERTIF NEW ....
C6/00334/C2 - CC FOR DA 1338/04
C4/00044/C2 - CICERT FOR FOURTH & FINAL STAGE
C3/01244/C1 - CICERT FOR DA628/03 AS PER ARRANGEMENT WITH STEVE MURR...
03/C0786/C2 - PCA CC FOR DA 457/03
03/C0704/C2 - PCA FOR DA 181/01 & 164/02
03/00441/C2 - PCA CC FOR DA 1035/02
03/00418/C2 - PCA CONS CERT FOR DA1357/02
02/01495/C2 - PCA BCA LOGIC PTY LTD CC FOR DA 926/02
02/01104/C2 - PCO FOR DA 381/01
02/0974/C2 - cc by pcp
02/0756/C2 - PCO FOR DA 481/01 STAGE 3
02/0611/C2 - PCO FOR DA 546/01
02/0527/C2 - PCO FOR DA 481/01
02/0525/C2 - PCO FOR DA 402/01
02/0226/C2 - PCO FOR DA 481/01
01/01487/C2 - PCA FOR DA 402/01
01/01487/C2 - cc by pc
01/01212/C2 - PRIVATE PCO FOR DA 492/01
01/01167/C1 - CHILD CARE CENTRE & CARPARK
01/00856/C2 - PCO FOR DA 381/01

01/00686/C2 - PCC FOR DA 646/01
DO/01095/FP - ALTERATIONS TO CARPARK
DO/00840/FP - RELOCATE ULTRASOUND FACILITY
DO/00809/FP - ALTERATIONS TO KITCHEN
00/00697/FP - PRE-FABRICATED STAFF BUILDING
00/00686/FP - REFURBISH NUCLEAR MEDICINE DEPARTMENT
00/00334/FP - REFURBISH AN EXISTING BRICK STORAGE SPACE AS A BIO-MEDI...
00/00332/FP - REFURBISH A EXISTING SPACE ON LEVEL 3 OF THE CLIN CAL S...
80/05/CZ/ - cdc by pca
79/05/CZ/ - Internal office fitout
78/05/CZ/ - cdc by pca
76/03/CZ/ - NEW SUITES LEVELS 3,5 & 6 OF NEW MEDICAL CENTRE
75/03/CZ/ - NEW SUITES, LEVELS 5 & 6 - NEW MEDICAL CENTRE
74/03/CZ/ - PCA COMPLYING DEVELOPMENT - NEW SUITES WITHIN LEVELS 3 ...
68/05/CZ/ - PCA CDC FOR INTERNAL COMMERCIAL ALTS (SUITE 206) - PHL...
59/06/CZ/ - COMPLYING DEVELOPMENT FROM PCA INTERNAL OFFICE FITOUT T ...
55/04/CZ/ - internal fitout of medical suites
53/03/CZ/ - INTERNAL FITOUT OF MEDICAL SUITES - LEVEL 3,5 & 6
43/06/CZ/ - Anniversary Celebrations Food Stalls etc
15/06/CZ/ - INTERNAL OFFICE FITOUT TO MEDICAL SUITE
93/90/DP - INTERNAL ALTERATIONS TO TOWER LEVEL 6 AND EXTENSION TO ...
92/02/DT - ADDITIONS AND ALTERATIONS TO APPROVED CHILD CARE CENTRE...
093/99/DO - ALTERATIONS TO EXISTING OFFICE FITOUT ON LEVEL 6 IN MAIN...
805/98/TP - REMODELLING OF PURCHASING DEPOT IN LAUNDRY AND STORES BU...
77/99/DO - FITOUT OF EXISTING SPACE ON LEVEL 3 FOR MAGNET RESONANC
708/03/DP - ADDITIONS AND ALTERATIONS TO HOSPITAL
703/01/DPA - CHILDCARE CENTRE AND CARPARK - AMENDED PLANS
703/01/DP - CHILDCARE CENTRE AND CARPARK
667/00/DP - PRE-FABRICATED STAFF BUILDING
660/00/DO - REFURBISH NUCLEAR MEDICINE DEPARTMENT
646/01/DP - REFURBISH WARDS
583/98 - ROADWAY FOR LAUNDRY SERVICE
585/98 - INTERNAL ALTERATIONS
560/98 - ADDITIONS TO EXISTING OFFICE, STORES AREA
570/02/DP - DEMOLISH SHEDS & FUEL AREA ESTABLISH BUILDERS COMPOUND . ..
569/98 - OFFICE FITOUT AND ADDITIONS
564/98 - SIGN APPLICATION
554/97A - JACARANDA LODGE - STAGE 2 AMENDMENT
554/97 - JACARANDA LODGE - STAGE 2
543/98/DP - NEW MULTI LEVEL CAR PARK STRUCTURE AND ADDITIONAL ON- C.
539/97 - ADDITIONAL CARPARKING FOR SYDNEY ADVENTIST HOSPITAL
528/03/DP - ERECT A FREESTANDING SIGN & A WALL MOUNTED SIGN TO THE ...
527/97 - INTERNAL FITOUT OF EXISTING BUILDING TO PROVIDE OFFICE .
524/97 - INTERNAL ALTERATIONS TO ENDOSCOPY UNIT OF SYDNEY ADVENT ..
521/96 - INTERNAL ALTERATIONS AT LEVEL 5X
510/96 - INSTITUTIONAL ADDITIONS AND ALTERATIONS
496/96 - INTERNAL ALTERATIONS & NEW DISABLED RAMP
483/96 - PROPOSED ENTRY CANOPY TO FOUNDATION COTTAGE SYDNEY ADVE...
482/01/DPA - CARPARKING - AMEND DRIVEWAY
482/01/DP - CARPARKING
461/96 - INTERNAL ALTERATION TO PURCHASING OFFICE
387/01/DPA - MEDICAL CENTRE - AMENDED PLANS
401/01/DP - DEMOLITION THEN BUILD NEW MEDICAL CENTRE
407/95 - RELOCATION OF MEDICAL RECORDS DEPARTMENT
452/03/DO - FITOUT EXISTING SPACE FOR NEW COFFEE SHOP
417/95 - ADDITION OF CHEMICAL TANK COMPOUND FOR LAUNDRY
439/94 - NEW EMERGENCY UNIT & RELOCATE HEALTH MANAGEMENT CTRE IR...
434/94 - CONSTRUCTION OF A CANCER SUPPORT CENTRE
410/94 - ALTS TO PLUMBERS WORKSHOP TO CREATE A STORAGE AREA IM...
405/94 - ON SITE DISPOSAL OF EXCAVATED MATERIAL (MG) (C)
404/90/DP - LAUNDRY MEZZANINE TO OFFICE SPACE.
402/01/DP - REFURBISH WARD LEVELS 7-10
398/04 - INCORPORATE SCHOOL OF NURSING, LECTURE THEATRE & HOSP L...
388/93 - ADDS TO ONCOLOGY UNIT & NEW CARPARK (C) (MS)
388/00/DP - REFURBISH AN EXISTING BRICK STORAGE SPACE AS A BIO-MEDI. ..
384/00/DP - REFURBISH A EXISTING SPACE ON LEVEL 3 OF THE CLINICAL S. ..
381/01/DP - COMMUNITY CENTRE
376/03 - NEW HOSPITAL WING (MS) (C)
354/93 - CHANGE OF USE FROM LDY IRONING ROOM TO OUTPATIENT DAY C...
311/98/DP - INTERNAL ALTERATIONS
291/01 - Alts & adds to create a new op-theatre, 2 nursing rooms ...
278/01 - Additions to Sydney Adventist Hosp - Lower ground & 1c ...
278/01 - Alterations to Sydney Advent Hosp - Lower ground level ...
231/00 - New building to house laundry facilities Comenarra Ward. ..
164/02/DP - MEDICAL CENTRE
1407/00/DP - ADDITIONS AND ALTERATIONS TO HOSPITAL LAUNDRY FACILITY
1357/02/DP - ADDITIONAL PEDESTRIAN LEVEL TO LINK FOOTBRIDGE
1336/04/DP - ADDITIONS AND ALTERATIONS - SUBSTATION ELECTRICAL UPGRA...
1257/05/DP - UPGRADE OF LAUNDRY STORES AND MORGUE
1225/05/DS - NEW VERGO_A
1215/00/DP - ALTERATIONS TO CARPARK
1105/06/DP - ADDITIONS & ALTERATIONS TO EXISTING DEVELOPMENT APPROVA...

1163/99/DP - ALTERATION TO LEVEL 4 - MAIN BUILDING - FOR OFFICE AND...
1003/06/DK - MINOR INTERNAL ALTERATIONS CHILD CARE CENTRE
1059/02/DP - TENANT FITOUT IN SPECIALIST MEDICAL CENTRE ON LEVEL 3
1056/00/DP - RELOCATE ULTRASOUND FACILITY
1055/00/DP - ALTERATIONS TO KITCHEN
54/97 - TELECOMMUNICATIONS FACILITY FOR OPTUS
50/96 - TELSTRA TELECOMMUNICATIONS FACILITY - CELLTEL FR MOBILE B
48/96 - VODAPHONE UPGRADING OF EXISTING TELECOMMUNICATIONS FACI
30/05/TT - ONCOLOGY UNIT- MODIFICATION OF CONDITIONS OF CONSENT -.
DA0083/08 - Commercial development (internal fitout level 1)
DA1185/06 - ALTERATIONS & ADDITIONS TO EXISTING HOSPITAL
DA1000/06 - ALTERATIONS TO EXISTING CHILD CARE CENTRE

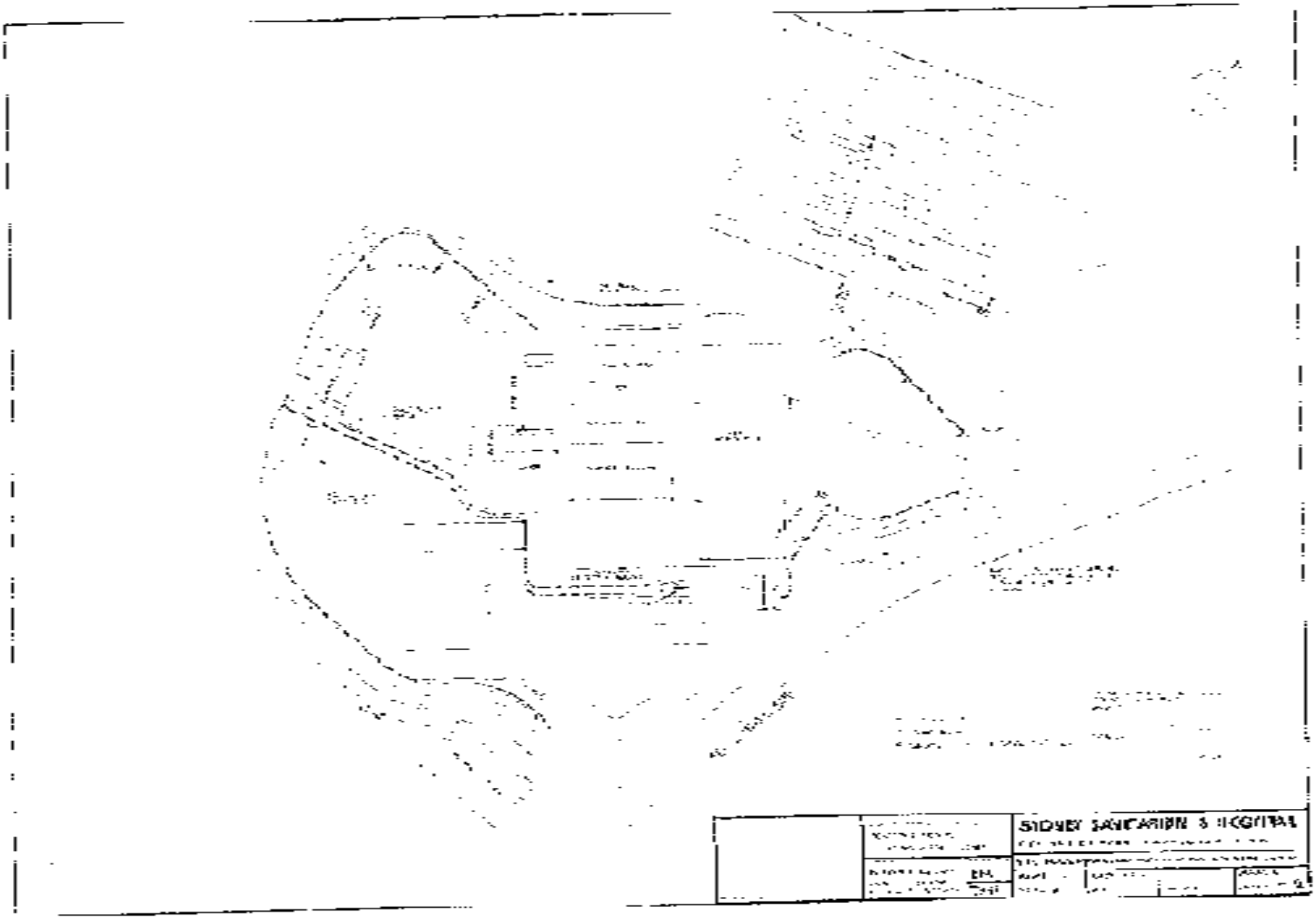
⊟ Valuations 01/07/2006 (Effective 01/01/2001) - $8060000

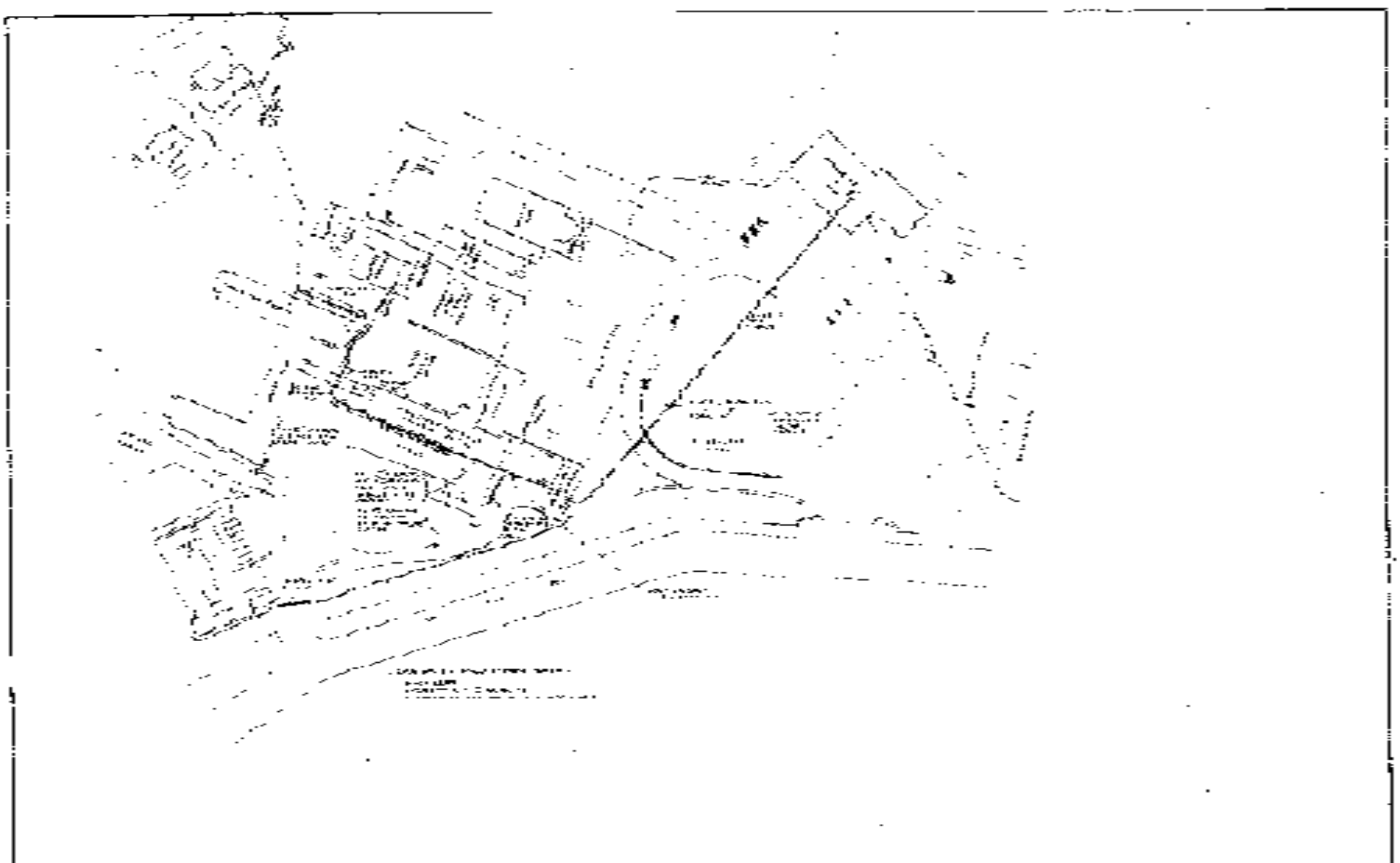
⊟ Attributes

Zoning
(ZSUSAHR6B) Zonesat - Part SU 5(a) (Hospital) & Part Recreation 6(b)
Property Attributes
(AdjoinLMU) Propadjlmu - This property adjoins a LMU
(DCPSPU) Propdcp - Development Control Plans
(eecogrf) Propeec - Blue Gum High Forest
(SEP2004EX) PROPEXCL - Excluded - SEPP (Housing for Seniors) 2004
(TAG2) PROPMUSC - Hospital
(SEP2004EX) Propsepp - Excluded from SEPP (Seniors Living) 2004
(SEPPOPS) Propsepps - State Environmental Planning Policies
(SREPSCH) Propsrep - SREP (Sydney Harbour Catchment) 2005
(SZSAHR6B) PropSzone - Split Zone Description
(ZSUSAHR6B) PropZsplit - Part SU 5(a) (Hospital) & Part Recreation 6(b)
(RatBusStd) RateQual - Business Rate - Standard
(RatSpltEnv) RateQual - Special Rate - Environmental Levy
(RatSpRinf) RateQual - Special Rate - Infrastructure Levy
(WstNonDom) RateQual - Non Domestic Charge
(Property | Val - Property Valuation Details
(due2) WasteZone - Tuesday Week 2
Land Attributes
(Ca01) Landline - Bush Fire Prone Land - Category A Buffer
(sepp4ex) Landsepp - SEPP No.53 - Dual Occupancy Exclusion
(SEPPeEX) LMNOSEPP - SEPP No 5 Exclusion Area

close all | open all

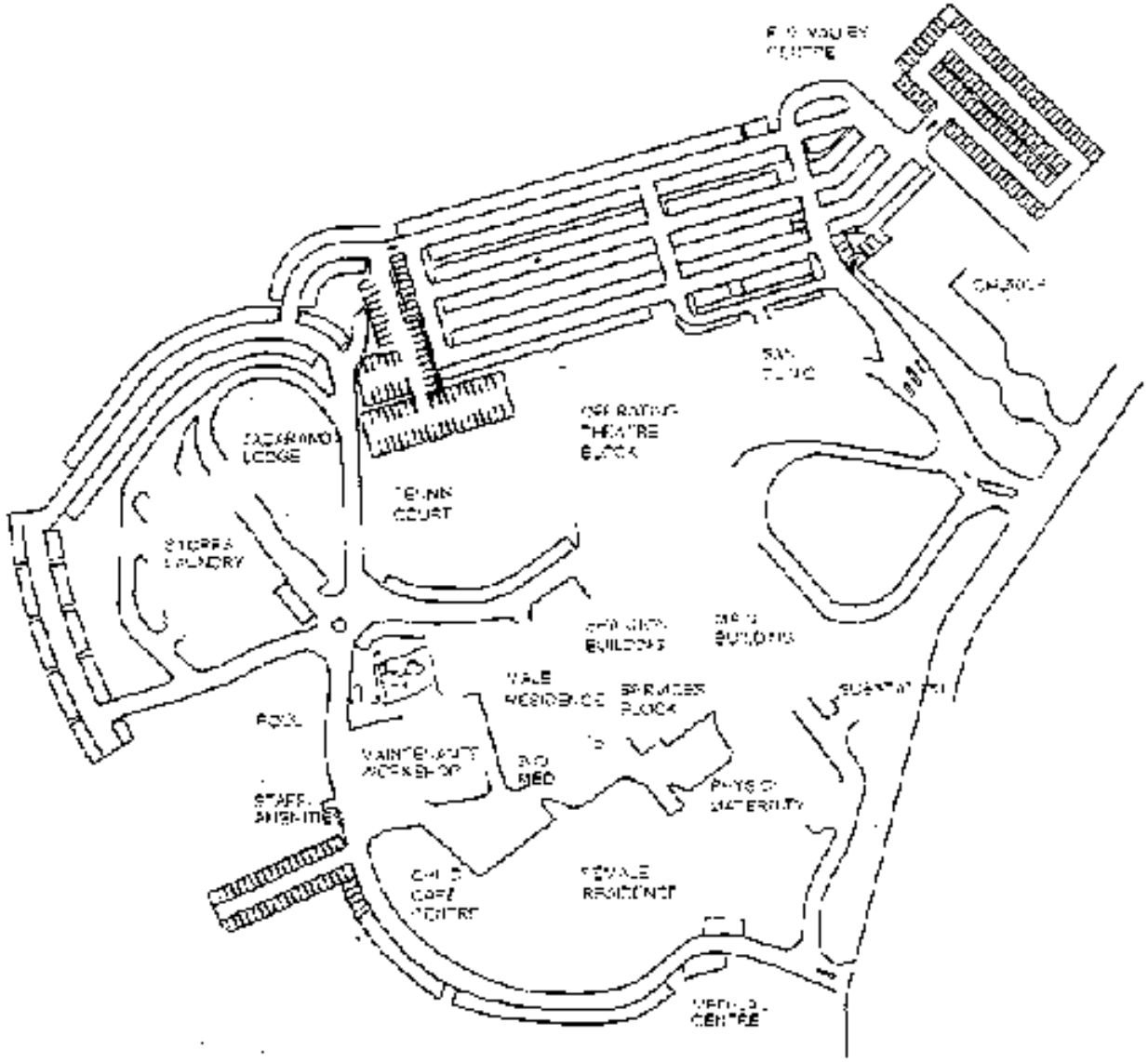
Provided by InfoMaster

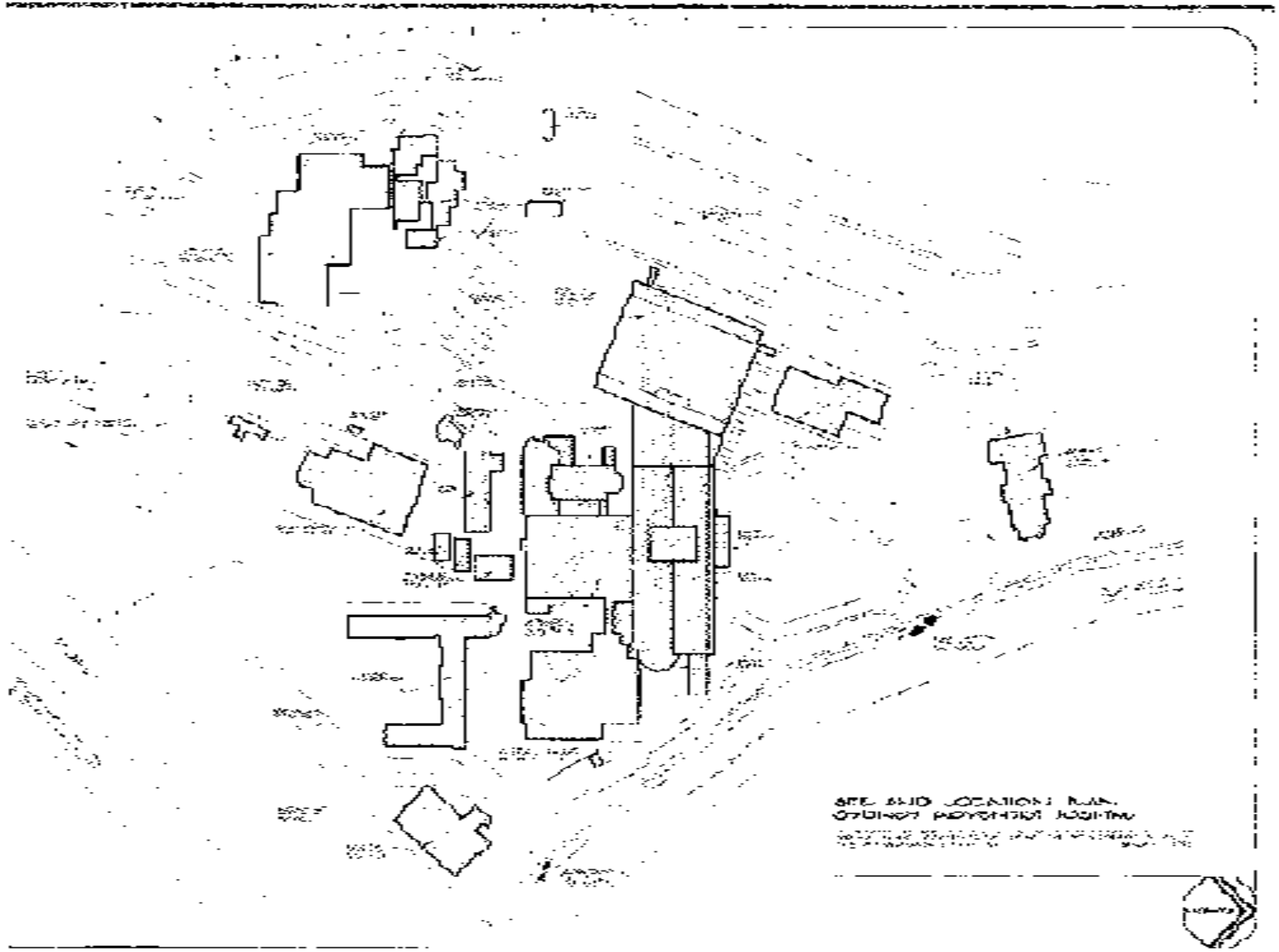

SIDNEY SANITARIUM & HOSPITAL

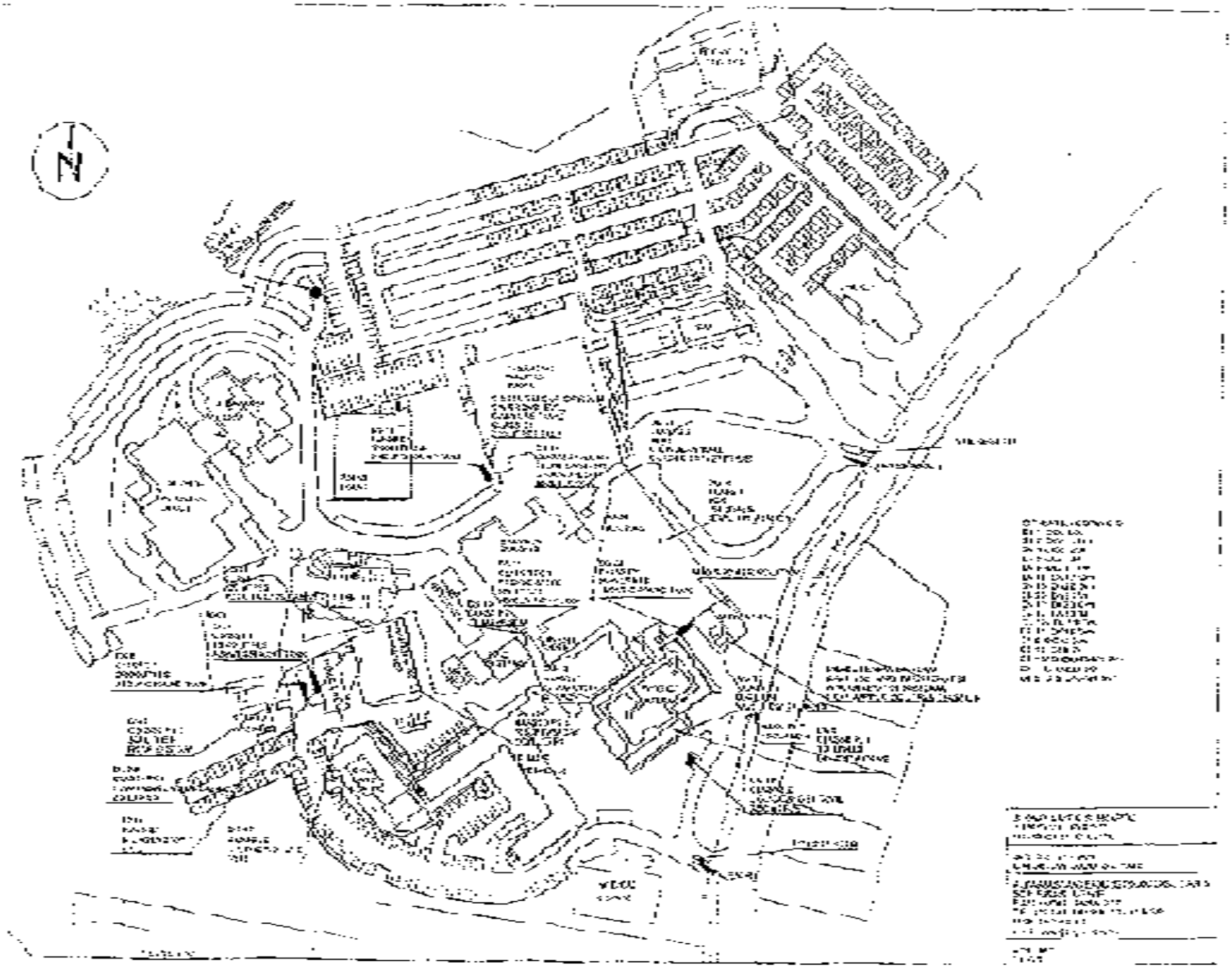


SYDNEY SANATORIUM & HOSPITAL.

5 years old


CHURCH
LODGE
TENNIS COURT
STORES
LAUNDRY
POOL
STAFF
BUILDINGS
BUILDINGS
VALE
RESIDENCE
SPRINGER
BLOCK
MAINTENANCE
WORKSHOP
BED
PHYSIO
MATERNITY
CHILD
CARE
CENTRE
FEMALE
RESIDENCE
CENTRE


SITE AND LOCATION PLAN
OSUNGO PRESENTATION JUNIOR



EPA

Print Close page

Search results

Your search for: LGA: Ku-ring-gai Council

Matched 16 notices relating to 3 sites.

Suburb	Address	Site Name	Notices related to this site
Killara	684-696 Pacific Highway	Area Adj to Former Caltex Service Station	13 current
Killara	692B-694 Pacific Highway	Former Caltex Service Station	1 current
St Ives	179-181 Mona Vale Road	Shell Service Station	1 current and 1 former

7 March 2008

EPA

Print Close page

Search results

Your search for: **Suburb** = Wahroonga

matched

1 licence (with applications or notices matching your search)

plus 2 notices (where no licence is available online. See 'eg.')

Document number	Name	Address	Status/Notice type
6546	SYDNEY ADVENTIST HOSPITAL LIMITED licence summary	185 FOX VALLEY ROAD WAHROONGA 2076	Issued
009971	HILLS TRUCKING & TRANSPORT PTY LTD notice summary	83 KENTORF STREET WAHROONGA 2076	S 58 Licence Variation
1030203	MITCHELL; INDI notice summary	139 LUCINDA AVENUE SOUTH WAHROONGA 2076	Approval under Control of Burning Reg

Page 1 of 1

7 March 2008

EPA

Print Close page

Licence summary

Your search for **Suburb** : Wahroonga

Summary of Licence No: 6546

Licence holder:	**SYDNEY ADVENTIST HOSPITAL LIMITED** **Trading as :** SYDNEY ADVENTIST HOSPITAL
Premises:	SYDNEY ADVENTIST HOSPITAL 185 FOX VALLEY ROAD WAHROONGA 2076 **LGA:** Ku-ring-gai **Catchment:** Hawkesbury
Administrative fee:	$1,520.00
Status of licence:	Issued
Licence type:	Premises
Activity type:	Waste Generation or Storage - Hazardous, Industrial or Group A
Licence review:	Completed 14 Feb 05

Applications

Number	Application type	Current status	Date received
140899	Licence Transfer	Approved	06 Nov 01

Notices

Number	Issue Date	Notice type
1047037	27 Apr 05	S 58 Licence Variation
1044478	15 Feb 05	S 58 Licence Variation

Annual Return Information

Start date	End date	Date received	Non-compliance	LBL data
01 Dec 06	30 Nov 07	29 Jan 08	No	n/a
01 Dec 05	30 Nov 06	22 Jan 07	No	n/a
01 Dec 04	30 Nov 05	24 Jan 06	No	n/a
01 Dec 03	30 Nov 04	23 Dec 04	No	n/a
01 Dec 02	30 Nov 03	12 Jan 04	No	n/a
01 Dec 01	30 Nov 02	17 Jan 03	No	n/a
01 Dec 00	30 Nov 01	29 Jan 02	No	n/a
01 Dec 99	30 Nov 00	15 Jan 01	No	n/a

7 March 2008

EPA

Print Close page

Application summary

Your search for: **Suburb** - Wahroonga

Summary of Application No: 140899

Applicant:	SYDNEY ADVENTIST HOSPITAL LIMITED **Trading as :** SYDNEY ADVENTIST HOSPITAL
Premises:	SYDNEY ADVENTIST HOSPITAL 185 FOX VALLEY ROAD WAHROONGA 2076 **LGA:** Ku-ring-gai **Catchment:** Hawkesbury
Status :	Approved
Application type:	Licence Transfer
Licence type:	Premises
Activity type:	Waste Generation or Storage - Hazardous, Industrial or Group A
Received:	06 Nov 01

Licences

Number	Licence type
6546	Premises

7 March 2008

Our Ref: D08/02172
Your Ref: David Deen

20 March 2008

Attention: David Deen
Coffey Environments
PO Box 346
UNANDERRA NSW 2526

Dear David,

RE SITE: 186 Fox Valley Rd, Wahroonga

I refer to your search request of 14th March 2008 requesting information on a Licence to Keep Dangerous Goods on the above site.

Enclosed are copies of the documents, which WorkCover holds on Dangerous Goods Licence **35/014066** relating to the storage of dangerous goods at the above-mentioned premises as listed on the Stored Chemical Information Database (SCID).

If you have any further queries, please contact WorkCover's Dangerous Goods Licensing staff on (02) 4321 5500.

Naomi James
A/Senior Licensing Officer
Dangerous Goods

337

SYDNEY
ADVENTIST
HOSPITAL

11th June 2004

Licensing Coordinator
Dangerous Goods Licensing
WorkCover
Locked Bag 2906
Lisarow NSW 2252

Dear Coordinator

RE: LICENSE NO. 35/014066

Changes in the last twelve months are:

Depot 3 and 4 no longer holds any chemicals due to the closure of our laundry late last year.

The chemicals were collected by the supplier on closure of the laundry.

Yours sincerely

Ian Thomson
Hospital Engineer

185 Fox Valley Road Wahroonga NSW 2076 Australia ▲ Phone +61 2 9487 9111 ▲ Fax +61 2 9487 9266 ▲ Website www.sah.org.au

( )

Licence No. 35/014066

APPLICATION FOR RENEWAL

OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

DECLARATION: Please renew licence number 35/014066 to 16/07/2005 . I confirm that all the licence details shown below are correct (amend if necessary).

(Signature) (Please print name) (Date signed)

for SYDNEY ADVENTIST HOSPITAL

THIS SIGNED DECLARATION SHOULD BE RETURNED TO:

WorkCover New South Wales
Dangerous Goods Licensing Section
LOCKED BAG 2006
LISAROW NSW 2252

Enquiries: ph (02) 43215500
fax (02) 92875500

Details of licence on 28 May 2004

Licence Number 35/014066 Expiry Date 16/07/2004

Licensee SYDNEY ADVENTIST HOSPITAL

Postal Address: 185 FOX VALLEY RD WAHROONGA NSW 2076

Licensee Contact IAN THOMSON Ph. 02 9487 9070 Fax 02 9489 7715

Premises Licensed to Keep Dangerous Goods
SYDNEY ADVENTIST HOSPITAL
185 FOX VALLEY RD WAHROONGA 2076

Nature of Site HOSPITALS (EXCEPT PSYCHIATRIC HOSPITALS)

Major Supplier of Dangerous Goods UNKNOWN OR OTHER

Emergency Contact for this Site SECURITY SERVICE Ph. 02 9487 9111

Site staffing 24 HRS 7 DAYS

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot		Qty
1	EXEMPT - A/G TANK	Class 2.2	12500 L	
	UN 1073 OXYGEN, REFRIGERATED LIQUID		10000 L	
10	EXEMPT - A/G TANK	Class 2.2	2500 L	
	UN 1073 OXYGEN, REFRIGERATED LIQUID		2000 L	
11	ROOFED STORE	Class 3	500 L	
	UN 1170 ETHANOL (ETHYL ALCOHOL)			300 L
12	EXEMPT - STORAGE AREA	Class 2.1	120 KG	
	UN 1075 PETROLEUM GASES, LIQUEFIED		80 KG	
13	EXEMPT - STORAGE AREA	Class 2.2	7 M3	
	UN 1046 HELIUM, COMPRESSED			6 M3
14	EXEMPT - STORAGE AREA	Class 2.2	500 M3	
	UN 1002 AIR, COMPRESSED			150 M3
	UN 1013 CARBON DIOXIDE			120 M3
	UN 1046 HELIUM, COMPRESSED			6 M3
	UN 1066 NITROGEN, COMPRESSED			20 M3
	UN 1070 NITROUS OXIDE		140 M3	
	UN 1072 OXYGEN, COMPRESSED			20 M3
15	EXEMPT - U/G TANK	Class C1	12000 L	
	UN 0001 DIESEL		10000 L	

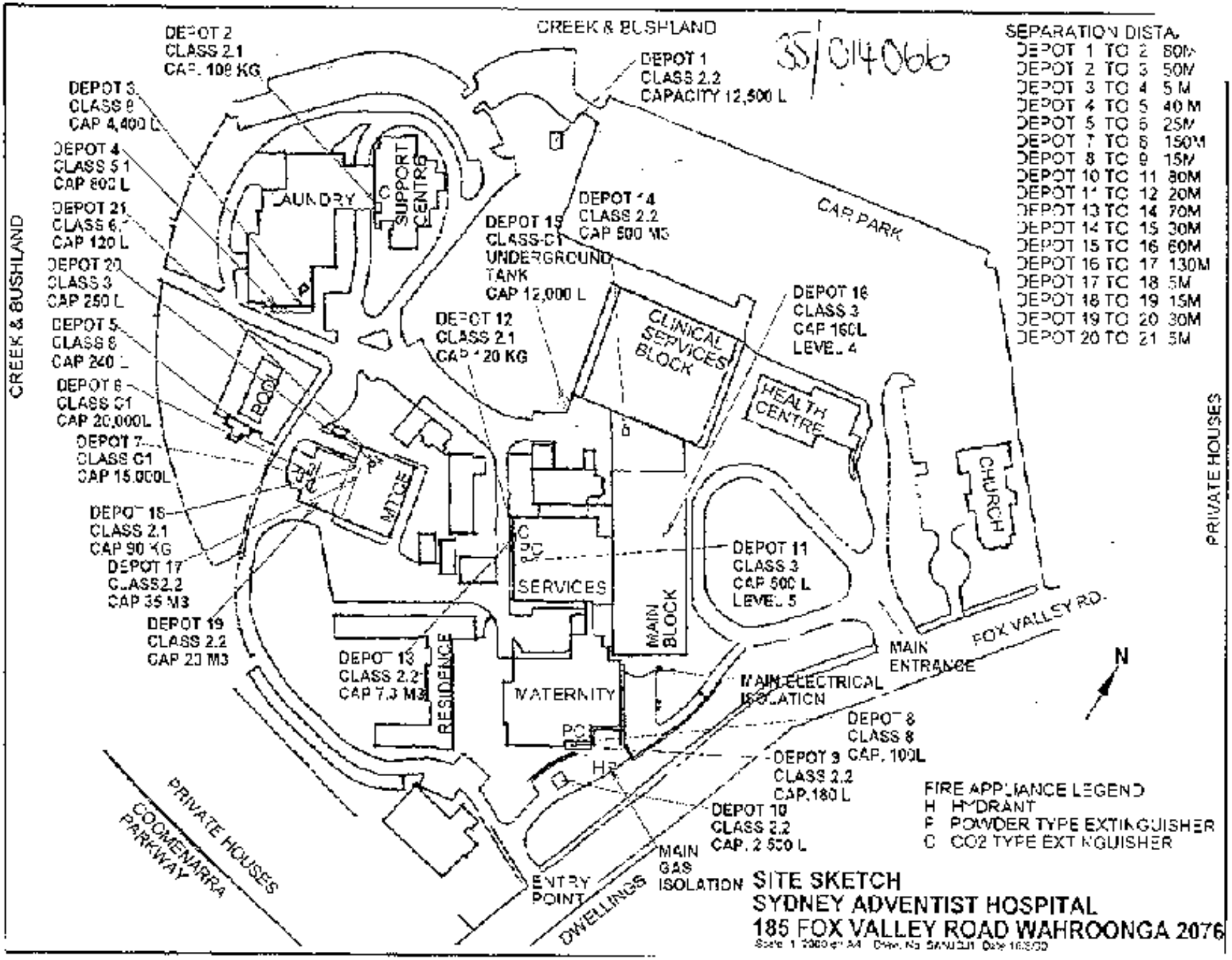
Licence: No. 35/014066

APPLICATION FOR RENEWAL

OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

	UN 1170 ETHANOL (ETHYL ALCOHOL)			100 L
17	EXEMPT - STORAGE AREA	Class 2.2	35 M3	
	UN 1013 CARBON DIOXIDE			15 KG
	UN 1072 OXYGEN, COMPRESSED			20 M3
18	EXEMPT - STORAGE AREA	Class 2.1	90 KG	
	UN 1075 PETROLEUM GASES, LIQUEFIED		60 KG	
19	EXEMPT - STORAGE AREA	Class 2.2	20 M3	
	UN 1006 ARGON, COMPRESSED			20 M3
2	EXEMPT - STORAGE AREA	Class 2.1	108 KG	
	UN 1075 PETROLEUM GASES, LIQUEFIED		70 KG	
20	FLAMMABLE LIQUIDS CABINET	Class 3	250 L	
	UN 1203 MOTOR SPIRIT		100 L	
21	TOXICS CABINET	Class 6.1	120 L	
	UN 3010 COPPER BASED PESTICIDE, LIQUID, TOXIC			5 L
	UN 3017 ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FL			5 L
	UN 3017 ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FL			20 L
	UN 3017 ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FL			10 L
	UN 3017 ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FL			5 L
3	ABOVE-GROUND TANK	Class 8	4400 L	
	UN 1719 CAUSTIC ALKALI LIQUID, N.O.S.		2000 L	
	UN 1791 HYPOCHLORITE SOLUTION			1500 L
4	ABOVE-GROUND TANK	Class 5.1	800 L	
	UN 2014 HYDROGEN PEROXIDE, AQUEOUS SOLUTION			600 L
5	EXEMPT - STORAGE AREA	Class 8	240 L	
	UN 1789 HYDROCHLORIC ACID			30 L
	UN 1791 HYPOCHLORITE SOLUTION			160 L
6	EXEMPT - A/G TANK	Class C1	20000 L	
	UN 00C1 HEATING OIL		7000 L	
7	EXEMPT - A/G TANK	Class C1	15000 L	
	UN 00C1 HEATING OIL		5000 L	
8	EXEMPT - A/G TANK	Class 8	100 L	
	UN 1791 HYPOCHLORITE SOLUTION			70 L
9	EXEMPT - A/G TANK	Class 2.2	180 L	
	UN 1013 CARBON DIOXIDE			100 L


CREEK & BUSHLAND
35/014066
DEPOT 2
CLASS 2.1
CAP. 100 KG
DEPOT 1
CLASS 2.2
CAPACITY 12,500 L
DEPOT 3
CLASS 8
CAP 4,400 L
DEPOT 4
CLASS 5.1
CAP 800 L
DEPOT 21
CLASS 6.1
CAP 120 L
DEPOT 20
CLASS 3
CAP 250 L
DEPOT 5
CLASS 8
CAP 240 L
DEPOT 6
CLASS C1
CAP 20,000L
DEPOT 7
CLASS C1
CAP 15,000L
DEPOT 18
CLASS 2.1
CAP 90 KG
DEPOT 17
CLASS 2.2
CAP 35 M3
DEPOT 19
CLASS 2.2
CAP 20 M3
DEPOT 13
CLASS 2.2
CAP 7.3 M3
DEPOT 14
CLASS 2.2
CAP 500 M3
DEPOT 15
CLASS C1
UNDERGROUND
TANK
CAP 12,000 L
DEPOT 12
CLASS 2.1
CAP 120 KG
DEPOT 16
CLASS 3
CAP 160L
LEVEL 4
DEPOT 11
CLASS 3
CAP 500 L
LEVEL 5
DEPOT 8
CLASS 8
CAP. 100L
DEPOT 9
CLASS 2.2
CAP.180 L
DEPOT 10
CLASS 2.2
CAP. 2 500 L
SEPARATION DISTA
DEPOT 1 TO 2 80M
DEPOT 2 TO 3 50M
DEPOT 3 TO 4 5 M
DEPOT 4 TO 5 40 M
DEPOT 5 TO 6 25M
DEPOT 7 TO 8 150M
DEPOT 8 TO 9 15M
DEPOT 10 TO 11 80M
DEPOT 11 TO 12 20M
DEPOT 13 TO 14 70M
DEPOT 14 TO 15 30M
DEPOT 15 TO 16 60M
DEPOT 16 TO 17 130M
DEPOT 17 TO 18 5M
DEPOT 18 TO 19 15M
DEPOT 19 TO 20 30M
DEPOT 20 TO 21 5M
LAUNDRY
SUPPORT CENTRE
BOCH
WTCE
SERVICES
MATERNITY
RESIDENCE
MAIN BLOCK
CLINICAL SERVICES BLOCK
HEALTH CENTRE
CHURCH
CAR PARK
MAIN ENTRANCE
MAIN ELECTRICAL ISOLATION
MAIN GAS ISOLATION
ENTRY POINT
FOX VALLEY RD.
PRIVATE HOUSES
COOMENARRA PARKWAY
DWELLINGS
N
FIRE APPLIANCE LEGEND
H HYDRANT
F POWDER TYPE EXTINGUISHER
C CO2 TYPE EXTINGUISHER
SITE SKETCH
SYDNEY ADVENTIST HOSPITAL
185 FOX VALLEY ROAD WAHROONGA 2076

Dangerous Goods Depots

Sydney Adventist Hospital. 185 Fox Valley Road, Wahroonga 2076

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
1	Above Ground Tank	2.2		12,500 L		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
1073	Oxygen	2.2		Liquid Oxygen-Medical	10,000	L

EXEMPT DEPOT. FOR SCID PURPOSES ONLY Yard located at north east of Jacaranda Lodge.

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
2	Cylinder Store	2.1		108 Kg		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
1075	Propane	2.1		LP Gas	70	Kg

EXEMPT DEPOT. FOR SCID PURPOSES ONLY. Located on the east side of laundry store.

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
3	Above Ground Tank	8		4,400 L		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
1719	Sodium Hydroxide Solution	8	II	Control Conquer	2,000	L
1791	Hypochlorite Solution	8	II	Dairy - Chlor	1,500	L

Located on the south side of the laundry.

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
4	Above Ground Tank	5.1		600 L		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
2014	Hydrogen Peroxide	5.1	II	Interox 50 T	600	L

Located on the south side of the laundry.

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
5	Roofed Store	8		240 L		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
1791	Sodium Hypochlorite	8	II	Liquid Chlorine	180	L
1789	Hydrochloric Acid	8	II	Hydrochloric Pool Acid	30	L

EXEMPT DEPOT. FOR SCID PURPOSES ONLY Located south of the staff swimming pool.

Dangerous Goods Depots

Sydney Adventist Hospital. 185 Fox Valley Road, Wahroonga 2076

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
6	Above Ground Tank	C1		20,000 L		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
	Boiler Oil	C1		Fuel Oil	7,000	L

EXEMPT DEPOT FOR SCID PURPOSES ONLY Located west of the boilerhouse.

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
7	Above Ground Tank	C1		15,000 L		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
	Oil	C1		Oil	5,000	L

EXEMPT DEPOT FOR SCID PURPOSES ONLY Located west of the boiler house.

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
8	Above Ground Tank	8		100 L		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
1791	Sodium Hypochlorite	8	II	Liquid Chlorine	70	L

EXEMPT DEPOT. FOR SCID PURPOSES ONLY. Located in basement of maternity building.

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
9	Above Ground Tank	2.2		180 L		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
1013	Carbon Dioxide	2.2		Liquid Carbon Dioxide-CO2 Gasmatic	100	L

EXEMPT DEPOT. FOR SCID PURPOSES ONLY Located in basement of maternity building

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
10	Above Ground Tank	2.2		2,500 L		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
1073	Oxygen	2.2		Liquid Oxygen-Medical	2,000	L

EXEMPT DEPOT. FOR SCID PURPOSES ONLY. Located south east of maternity building.

Dangerous Goods Depots

Sydney Adventist Hospital. 185 Fox Valley Road, Wahroonga 2076

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
11	Roofed Store	3		500 L		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
1170	Ethanol	3	II	Ethanol	300	L

Located in Pathology Section, Level 5 Services Building

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
12	Cylinder Store	2.1		120 Kg		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
1075	Propane	2.1		LP Gas	80	Kg

EXEMPT DEPOT FOR SCID PURPOSES ONLY Located west side ground main building.

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
13	Cylinder Store	2.2		7.3 M3		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
1046	Helium	2.2		Helium	6	M3

EXEMPT DEPOT. FOR SCID PURPOSES ONLY. Located west side ground main building.

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
14	Cylinder Store	2.2		500 M3		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
1046	Helium	2.2		Helium	6	M3
1070	Nitrous Oxide	2.2		Nitrous Oxide-Medical Grade	140	M3
1066	Nitrogen	2.2		Nitrogen – Industrial	20	M3
1002	Medical Air	2.2		Medical Air- Dry	150	M3
1013	Carbon Dioxide	2.2		Carbon Dioxide	120	M3
1072	Oxygen	2.2		Medical Oxygen	20	M3
2156	Enterox	2.2		Enterox	3	M3

EXEMPT DEPOT. FOR SCID PURPOSE ONLY Located level 3 main building

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
15	Underground tank	C1		12,000 L		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
	Diesel	C1		Diesel	10,000	L

EXEMPT DEPOT.FOR SCID PUPOSES ONLY.Located west of main building.

Dangerous Goods Depots
Sydney Adventist Hospital. 185 Fox Valley Road, Wahroonga 2076

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
16	Flammable Liquids Cabinet	3		160 L		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
1170	Ethanol	3	II	Ethanol	100	L

Located in Pharmacy Section, level 4 main building

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
17	Cylinder Store	2.2		35 M3		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
1072	Oxygen	2.2		Oxygen	20	M3
1013	Carbon Dioxide	2.2		Carbon Dioxide	15	Kg

EXEMPT DEPOT FOR SCID PURPOSES ONLY. Located east of boiler house.

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
18	Cylinder Store	2.1		90 Kg		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
1075	Propane	2.1		Propane	60	Kg

EXEMPT DEPOT. FOR SCID PURPOSES ONLY. Located east of boiler house.

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
19	Cylinder Store	2.2		20 M3		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
~~1980~~ 1006	Argon	2.2		Argon	20	M3

EXEMPT DEPOT. FOR SCID PURPOSES ONLY. Located in workshop.

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
20	Flammable Liquids Cabinet	3		250 L		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
1203	Motor Spirit	3	II	Petrol	100	L

Located in Gardener's room, maintenance building.

Dangerous Goods Depots

Sydney Adventist Hospital. 185 Fox Valley Road, Wahroonga 2076

Depot Number	Type of Depot	Depot Class		Maximum Storage Capacity		
21	Toxic Liquids Cabinet	6.1		120 L		
UN Number	Proper Shipping Name	Class	PG	Product or Common Name	Typical Quantity	Unit
3017	Glyco- phosphate	6.1	III	Roundup	20	L
3017	Pesticide-Organo phosphorous.	6.1	III	Rogor	10	L
3010	Copper Oxychloride	6.1	II	Copper Oxychloride.	5	L
3017	Bromoxynil	6.1	III	Bindi Killer	5	L
3017	Pesticide Organo phosphorous.	6.1	III	Chloral Pyrophos.	5	L

Located in Gardeners room, maintenance building.

SYDNEY
ADVENTIST
HOSPITAL

[illegible]

185 Fox Valley Road
Wahroonga NSW 2076
Telephone: (02) 9487 9111
Facsimile: (02) 9487 9266
Website: www.sah.org.au

'Yours for Life.'

30 October 2000

Work cover Authority
400 Kent Street
Sydney N.S.W 2000

Licence No 15/14066

Dear Anne

I would like to give you a progress report on the storage of dangerous goods on our premises since your visit on Wednesday 19 July 2000.

I have consulted with Ian Thomson, Hospital Engineer to verify the following issues

1. A site survey has been undertaken by Graham Goodfellow, chemical materials consultant. A copy of this report has been forwarded to the Work cover office. This also included as site plan for our depot numbering, which has now been completed

2. The ventilation upgrade in the Pathology chemical store will be shortly completed

3. The hazardous goods cabinet in the Pharmacy department has been reallocated to a safe distance from any ignition sources

4. The fuel storage shed near the boiler has had a platform installed and external contractors will undertake the electrical upgrades. We are awaiting a decision relating to the removal of the decommissioned fuel tank

I hope this meets with your satisfaction

Yours faithfully

Sophie Robinson
OH&S Advisor

CC Terry McKay
CC Ian Thomson

35/014066
TM878

Chemical Management Unit
Phone (02) 9370 5204
Fax (02) 9370 6105

20 July 2000

Mr Ian Thompson
Sydney Adventist Hospital
185 Fox Valley Road
WAHROONGA NSW 2076

Dear Mr Thompson

RENEWAL OF LICENCE TO KEEP DANGEROUS GOODS,
No. 35/014066, SYDNEY ADVENTIST HOSPITAL, WAHROONGA

I am grateful for the assistance which you and Sophie Robinson provided to Anne Keniry and myself during our visit around various chemical storage and handling areas of the hospital on Wednesday 19 July 2000.

I refer to your letter of 3 July indicating that works to upgrade certain dangerous goods storage facilities at the site had been undertaken. We noted that action still needs to be taken to address several on-going matters, including measures to prevent people on the driveway near Casualty entrance, above the small diesel tank, from discarding cigarette butts around the tank.

During our visit, we also discussed the need to include other depots in your application for a licence to keep dangerous goods at that site. I am enclosing your recent DG1 application documents as a convenient reference for these adjustments (DG Licensing Unit have kept a copy).

Please note that depot plans, stamped as compliant by a WorkCover Accredited DG Consultant, will need to accompany applications for only those licensable depots not currently showing on Licence No. 35/014066, such as the large cryogenic Class 2.2 tanks and Class 3 depots of 250 l capacity and above (see page 4 of DG1 for exceptions).

A revised A4 site sketch for scanning into SCID will also need to be developed to show the location, depot numbers and other details of the licensed as well as the DG depots exempt from licensing (see page 3 of DG1). Applicable signage will need to be located at the entry to each depot.

The flammable gas cage beneath Pathology would be suitable for keeping several small gas cylinders of Class 2.1 (eg acetylene, hydrogen) which were observed at inappropriate locations around the site. Reviewing the overall inventory of laboratory supplies, gases and other cylinders will improve safety (and may also result in some financial savings as well). Your attention is also drawn to aspects of non-compliant

ventilation facilities in the Pathology laboratory storage room and proximity of ignition sources to a flammable liquids cabinet observed in Pharmacy.

I note also your comments in the above letter about the difficulty in locating documentation about the procedures which may have been used to decommission the underground petrol and diesel tanks shown on previous licence records at the old bowser installation. In view of the potentially lethal hazard for flammable vapour residues which may still exist in the remaining pipework and fittings, I strongly recommend that you engage the services of a qualified petroleum equipment installation/decommissioning company to not only dismantle and remove the remaining components but also to survey the condition of any tank residues. Their certificate of works and findings about tank status would satisfy the requirements of clause 143 of the Dangerous Goods (General) Regulation 1999 for abandonment of underground tanks.

You will also need to examine the underground diesel tank installed at the corner of the Operating Theatre block and ensure that it complies with AS1940-1993. Other items concerning security, compliance of electrical fittings / services and proposed additional "day tank" storage inside the bunded area of the boiler house diesel installation were discussed. I look forward to your early completion of these projects and your development of systems for on-going safe operational, inspection and auditing procedures for dangerous goods depots on site.

I request that these matters be attended to as a matter of urgency. Should you have further inquiries about other matters in connection with the above issues, I would be pleased to provide information and assistance if possible.

Yours sincerely

Terry McKay
Assistant Principal Inspector
Chemical Management

SYDNEY
ADVENTIST
HOSPITAL

[illegible]
[illegible]
ACN [illegible]

185 Fox Valley Road
Wahroonga NSW 2076
Telephone (02) 9487 9111
Facsimile (02) 9487 9266
Website www.sah.org.au

'Yours for Life.'

3rd July 2000.

Mr Terry McKay
Assistant Principal Inspector
Chemical Safety
For Chief Inspector of Dangerous Goods
WorkCover
GPO Box 5364
Sydney 2001

Dear Sir

Re: Your letter dated 27th January, 2000 07 03
(35/014066 TM 822)

Firstly I must apologise for the delay in responding to your letter

DIESEL STORAGE

The main diesel storage area has been cleaned up with signage on the tank applied.

Preparation should be completed in the next few weeks for storage of the small outdoor above ground diesel tank. This will be within the confines of the main storage bunding area

The bunding has been increased and signage applied to above ground tank north of the maternity wing

LP GAS

Power sources near the LP gas tanks has been relocated and tidied up

OTHER DANGEROUS GOODS ISSUES

It is most unfortunate that the correct procedure was not carried out in notification for de commissioning of the old underground tanks

I have been advised that the petrol tank was removed, with the diesel tank being filled with sand/soil but have no record or history written on this

Please find enclosed an updated site map with storage areas identified.

I have sent an application for licence to keep dangerous good with adjustments to Scientific Services Branch, Dangerous Goods Licensing.

Once gain I do apologise for this late response.

Yours sincerely

Ian Thomson
Hospital Engineer

5538.

WorkCover New South Wales, 400 Kent Street, Sydney 2000 Telephone 9370 5000 ALL MAIL TO G.P.O. BOX 5364 SYDNEY 2001

LICENCE NO 35/014066

APPLICATION FOR RENEWAL
OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

WORKCOVER NEW SOUTH WALES

DECLARATION: Please renew licence number 35/014066 to 18/07/2000. I confirm that all the licence details shown below are correct (amend if necessary).

R L Herbert ..... RONALD LESLIE HERBERT ..... 3/12/99 .....
(Signature) (Please print name) (Date signed)

for: AUSTRALASIAN CONFERENCE ASSOC LTD AS CORPORATE TRUSTEE FOR SYDNEY ADVENTIST HOSPITAL

THIS SIGNED DECLARATION SHOULD BE RETURNED TO:

WorkCover New South Wales
Dangerous Goods Licensing Section
GPO BOX 5364
SYDNEY 2001

Enquiries: ph (02) 9370 5187
fax (02) 9370 6105

Details of licence on 19 November 1999 ASSOCIATION LTD

Licence Number 35/014066 Expiry Date 18/07/1999

Licensee AUSTRALASIAN CONFERENCE ASSOC LTD ~~AS CORPORATE TRUSTEE FOR~~ ACN ~~058 030 010~~
SYDNEY ADVENTIST HOSPITAL 000 003930

Postal Address: SYDNEY ADVENTIST HOSPITAL 185 FOX VALLEY RD WAHROONGA NSW 2076

Licensee Contact ~~[illegible]~~/DOUG HITCHICK Ph. 9487 9070 Fax. 9489 7715

Premises licensed to Keep Dangerous Goods
~~AUSTRALASIAN CONFERENCE ASSOC LTD~~ SYDNEY ADVENTIST HOSPITAL
185 FOX VALLEY RD WAHROONGA 2076

Nature of Site HOSPITALS (EXCEPT PSYCHIATRIC HOSPITALS)

Major Supplier of Dangerous Goods NOT APPLICABLE

Emergency Contact for this Site SECURITY SERVICE (PAGE 033) Ph. 9487 9111

Site staffing 18 HRS 6 DAYS

RECEIVED 20 DEC 1999 SCIENTIFIC SERVICES

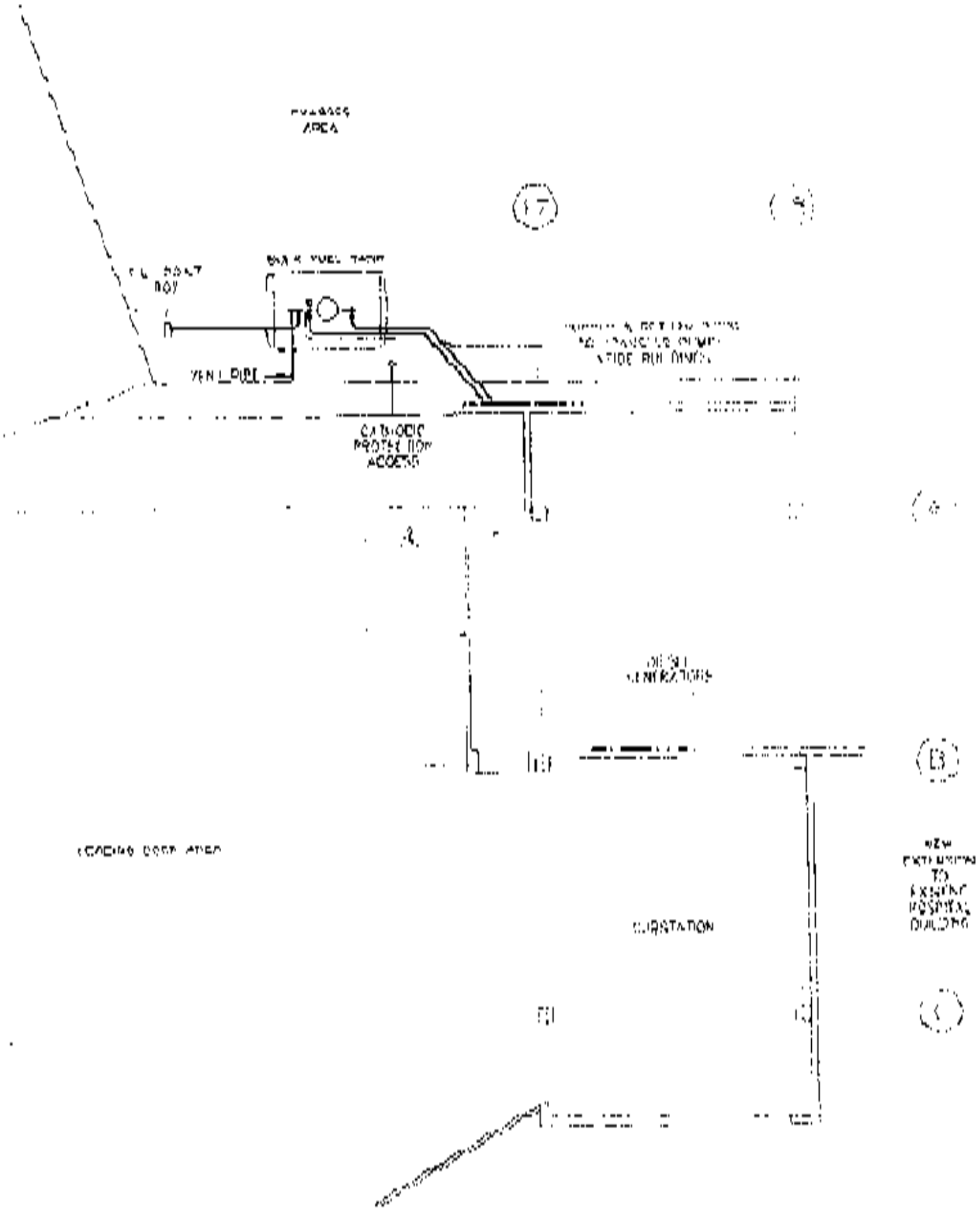
DATA 27 MAR 2000 ENTERED

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot	Qty
H1	ROOFED STORE	Class 3	
	UN 1170 ETHANOL (ETHYL ALCOHOL)		2000 L
LS1	ABOVE-GROUND TANK	Class 8	800 L
	UN 1719 CAUSTIC ALKALI LIQUID, N.O.S.		2580 L
LS2	ABOVE GROUND TANK	Class 8	2580 L
	UN 1791 HYPOCHLORITE SOLUTION		1500 L
LS3	ABOVE-GROUND TANK	Class 5.1	1500 L
	UN 2014 HYDROGEN PEROXIDE, AQUEOUS SOLUTION		800 L
			800 L

Changed 27.3.00 TC.

Form DG10



LOCATION DIAGRAM

ADVANCED POWER PRODUCTS (NSW) PTY LIMITED
33 Shepherd Street, Liverpool, NSW 2170
Telephone (02) 600 6555 Facsimile: (02) 821 1936
ACN 002 860 094

Australian Design Award 1988

April 4, 1995

Work Cover Authority,
Dangerous Goods Section,
Lot Bag 10,
Clarence Street Post Office,
SYDNEY NSW 2001

000633

RECEIVED
- 5 APR 1995
SCIENTIFIC SERVICES BRANCH

Attention : Mr. Phil Butt, Chief Inspector

Dear Sir,

RE: SYDNEY ADVENTIST HOSPITAL
185 FOX VALLEY ROAD, WAHROONGA.

We have been contracted to supply and install a Diesel Generator System at the above premises. Part of this system, is the installation of a 10,000 litre capacity inground bulk distillate fuel tank.

On behalf of the owners "Adventist Hospital" and the builder "Fletcher Constructions", we wish to submit an application for approval, to install an inground bulk fuel tank, as detailed on the enclosed drawing JE 346-09h.

The installation will comply with the requirements of AS 1940, as well as being provided with remote contents indication and cathodic protection of inground tank.

We trust the enclosed drawings contains sufficient information for your requirements. However, should you require any additional information, please advise the undersigned.

Thanking you for your assistance and advice,

Yours faithfully,
ADVANCED POWER PRODUCTS (NSW) PTY.LTD.

A.J. WALKER
ASST. GENERAL MANAGER

Please attach to 35/014066.
Thank you.
Amanda

Reference

WORKCOVER AUTHORITY

Dangerous Goods Section
Locked Mail Bag 2 P.O. ROSEBERY NSW 2018
Ph. (02) 287 6239 OR (02) 217 6237

Licensee

A'ASIA CONFERENCE ASSOC LTD

SYDNEY ADVENTIST HOSP 185"FOX VALLEY RD
WAHROONGA 2076

24 JUN 1991

DANGEROUS - 8 JUL 1991

Dear Sir/Madam,

RE APPLICATION FOR RENEWAL OF LICENCE FOR THE KEEPING OF DANGEROUS GOODS

Our records indicate you hold licence number 35/014066 for keeping dangerous goods at SYDNEY ADVENTIST HOSP 185 FOX VALLEY RD WAHROONGA 2076.

Details of depots at site.

Depot No.	Depot type	Goods stored in depot	Quantity kg/litres/no.
1	UNDERGROUND TANK	FLAMMABLE LIQUIDS	20 000
2	UNDERGROUND TANK	FLAMMABLE LIQUIDS	20 000
3	ABOVEGROUND TANK	POISONOUS/CRYOGENIC GASES	2 000
4	ROOFED STORE	FLAMMABLE LIQUIDS	1 000

This licence is now due for renewal. TO RENEW YOUR LICENCE. Please carefully check the details shown in this letter and make any required corrections. Then, SIGN and DATE the declaration below and return this letter to the WorkCover Authority, Dangerous Goods Section. Fees for these licences have been abolished. DO NOT SEND ANY MONIES.

Declaration: I wish to renew this licence to 15/07/92. I certify that the licence details shown in this letter are correct.

.....John Ledgerwood..... .....3/7/91.....
(Signature) (Date)

If you do not wish to renew the licence. Please provide the Dangerous Goods section with a signed statement giving the reason why it is not to be renewed. If you have sold/vacated the site please provide the name and address of the new owner/occupier so we may contact them.

Yours faithfully

Chief Inspector of Dangerous Goods.

Licences may take some time to be issued. Please DETACH THIS SECTION and keep it with your previous licence expiring in 1990 or 1991 as evidence that your site is licenced.

Licence number 35/014066 Expiry month: JULY

N.B.
Depots: No. 4
should be.
3 x 20,000 L
NOT 1000

WORKCOVER AUTHORITY

Chemical Safety Unit
Locked Bag 10, P O CLARENCE STREET NSW 2000
Ph. (02) 370 5191 OR (02) 370 5192
Fax (02) 370 5106

ASSOC LTD

OSP 185"FOX VALLEY RD"

15 JUN 1992

Dear Sir/Madam,

RE APPLICATION FOR RENEWAL OF LICENCE FOR THE KEEPING OF DANGEROUS GOODS

Our records indicate you hold licence number 35/014066 for keeping dangerous goods at SYDNEY ADVENTIST HOSP 185 FOX VALLEY RD WAHROONGA 2076.

Details of depots at site.

Depot No.	Depot type	Goods stored in depot	Quantity kg/litres/no.
1	UNDERGROUND TANK	FLAMMABLE LIQUIDS	20 000
2	UNDERGROUND TANK	FLAMMABLE LIQUIDS	20 000
3	ABOVEGROUND TANK	POISONOUS/CRYOGENIC GASES	2 000
4	ROOFED STORE	FLAMMABLE LIQUIDS	4 000
			62,000

This licence is now due for renewal. TO RENEW YOUR LICENCE. Please carefully check the details shown in this letter and make any required corrections. Then, SIGN and DATE the declaration below and return this letter to the WorkCover Authority, Chemical Safety Unit. Fees for these licences have been abolished. DO NOT SEND ANY MONIES.

Declaration: I wish to renew this licence to 16/07/93. I certify that the licence details shown in this letter are correct.

..... (Signature) ..... 29/6/92 (Date)

If you do not wish to renew the licence. Please provide the Chemical Safety Unit with a signed statement giving the reason why it is not to be renewed. If you have sold/vacated the site please provide the name and address of the new owner/occupier so we may contact them.

Yours faithfully

Chief Inspector of Dangerous Goods.

DEPARTMENT OF INDUSTRIAL RELATIONS

LICENCE No 35014066.5

DANGEROUS GOODS ACT, 1975

DG 8207 0001

APPLICATION FOR LICENCE (or AMENDMENT or TRANSFER of LICENCE) FOR THE KEEPING OF DANGEROUS GOODS

Application is hereby made for *a licence (or amendment of the licence) *the transfer of the licence for the keeping of dangerous goods in or on the premises described below.

(*delete whichever is not required)

FEE: $100.00 per Depot for new licence. $10.00 for amendment or transfer.

Name of Applicant in full (see over)	Australian Conference Association Limited
Trading name or occupier's name (if any)	Sydney Adventist Hospital
Postal address	
Address of the premises including street number (if any)	185 Fox Valley Road Wahroonga Postcode 2076
Nature of premises (see over)	Hospital
Telephone number of applicant	STD Code Number 487 9111

Particulars of type of depots and maximum quantities of dangerous goods to be kept at any one time.

Depot number	Type of depot (see over)	Storage capacity Litre	Dangerous goods: Product being stored DD	C&C Office use only
1	Underground Tank	15000	Class 3.1 Petrol	004 000 7
2	"	15000	" " "	2 020 24
3	Aboveground Tank	2172 m³	Class 2.2 Oxygen	1 040 21
4	Roofed Package Store (Shed)	1000	Class 3.1, 3.2	6 030 13
5				
6				
7				
8				
9				
10				
11				
12				

Has site plan been approved? Yes ~~No~~ If yes, no plans required. If no, please attach site plan.

Have premises previously been licensed? Yes ~~No~~ If yes, state name of previous occupier. As above

Name of company supplying flammable liquid (if any) Mobil

Signature of applicant ..... Date .....

For external explosives magazine(s), please fill in side 2.

HOSPITAL SECRETARY - LICENSEE

FOR OFFICE USE ONLY

CERTIFICATE OF INSPECTION

I, Colleen C Mackson being an Inspector under the Dangerous Goods Act, 1975, do hereby certify that the premises described above do comply with the requirements of the Dangerous Goods Act, 1975, and the Dangerous Goods Regulation with regard to their situation and construction for the keeping of dangerous goods of the nature and in the quantity specified.

LICENCE No. 35 014066 5

DANGEROUS GOODS ACT, 1975 DG -79 07

APPLICATION FOR LICENCE (or AMENDMENT or TRANSFER of LICENCE) FOR THE KEEPING OF DANGEROUS GOODS

Application is hereby made for—*a licence (or amendment of the licence) *the transfer of the licence for the keeping of dangerous goods on or on the premises described below.

(*delete whichever is not required)

FEE: $10.00 per Depot

7490 17/07/80 B34

Name of Applicant in full (see over)	AUSTRALIAN CONFERENCE ASSOCIATION LIMITED., Surname ..... Given Names .....
Trading name or occupier's name (if any)	SYDNEY ADVENTIST HOSPITAL
Postal address	Postcode
Telephone number of applicant	STD Code Number
Address of the premises in or on which the depot or depots are situated (including street number, if any)	185 Fox Valley Road, WAHROONGA Postcode 2076
Nature of premises (see over)	Hospital

PLEASE ATTACH SITE PLAN

Particulars of type of depots and maximum quantities of dangerous goods to be kept at any one time.

Dangerous goods DD 003 060

Depot number	Type of depot (see over)	Storage capacity	Product being stored	C & C Office use only
1	Underground Tank	15000 litre	Petrol .. Class 3.1	2 020 24
2	" "	15,000 "	" .. " "	2 020 24
3	Aboveground Tank	2172 m^3	Oxygen .. "	2.3.1 040 23
4				
5				
6				
7				
8				
9				
10				
11				
12				

Name of company supplying flammable liquid (if any) MOBIL

Have premises previously been licensed? YES

If known, state name of previous occupier as above Licence No 14066-07

SYDNEY ADVENTIST HOSPITAL

Signature of applicant ..... Date 1 JUL 1980

For external explosives magazine(s), please fill in side 2.

FOR OFFICE USE ONLY

INFLAMMABLE LIQUID ACT, 1915 (AS AMENDED)

Application for Registration of Premises or Store Licence under Division B or for the transfer alteration or amendment of any such Registration or Licence, for the keeping of Inflammable Liquid and/or Dangerous Goods, in accordance with the provisions of the Inflammable Liquid Act, 1915 (as amended), for the ensuing year.

(MERGE)

DIRECTIONS

1. Applications must be forwarded to the Chief Inspector of Inflammable Liquid, Explosives Department, Box R.216, Royal Exchange Sydney, N.S.W. 2000 and must be accompanied by the prescribed fee, as set out hereunder:

Registration of Premises (Fee $3.00 p.a.) – For quantities not exceeding 300 gallons of mineral oil and 100 gallons of mineral spirit, if kept together; or 800 gallons of mineral oil and 100 gallons of mineral spirit, if kept in separate depots; or 500 gallons of mineral spirit, if kept in an underground tank depot; or 800 gallons of mineral oil and 500 gallons of mineral spirit, if mineral spirit is kept in an underground tank depot.

In addition to, or in lieu of the above, similar quantities of Dangerous Goods of Classes 1 and 2 may be kept under the like conditions; reading Dangerous Goods of Class 1 for the words Mineral Spirit and Dangerous Goods of Class 2 for the words Mineral Oil.

Store License, Div. A (Fee, $6.50 p.a.) – For quantities in excess of those stated above, but not exceeding 4,000 gallons mineral oil and/or mineral spirit, and/or Dangerous Goods of Classes 1, 2 and 9.

Store License, Div. B (Fee, See Regulation 7) – For quantities exceeding 4,000 gallons of mineral spirit, and/or dangerous goods of Classes 1 and 2, and/or dangerous goods of Class 3.

For the keeping of Dangerous Goods of Classes 3 and/or 4. ($15.00 p.a.).

Fees for the keeping of inflammable liquid and dangerous goods in excess of the above stated quantities and also for Liquid Petroleum Gas storage are set out in Regulation 7.

Amendment attached
6-15-72

1. Name of occupier including full christian names	AUSTRALIAN CONFERENCE ASSOCIATION LIMITED
2. Trading Name (if any)	SYDNEY SANITARIUM HOSPITAL
3. Locality of the premises in which the depot or depots are situated	No. or Name 185 Street FOX VALLEY ROAD Town WAHROONGA
4. Postal address	c/o above Postcode 2076
5. Occupation	Hospital Hotel
6. Nature of premises (dwelling, garage etc.)	Hospital

7. Particulars of construction of depots and maximum quantities of inflammable liquid and/or Dangerous Goods to be kept at any one time.

PLEASE ATTACH PLAN OF PREMISES

Depot No.	Construction of depots*			Inflammable liquid		Dangerous goods					
	Walls	Roof	Floor	Mineral spirit gallons	Mineral oil gallons	Class 1 gallons	Class 2 gallons	Class 3 lb	Class 4 lb	Class 5A litres gal	Class 9 gallons
1	Underground Tank			3000							
2				3000							
3								Hosp.			
4										25	66
5											
6										2659	
7											
8											
9											
10											

* If product is kept in tanks describe depots as underground or aboveground tanks.

Signature of applicant

Date of application 4/7/71

CERTIFICATE OF INSPECTION

The Chief Inspector of Inflammable Liquids,
Box 48, G.P.O.,
Sydney.

INFLAMMABLE LIQUID ACT, 1915, AS AMENDED

CONTRACTOR'S CERTIFICATE

Underground Tanks

I hereby certify that the tank(s) as indicated below recently installed by me at the undermentioned premises have fill, dip and suction pipes as detailed hereunder.

Petroleum Company Mobil

Address of Premises Box Valley Rd.

Wahroonga

Name of Occupant Sydney Sanitarium Hospital

Capacity of each tank and distance in inches between bottom of tank and lower end of internal pipes.

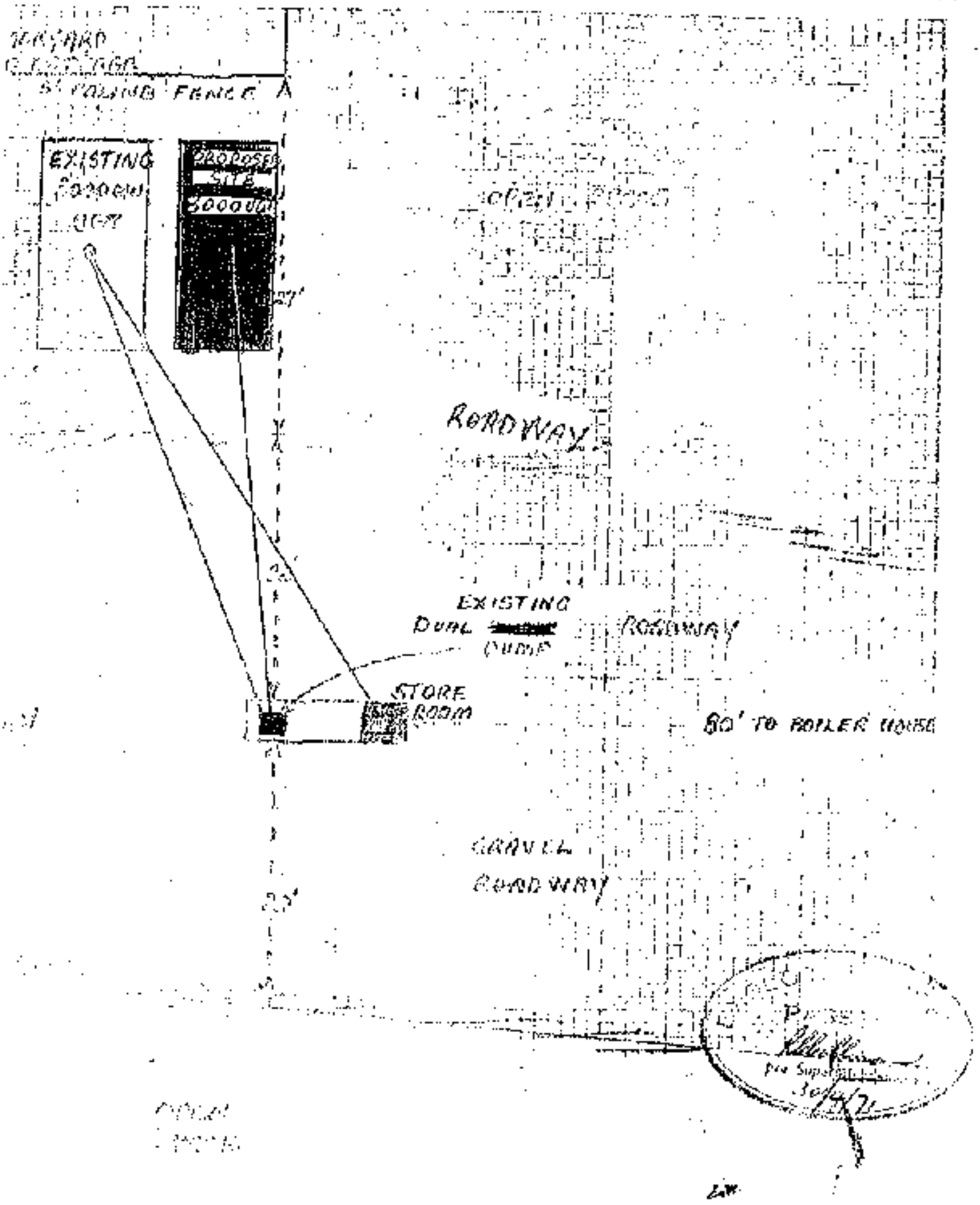
Capacity (Gallons)	Suction Pipe (Inches)	Fill Pipe (Inches)	Dip Pipe (Inches)
3000	4"	2"	2"

Signed [illegible]

Date 31 - 5 - 71

L 12519 W.C.M. Bright, Government Printer

REAR OF SANITARIUM HOSPITAL WAHROONGA.



AF 37
DRM 0 -
Page 1

Registor No. 1066.

INFLAMMABLE LIQUID ACT, 1915 (AS AMENDED)

pplication for Registration of Premises or Store Licence under Division A or for the transfer ctration or amendment of any such Registration or Licence, for the keeping of Inflammable Liquid and/or Dangerous Goods, in accordance with the provisions of the Inflammable Liquid Act, 1915 (as amended), for the ensuing year.

(MOBILE PLANT)

EXPLANATORY

lammable Liquid

Mineral Oil—includes kerosene, mineral turpentine and white spirit (for cleaning) and compositions containing same.

Mineral Spirit—includes petrol, benzene, benzotene, benzol and naphtha, and compositions containing same.

angerous Goods—

Class 1—acetal, acetaldehyde, acetone, acrolein, amyl mercaptan, butyl acetate, butyl mercaptan, butyl propionate, crotonaldehyde, dichloro-ethylene, diethylketone, dioxane, diethylamine, dimethyl hydrazine, dipropylamine, divinyl ether, dipropyl ether, ethyl acetate, ethyl acrylate, ethyl chloride, ethyl ether, dichloroethane (ethylene dichloride), ethyl mercaptan, ethyl methacrylate, ethyl methyl ether, ethyl propyl ether, ethyl propionate, methyl propyl ketone, methyl acetate, methyl acrylate, methylal, methyl ethyl ether, methyl ethyl ketone, methyl methacrylate, methyl vinyl ketone, methyl vinyl acetate, piperidine, propanal, propyl acetate, propylamine, propylene oxide, pyridine, tetrahydrofuran, thiophene, triethylamine, valeraldehyde, vinyl acetate, vinyl alkyl ether, vinyl butyl ether, vinyl butyrate, vinyl cyanide (acrylonitrile), vinylidene chloride, vinyl ethyl ether, vinyl propyl ether, vinyl propionate, any combination of substances of an inflammable character suitable for use as an industrial solvent and having a true flashing point of less than 73 degrees Fahrenheit manufactured products, containing organic solvents, having a true flashing point of less than 73 degrees Fahrenheit.

Class 2—acetic acid, acetyl acetone, acetic anhydride, allyl alcohol, amyl acetate, amyl alcohol, butyl alcohol, butyl methacrylate, chlorobenzene, cyclohexanone, dibutyl ether, dibutyl ketone, dipentene, epichlorohydrin, ethanol (ethyl alcohol), ethyl isoprene, ethylene diamine, furfural, mesityl oxide, methyl alcohol, methyl amyl ketone, methyl butyl ketone, pine oil (having a flashing point below 150° F), propyl benzene, propanol, rectified turpentine, vinyl benzene (styrene monomer), any liquid containing more than 50 per centum ethyl alcohol, manufactured products, containing organic solvents, having a true flashing point of 73 degrees Fahrenheit and above but not exceeding 150 degrees Fahrenheit.

Class 3—nitro cellulose moistened with an alcohol, nitro-cellulose product

New Licence issued 15-7-71

Class 4—compressed or dissolved acetylene contained in a porous substance.

Class 5 (A)—liquefied inflammable gases (liquefied petroleum gas), vinyl chloride, ethylene chloride, ethylene oxide, butadine, methylamine, dimethylamine, and trimethylamine).

Class 9—carbon, disulphide, ethyl nitrite

DIRECTIONS

Applications must be forwarded to the Chief Inspector of Inflammable Liquid, Explosives Department, Sydney, and must be accompanied by the prescribed fee, as set out in Regulation 7

1. Name of occupier including full Christian names: HOSPITALLERS CONFERENCE ASSOCIATION T/A "SYDNEY SANITARIUM" LTD & HOSPITAL

2. Occupation

3. Locality of the premises in which the depot or depots are situated — No. or Name: 155 Street: FOX VALLEY RD Town: WAHROONGA HOSPITAL Postcode:

4. Nature of premises (Dwelling, Garage, Store, etc.)

Particulars of construction of depots and maximum quantities of inflammable liquid and/or Dangerous Goods to be kept at any one time

PLEASE ATTACH PLAN OF PREMISES

Depot No.	Construction of depots* Walls	Roof	Floor	Inflammable Liquid Mineral Spirit gallons	Mineral Oil gallons	Dangerous goods Class 1 gallons	Class 2 gallons	Class 3 lb	Class 4 cu ft	Class 5A water gallons	Class 9 gallons
1	Underground Tank			3000							
2											
3											
4											
5											
6											
7											
8											
9											
10											

Cancelled 6/7/80.

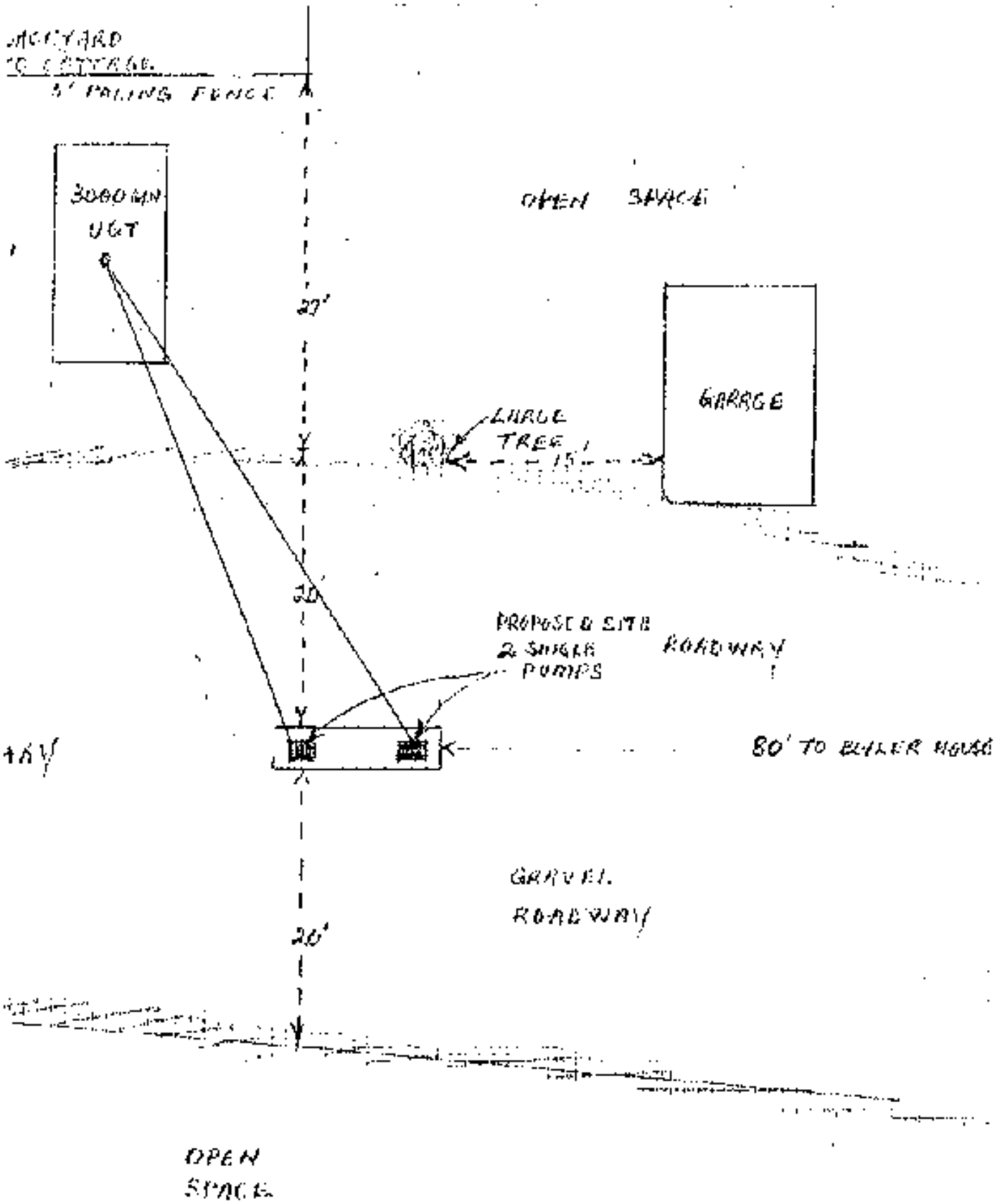
(Owner) Licence No. 4[illegible]

From Sydney Sanitarium & Hospital

* If product is kept in tanks describe depots as underground or aboveground tanks.

(A. G. LTD Inspectors)

REAR OF SANATORIUM HOSPITAL WARRAGUNGA

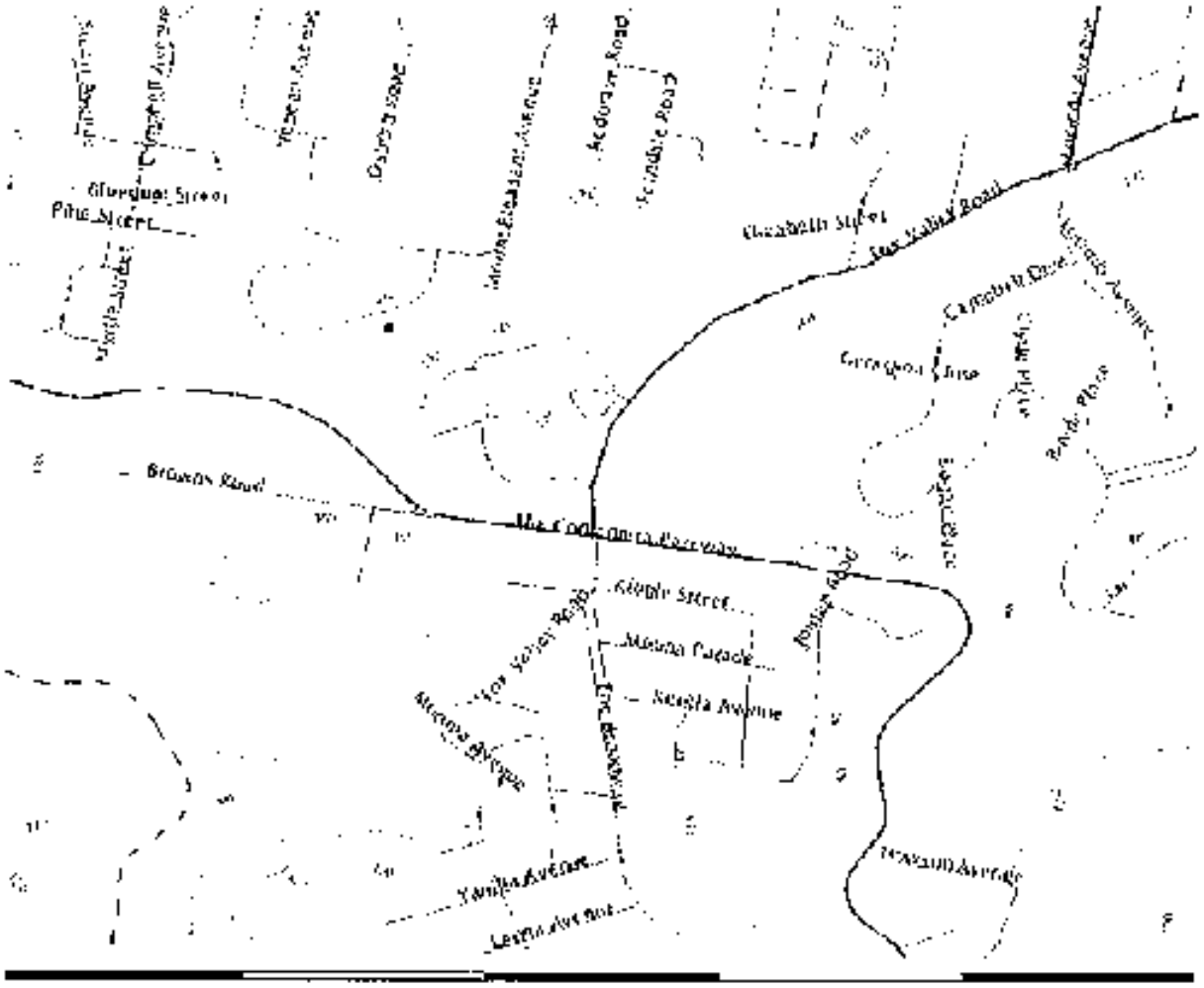


EXAMINED
PASSED

Groundwater Bore Search - SAN Hospital, 185 Fox Valley Road, Wahroonga

Map created with NSW GroundWater Works - http://mallas.nsw.gov.au

Friday, March 07, 2008



Legend

Symbol	Layer	Custodian
	Cities and large towns render image: Cannot build image from features	
	Populated places render image: Cannot build image from features	
	Towns	
	Groundwater Bores	
	Catchment Management Authority boundaries	
	Major rivers	

Primary/arterial road
Motorway/freeway
Railway
Railway
Contour
Backgroundcoal

Topographic base map

Copyright © 2008 New South Wales Government. Map has been compiled from various sources and may contain errors or omissions. No representation is made as to its accuracy or suitability

Groundwater Works Summary

For information on the meaning of fields please see Glossary
Document Generated on Friday, March 7, 2008

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW107929

Works Details (top)

GROUNDWATER NUMBER	GW107929
LIC-NUM	10BL165856
AUTHORISED-PURPOSES	RECREATION (GROUNDWATER)
INTENDED-PURPOSES	RECREATION (GROUNDWATER)
WORK-TYPE	Bore
WORK-STATUS	
CONSTRUCTION-METHOD	Rotary
OWNER-TYPE	
COMMENCE-DATE	
COMPLETION-DATE	2005-03-18
FINAL-DEPTH (metres)	180.00
DRILLED-DEPTH (metres)	180.00
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	AUSTRALASIAN CONFERENCE ASSOC.
GWMA	- CENTRAL WEST FRACTURED ROCKS
GW-ZONE	- MOOKI VALLEY (QUIRINDI - PINE RIDGE ROAD TO BREEZA) GROUNDWATER SOURCE
STANDING-WATER-LEVEL	50.00
SALINITY	1600.00
YIELD	0.10

Site Details (top)

REGION	10 SYDNEY SOUTH COAST
RIVER-BASIN	
AREA-DISTRICT	
CMA-MAP	
GRID-ZONE	
SCALE	
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6265035.00

EASTING	323621.00
LATITUDE	33 43' 55'
LONGITUDE	151 5' 46'
GS-MAP	
AMG-ZONE	56
COORD-SOURCE	
REMARK	

Form-A (top)

COUNTY	CUMBERLAND
PARISH	GORDON
PORTION-LOT-DP	62 1017514

Licensed (top)

COUNTY	CUMBERLAND
PARISH	GORDON
PORTION-LOT-DP	62 1017514

Construction (top)

Negative depths indicate Above Ground Level,H-Hole,P-Pipe OD-Outside Diameter; ID-Inside Diameter,C-Cement,SL-Slot Length,A-Aperture GS-Grain Size,Q-Quantity

HOLE-NO	PIPE-NO	COMPONENT-CODE	COMPONENT-TYPE	DEPTH-FROM (metres)	DEPTH-TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	2.50	206			Down Hole Hammer
1		Hole	Hole	2.50	180.00	162			Down Hole Hammer
1	1	Casing	Steel	0.50	5.50	162	152.4		C: -,1-5.5m; Driven into Hole
1	1	Casing	PVC Class 9	-0.50	23.50	140			Screwed and Glued, Suspended in Clamps

Water Bearing Zones (top)

FROM-DEPTH (metres)	TO-DEPTH (metres)	THICKNESS (metres)	ROCK-CAT-DESC	S-W-L	D-D-L	YIELD	TEST-HOLE-DEPTH (metres)	DURATION	SALINITY
73.00	74.50	1.50				0.15	78.00	0.25	1188.00
117.00	117.20	0.20		58.00		0.25	120.00	0.25	1715.00
133.00	135.00	2.00				0.25	150.00	0.25	1677.00
153.00	156.50	3.50				0.10	180.00	0.25	1800.00

Drillers Log (top)

FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	16.00	16.00	SANDSTONE L/B		
16.00	17.00	1.00	SANDSTONE,FRACTURED, SOFT		
17.00	35.00	18.00	SANDSTONE GREY		
35.00	35.50	0.50	SHALE		
35.50	73.00	37.50	SANDSTONE GREY		
73.00	74.50	1.50	SANDSTONE FINE QUARTZ		
74.50	83.00	8.50	SANDSTONE GREY		
83.00	88.00	5.00	SANDSTONE D/G		
88.00	92.00	4.00	SANDSTONE GREY		
92.00	92.50	0.50	SANDSTONE F/G		
92.50	117.00	24.50	SANDSTONE D/G		
117.00	117.20	0.20	SANDSTONE FRACTURED		
117.20	124.00	6.80	SANDSTONE GREY		
124.00	124.50	0.50	SANDSTONE F/G		
124.50	133.00	8.50	SANDSTONE GREY		
133.00	135.00	2.00	SANDSTONE / QUARTZ		
135.00	153.00	18.00	SANDSTONE GREY		
153.00	156.50	3.50	SANDSTOHNE FINE QUARTZ		
156.50	180.00	23.50	SANDSTONE GREY		

Warning To Clients. This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. This data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

Appendix B
Engineering Logs of Boreholes, with explanation notes

CONTAMINATION ASSESSMENT - SAN Hospital
185 Fox Valley Road, Wahroonga

coffey

Soil Description Explanation Sheet (1 of 2)

DEFINITION

In engineering terms soil is defined as any type of loose or partially cemented inorganic or organic material found on the ground. In practice, if the material can be excavated or disaggregated by hand in its field condition, it is generally described as a soil. Other materials are described using rock description terms.

CLASSIFICATION SYMBOL & SOIL NAME

Soils are described in accordance with the Unified Soil Classification (USC) as shown in the table on Sheet 2.

PARTICLE SIZE DESCRIPTIVE TERMS

NAME	SUBDIVISION	SIZE
Boulders		>200 mm
Cobbles		63 mm to 200 mm
Gravel	coarse	20 mm to 63 mm
	medium	6 mm to 20 mm
	fine	2.36 mm to 6 mm
Sand	coarse	600 mm to 2.36 mm
	medium	200 mm to 600 mm
	fine	75 mm to 200 mm

MOISTURE CONDITION

Dry	Looks and feels dry. Cohesive soil crumbles and is hard. Friable or powdery. Uncemented granular soil flows freely through hands.
Moist	Soil feels cool, looks dark and shows some cohesion. Cohesive soil can be moulded. Granular soil tends to cohere.
Wet	Soil feels cold and looks dark. Free water forms on hand when handled.

CONSISTENCY OF COHESIVE SOILS

TERM	UNDRAINED STRENGTH s_u (kPa)	FIELD GUIDE
Very Soft	<12	A finger can be pushed into the soil with little effort.
Soft	12 - 25	A finger can be pushed into the soil to about 25 mm depth.
Firm	25 - 50	The soil can be penetrated about 5 mm by thumb, but not penetrated.
Stiff	50 - 100	The surface of the soil can be indented with thumb but not penetrated.
Very Stiff	100 - 200	The surface of the soil can be marked but not penetrated by thumb pressure.
Hard	>200	The surface of the soil can be marked only with the fingernail.
Friable		Crumbles or powders when scraped by fingernail.

DENSITY OF GRANULAR SOILS

TERM	DENSITY INDEX (%)
Very loose	Less than 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	Greater than 85

MINOR COMPONENTS

TERM	ASSESSMENT GUIDE	PROPORTION OF MINOR COMPONENT IN
Trace of	Presence is confirmed by feeling or seeing soil properties. Does not influence engineering properties of primary component.	Coarse grained soils <5%. Fine grained soils <15%.
With some	Presence is easily identified by feeling or seeing soil properties. Influences engineering properties of primary component.	Coarse grained soils 5 - 12%. Fine grained soils 15 - 30%.

SOIL STRUCTURE

	ZONING	CEMENTING	
Layered	Contains layers of different colour or texture.	Weakly cemented.	Friable. Breaks down by hand or low pressure.
Fissured	Breaks along planes of weakness. Often coloured.	Moderately cemented.	Effort required to break down the soil by hand or low pressure.
Partings	Layers of weakness or different material.		

GEOLOGICAL ORIGIN

WEATHERED IN PLACE SOILS

Extremely weathered material	Structure and fabric of parent rock not visible.
Residual soil	Structure and fabric of parent rock not visible.

TRANSPORTED SOILS

Aeolian soil	Deposited by wind.
Alluvial soil	Deposited by streams and rivers.
Colluvial soil	Deposited on slopes in an unconsolidated state under gravity.
Fill	Man-made deposit. Properties may be significantly more variable between tested locations than naturally occurring soils.
Lacustrine soil	Deposited by lakes.
Marine soil	Deposited in ocean basins, bays, beaches and estuaries.

coffey

Rock Description Explanation Sheet (1 of 2)

The descriptive terms used by Coffey are given below. They are broadly consistent with Australian Standard AS 1726-1993

DEFINITIONS: Rock substance, defect and mass are defined as follows

Rock Substance In engineering terms rock substance is any material occurring as aggregate of minerals and organic matter that can be dislodged or remoulded by hand in air or water. Other material is described using descriptive terms. Firmly consolidated material, may be anisotropic or anisotropic.

Defect Defects only in intact rock in the context of a substance or substance.

Mass Any body of material which is not affected by physical defects. It can be set of one or more substances without defects, or one or more substances with one or more defects

SUBSTANCE DESCRIPTIVE TERMS:

ROCK NAME Simple rock names are based either on a precise geological class of rock.

PARTICLE SIZE Grain size terms for sandstones are:

Coarse grained	Mainly 0.6 mm to 2 mm
Medium grained	Mainly 0.2 mm to 0.6 mm
Fine grained	Mainly 0.06 mm (just visible) to 0.2 mm

FABRIC Terms for layering or penetrative fabric (eg. bedding, cleavage etc. here)

Massive	No layering or penetrative fabric.
Foliated	Layering or fabric, eg. schist, gneiss, foliated or jointed
Distinct	Layering or fabric is easily visible. Rock breaks more easily parallel to layering or fabric

CLASSIFICATION OF WEATHERING PRODUCTS

Term	Abbreviation	Definition
Residual Soil	RS	Soil derived from the weathering of rock; the mass structure and substance fabric are no longer evident. There is a large change in volume but it has not been significantly transported.
Extremely Weathered Material	XW	Material is weathered to such an extent that it has soil properties. It exhibits complete discoloration and the fabric is visible. Original rock fabric still visible.
Highly Weathered Rock	HW	Rock strength has been significantly reduced. The whole of the rock substance is affected, usually by iron staining or bleaching to the extent that the colour of the original rock is not easily recognised. Some minerals are decomposed or leached out. Porosity may be increased by leaching or may be decreased due to the deposition of secondary minerals.
Moderately Weathered Rock	MW	The whole of the rock substance is affected by discoloration, usually by iron staining or bleaching, to the extent that the colour of the original rock is no longer recognisable.
Slightly Weathered Rock	SW	Rock substance is affected by weathering to the extent that some of the minerals are altered to clays. Discoloration extends from fractures, usually by iron oxide, to the majority of the rock. The colour and texture of the fresh rock is recognisable. Strength properties are lower than those of the fresh rock substance.
Fresh Rock	FR	There is no visible sign of rock weathering.

Notes on Weathering:

1. AS 1726 suggests the terms Distinctly Weathered (DW) to cover the range of rock from slightly weathered to fresh rock, between SW and FR. For practical reasons this is not practical for most projects. DW is the equivalent of the Weathering Index (WI) of the Australian Standard 2870 and is used in the Australian Standard 2870.
2. Weathering classification is a subjective description based on colour and fabric. It is not based on the geological classification. The terms should not be used for weathering of specific minerals such as RA, RB, RC, SA and RB.

ROCK SUBSTANCE STRENGTH TERMS

Term	Abbreviation	Point Load Index I_{s50} (MPa)	Field Guide
Very Low	VL	Less than 0.1	Material crumbles under firm blows with sharp end of pick; can be peeled with a knife; pieces up to 30 mm thick can be broken by hand. Highly weathered material.
Low	L	0.1 to 0.3	Easily scored with a knife; indentations from firm blows with sharp end of pick penetrate 10 mm or more; can be broken by hand with difficulty. Shale, coal, or other rock may be brittle and break unexpectedly.
Medium	M	0.3 to 1.0	Readily scored with a knife; a piece of rock 150 mm long by 50 mm in width can be broken by hand with difficulty.
High	H	1 to 3	A piece of rock 150 mm long by 50 mm in width can be broken by hand only with a geological pick. Rock rings under hammer.
Very High	VH	3 to 10	Hand specimen breaks after more than one blow of a geological pick. Rock rings under hammer.
Extremely High	EH	More than 10	Specimen requires many blows with geological pick to break. Rock rings under hammer.

Notes on Rock Substance Strength:

1. Point load strength is defined as the point load index I_{s50} (MPa) determined from the diametral point load test. Strength properties may be anisotropic, especially in the weaker rock types.
2. Descriptive terms are based on the Australian Standard 1726-1993. The terms are based on a small sample range of the rock strength terms.
3. Point load strength is a useful strength test for rock materials such as sandstones, siltstones, shales, coals and tuffs. Typically, it is not suitable for very fine grained rock types. Lower strength results will be obtained from lower value loading directions.

coffey geotechnics

Engineering Log - Borehole

Borehole No	CBH1		
Sheet	1 of 3		
Project No	GEOTLCOV23462AA		
Client:	Taylor Thomson Whitting	Date started:	10.3.2008
Principal	Coffey Projects	Date completed	10.3.2008
Project	185 FOX VALLEY ROAD, SAN HOSPITAL, WAHROONGA	Logged by	JA
Borehole Location	Building 3	Checked by	SH

drilling information | material substance

method	penetration	support	water	notes samples tests etc	RL	graphic log	material description	moisture condition	consistency density index	penetrometer kPa	structure and additional observations
ADV							FILL: CLAYEY SAND: Medium grained, brown to pale brown, low plasticity clay	D			FCL
				B1	158						
				SPT 7,2,5 N=7	157		FILL: CLAY: Medium plasticity, grey	dWp			
					156						
				SPT 2,3,2 N=5	155		FILL: CLAY: Low to medium plasticity, brown mottled orange and grey sandstone				
					154			dWp			
ADT					153		SANDSTONE: Fine grained, pale orange				Weathered 3.5m SANDSTONE
					152		Borehole CBH1 backfilled on completion				
					151						
					150						
					149						

notes, samples, tests
- U50 undisturbed sample 50mm diameter
- U75 undisturbed sample 75mm diameter
- D disturbed sample
- SPT standard penetration test (SPT)
- PP pocket penetrometer
- PP1 pocket penetrometer
- V vane shear (kPa)
- P piston sample
- PS piston sample
- E environmental sample
- R refusal

classification symbols and soil description
based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency/density index
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

coffey geotechnics

Engineering Log - Cored Borehole

Client:	Taylor Thomson Whitting	Borehole No	CBH1
Principal	Coffey Projects	Sheet	2 of 3
Project	185 FOX VALLEY ROAD, SAN HOSPITAL, WAHROONGA	Project No:	GEOTLCOV23462AA
Borehole Location:	Building 3	Date started	10.3.2008
		Date completed	10.3.2008
		Logged by	JA
		Checked by	SH

drill material drilling: Mode DH D80 | Easting: 320700.0 | Slope: 90° | R.L. Surface: 156.59
hole diameter: 100 mm Drilling Co. | Northing: 6266992.0 | bearing: | datum: AHD

drilling information | material substance | rock mass defects

Continuation from cored borehole

SANDSTONE: Fine grained quartz, yellow brown orange, moderately to distinctly laminated 22°

SANDSTONE: Medium grained, pale grey, indistinctly to centimetre bedded 0° 22°

BEDDING: 0.5mm

- SM, PL, SO, 2mm clay in CLAY
- SM, PL, SO, 4mm clay INT
- SM, PL, SO, 6 4mm clay INT
- PT, PL, RD, 5° VIV
- SM, PL, SO, 3, 2mm clay VM
- JT, PL, SO, 35°, CO
- 5°, 30°, PL, RD, ROOTLETS
- PT, 22°, PL, RD, SANDY CLAY, 1MM
- PT, 22°, PL, RD, SANDY CLAY, 1MM
- PT, 22°, PL, RD, SANDY CLAY, 1MM
- JT, 30°, RD, RU, CO

method: DT, AS, AD, RR, CR, DIT, RCD, RCT
core: core recovery; graphic symbols; no core material; no core recovery
water: 1.5 hour water level; water seep; water flow; water loss; partial drill fluid loss; complete drill fluid loss; water pressure test; slugged hole; water flow
weathering: fresh, DEGREE WEATHERING 3, extremely weathered, highly weathered, moderately weathered, slightly weathered, fresh
strength: VL very low, L low, M medium, H high, VH very high, EH extremely high
defect type: JT joint, PT fault, SZ shear, SS shear/fault zone, CS crushed zone
roughness: VM very rough, RG rough, SM smooth, S slickensided
planarity: PL planar, CU curved, UN undulating, ST stepped, IR irregular
opening: CL closed, OP open, VN vein, CO coated

coffey geotechnics

Engineering Log - Cored Borehole

Client	Taylor Thomson Whitting	Borehole No.	CBH1
Principal	Coffey Projects	Sheet	3 of 3
Project	185 FOX VALLEY ROAD, SAN HOSPITAL, WAHROONGA	Project No.	GEOTLCOV23462AA
Borehole Location	Building 3	Date started	10.3.2008
		Date completed	10.3.2008
		Logged by	JA
		Checked by	SH

Northing: 6251880 Easting: 320902.6 Surface RL: 155.593

drilling information | material substance | rock mass defects

Penetration	Support	Water	Loss	Depth (metres)	Graphic Log	Material: and type, grain characteristics, colour, structure, moisture, consistency	Weathering	Defect spacing (mm)	Strength MPa	Defect description: dip, orientation, roughness, infill, thickness
			148	9		Interbedded siltstone and sandstone	SW		D A 0.58 0.62	P3, 32°, PL, RO, CN
			147							P1, 15°, IR, RO, CN; P1, 50°, IR, RO, CN; P1, 0°, IR, RO, CN; SM, 90°, UN, RO, CO
				10		0.90 - 10.17m: as seen in core tray	RW		C A 1.04 0.53	
			146			SANDSTONE: fine to medium grained, orange to pale grey, thin to medium bedded, moderately to distantly bedded at 22°			D A 0.96 0.00	SM 0°, PL, SO, CLAY, BRAN; SM 0°, PL, SO, CLAY, BRAN; SM 0°, PL, SO, CLAY, BRAN; VT, 20°, PL, SO, CLAY, BRN; VT, 30°, PL, NO, CLAY & IRON STAINING @ Seals
				11						
			145						D A 0.84 0.40	PT, 80°, PL, SO, CLAY, BRN
				12						PT, 30°, IR, RO, CO, IRON, BRN
						CD-11 completed at 12.14m				
			144	13						
			143							
				14						
			142							
				15						
			141							
				16						

CORED BOREHOLE 23462AA.GPJ COFFEY.GDT 12/3/08

Method: DT Diatube; AB Tungsten drilling; AD Auger drilling; RB Rotary blade; BR Blade/roller bit; RNMC Rock mud core; NQ, HQ, PQ Wireline core

Core Air: Drilling mud; Barrel diagram; Graphic logging legend: Drilling mud, Barrel diagram, No drilling mud

Water: SWL water level on date shown; Water inflow; Partial loss of water; Complete loss of water; Water pressure (kPa) in piezometer or open hole

Weathering: DR Fresh; SW Slightly weathered; MW Moderately weathered; HW Highly weathered; EW Extremely weathered; DW Distantly weathered; Residual soil

Strength: VL Very low; L Low; M Medium; H High; VH Very high; EH Extremely high

Defect type: JT Joint; FT Fault; SZ Shear; CZ Crushed zone; SZ Crushed seam; DS Disturbed zone

Roughness: VR Very rough; RO Rough; SM Smooth; SL Slickensided

Planarity: PL Planar; CU Curved; UNU Undulating; ST Stepped; IR Irregular

Coating: CN Clean; SN Stained; VN Veneer; CO Coating

coffey geotechnics

Engineering Log - Borehole

Borehole No.	CBH2		
Sheet	1 of 1		
Project No.	GEOTLCOV23462AA		
Client:	Taylor Thomson Whitting	Date started	10.3.2008
Principal	Coffey Projects	Date completed	10.3.2008
Project	185 FOX VALLY ROAD, SAN HOSPITAL , WAHROONGA	Logged by	JA
Borehole Location	Building 1	Checked by	SJ

Drilling method and equipment	Hand Drill BBC	Bearing	[illegible]	Dip	-90°	R.L. Datum	[illegible]
Hole diameter	[illegible]	Northing	[illegible]	Easting	[illegible]	Datum	AHD

drilling information

method	penetration	support	water	water samples tests, etc	depth (metres)
HD	1 2 3		NOT OBSERVED	D A E SPT N* 10	0.50 1 1.50 2 2.50 3 3.50 4 4.50 5 5.50 6 6.50 7 7.50 8

material substance

graphic log	classification symbol	material substance (colour, grain size or particle characteristics, plasticity, odour, staining and other components)	moisture condition	consistency/density index	penetrability	structure and additional observations
	FILL	FILL: BITUMEN and ROAD BASE SOIL: CLAYEY SAND: Fine grained, dark brown, medium plasticity clay, with some coarse black gravel (15mm, dark clayey FILL)	D			FILL [illegible]
		Borehole CBH2 terminated at 1.5m				

method

AC	auger screwing
AD	auger drilling
W	washbore
DT	diatube
D	[illegible]
V	vane
B	[illegible]
HA	hand auger
HV	hand vane
PM	[illegible]

support

U	tube
C	casing

penetration: 1 2 3 easy / hard / very hard

water

	[illegible] water seen
	water inflow
	water outflow

field test

N	SPT - standard penetration test
N*	SPT - with solid cone
V	vane shear (kPa)
P	penetrometer (kPa)
Hc	hand penetrometer
E	[illegible]
R	refusal

classification symbols and soil description

Unified Soil Classification System

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey geotechnics

Engineering Log - Borehole

Borehole No.	CBH2A		
Sheet	1 of 1		
Project No.	GEOTLCOV23462AA		
Client:	Taylor Thomson Whitting	Date started	10.3.2008
Principal.	Coffey Projects	Date completed	10.3.2008
Project	185 FOX VALLY ROAD, SAN HOSPITAL, WAHROONGA	Logged by	JA
Borehole Location:	Building 1	Checked by:	SH

Inclination and bearing: Vertical — Easting: 333301.66 — Scale: 1:50 — RL Datum: 150.067

Hole diameter: 100 mm — Northing: 6265744.6 — Datum: — Datum: AHD

drilling information — material substance

method	penetration 1 2 3	support	water	samples tests, RQD, etc	RL	depth metres	graphic log	classification symbol	material (soil type, plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency/density index	penetrometer kPa	structure and additional observations
AOT			NOT OBSERVED						FILL: BITUMEN and ROADBASE	D			TCL
					150				FILL: CLAYEY SAND: [illegible]				
						1							TC bit refusal on sandstone at 1.08m
									Borehole CBH2A terminated at 1.08m				
					148	2							
					147	3							
					146	4							
					145	5							
					144	6							
					143	7							
					142	8							

method: AS auger screwing; AD auger drilling; RW rotary wash; W washbore; CT core barrel; HA hand auger; DT diatube; P piston; V vane; T TC bit; *not shown by code: AOT

support: N natural; C casing; penetration 1 2 3 4; water: water inflow; water outflow

RQD: [illegible]; U50 undisturbed tube 50mm diameter; U75 undisturbed tube 75mm diameter; D disturbed sample; E environmental sample; SPT standard penetration test; SPC SPT with cone; V vane shear (kPa); P pressuremeter; DCP dynamic cone; B bulk; W water

classification symbols and soil/rock descriptions: Based on Unified Classification System

moisture: D dry; M moist; W wet; Wp plastic limit; Ws shrinkage limit

consistency/density index: VS very soft; S soft; F firm; St stiff; VSt very stiff; H hard; Fb friable; VL very loose; L loose; MD medium dense; D dense; VD very dense

coffey geotechnics

Engineering Log - Borehole

Borehole No	CBH2B		
Sheet	1 of 1		
Project No	GEOTLCOV23462AA		
Date started	10.3.2008		
Date completed	10.3.2008		
Logged by	JA		
Checked by	SH		

Client: Taylor Thomson Whitting

Principal: Coffey Projects

Project: 185 FOX VALLEY ROAD, SAN HOSPITAL, WAHROONGA

Borehole Location: Building 1

drill model and drilling method		Easting	327104	Plant	DP	R.L. Surface	156.918
hole diameter	100mm	Northing	6256712	Bearing		Datum	AHD

Drilling information | Material substance

notes samples, tests etc	depth (metres)	graphic log	classification symbol	description of material: soil type, plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency/density index	penetration resistance	structure and additional observations
	FL			FILL: BITUMEN and ROADBASE	D			TCL
				FILL: CLAYEY SAND, fine grained, brown, low to medium plasticity, with crushed sandstone, gravel and quartz				
	1.00	1						
				Refusal on sandstone at 1.0 m				TC bit refusal on sandstone at 1.0m
	1.95	2						
	2.95	3						
	3.95	4						
	4.95	5						
	5.95	6						
	6.95	7						
	7.95	8						

Methods: AS auger screwing; AD auger drilling; HA hand auger; W washbore; CT core barrel; HA hand auger; DT core barrel; U tube sample; V vane; T TC bit; Soil classification based on AS1726; ADT

Support: NP none; C casing; penetration: 1 2 3 4 5 6; resistance: very low, low, medium, stiff, very stiff, hard; water: 10/10/08 water level; water loss; groundwater; water seepage

Notes, samples, tests: U50 undisturbed sample 50mm diameter; U75 undisturbed sample 75mm diameter; D disturbed sample; B bulk sample; W SPT value (blows per 75mm); W* SPT value (blows per 150mm); V vane shear (kPa); P pressure meter test; DS Dutch cone; E environmental sample; X no sample

Classification symbols and soil description based on Unified Classification System

moisture: D dry; M moist; W wet; Wp plastic limit; Wl liquid limit

consistency/density index: VS very soft; S soft; F firm; St stiff; VSt very stiff; H hard; FB friable; VL very loose; L loose; MD medium dense; D dense; VD very dense

coffey geotechnics

Engineering Log - Borehole

Borehole No	CBH3		
Sheet	1 of 3		
Project No	GEOTLCOV23462AA		
Date started	10.3.2008		
Date completed	10.3.2008		
Logged by	JA		
Checked by	SH		

Client	Taylor Thomson Whitting		
Principal	Coffey Projects		
Project	185 FOX VALLY ROAD, SAN HOSPITAL, WAHROONGA		
Borehole location	Building 3		

Datum/grid/co-ordinates	MGA94 Grid 849	Easting	323116.5	Dip	90°	R.L. Surface	153.00
Hole diameter	100mm	Northing	6265616.35	Bearing		Datum	AHD

drilling information | material substance

method	penetration	support	water	notes samples tests etc	RL	depth metres	graphic log	classification symbol	material (soil type, plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency/density index	moisture content	structure and additional observations
AD/V				B4					FILL: SILTY SAND - Topsoil, fine grained, brown	D			
				B5					FILL: CLAY - Low plasticity clay, pale grey and brown, with some sand	<Wp			
				SPT 2,1,1,1 N*=1	151	1							
					150	2							
				SPT 1,1,1,1 N*=1		3			FILL: SAND - Medium grained, orange, with some sandstone gravel and clay, 5mm grain size, low plasticity clay, trace of coke				
				SPT 2,1,2,1 N*=3	156	4							
					155	5			FILL: SANDY CLAY - Medium plasticity, fine grained sand, with some brown	<Wp			
				SPT 2,5,6,6 N*=11	154	6			Tree roots at 5.5m-6.1m				Lithic clast from core at 6.0
									Softer clay layer 6.7m-6.9m				
						7			Borehole CBH3 terminated at 6.8m				
						8							

method	support	notes, samples, tests	classification symbols and soil description	consistency/density index
AS auger screwing	N natural	U50 undisturbed sample 50mm diameter	soil description	VS very soft
AD auger drilling	C casing	U100 undisturbed sample 100mm diameter	based on visual classification	S soft
HA hand auger	penetration	D disturbed sample	system	F firm
W washbore	1 2 3 4	ASB auger screw bulk sample	moisture	St stiff
CT core barrel	refusal	SPT standard penetration test (SPT)	D dry	VSt very stiff
NMLC NMLC core	water	SPT SPT with solid cone	M moist	H hard
HQ HQ core	water level	V vane shear (kPa)	W wet	Fb friable
PQ PQ core	water inflow	P pressuremeter	Wp plastic limit	VL very loose
	water outflow	Dx dynamic penetrometer	Wl liquid limit	L loose
		C sonic core		MD medium dense
		R refusal		D dense
				VD very dense

coffey geotechnics

Engineering Log - Cored Borehole

Borehole No	CBH3		
Sheet	2 of 3		
Project No	GEOTECOV23402AA		
Client	Taylor Thomson Whitting	Date started	10.3.2008
Principal	Coffey Projects	Date completed	11.3.2008
Project	185 FOX VALLEY ROAD, SAN HOSPITAL, WAHROONGA	Logged by	JA
Borehole location	Building 3	Checked by	SH

drill model & mounting: Mobile D-1000 | Easting: 328716.6 | Slope: 90° | N: 6258045

hole diameter: 100mm | Drilling fluid: Water | Northing: 6256630 | Inclination: | Datum: AHD

drilling information | material substance | rock mass defects

Hole depth	Water	RL	Core run	Graphic log	Material description	Weathering	Estimated strength	Defect spacing (mm)	Defect description
		157	1						
		156	2						
		155	3						
		154	4						
		153	5						
		152	6						
					Core cut from non-core borehole				
		151	7		SANDSTONE: [illegible]	HW		100	DP 0°, PL, RO, SN
			8					85	DP 15°, PL, SO, CO
									SO, 0°, PL, SO, 2mm clay, 50mm
									SM 5°, PL, SO, [illegible]
									SM 15°, PL, SO, [illegible]

Core diameter: 50mm

Rock GEOTECH Report Rev 3

CORED BOREHOLE LOG GEOTECOV23402AA.GPJ <> COFFEY GEOT 10.4.08

method

DT	dentate
AS	auger screwing
AD	auger drilling
HA	hand auger
DH	[illegible]
HMLC	HMLC core
NQ, HQ, PQ	wireline core

core RF

	[illegible]
	[illegible]

graphic log/core recovery

	core recovery
	[illegible]
	[illegible]
	[illegible]

water

	RL of water level on [illegible]
	water inflow
	partial loss of drilling fluid
	complete loss of drilling fluid
	water pressure [illegible]

weathering

FR	fresh
SW	slightly weathered
MW	moderately weathered
HW	highly weathered
XW	extremely weathered
DW	[illegible]

strength

VL	very low
L	low
M	medium
H	high
VH	very high
EH	extremely high

defect type

C	joint
PS	parting
SU	seam
SZ	shear / fault
SD	sheared surface
CS	crushed seam

roughness

VR	very rough
RO	rough
SO	smooth
SL	slickensided

planarity

PL	planar
CU	curved
UN	undulating
ST	stepped
IR	irregular

coating

CN	none
SN	stained
VN	veneer
CO	coating

coffey geotechnics

Engineering Log - Cored Borehole

Borehole No	CBH3
Sheet	3 of 3
Project No	GEOTLCOV23462AA
Date started	10.3.2008
Date completed	11.3.2008
Logged by	JA
Checked by	SH

Client	Taylor Thomson Whitting
Principal	Coffey Projects
Project	185 FOX VALLEY ROAD, SAN HOSPITAL, WAHROONGA
Borehole Location	Building 3

drill model & mounting: Mobile Drill B30 | Easting: [illegible] | slope: -90° | R.L. Surface: 104.045

hole diameter: 100 mm, Drilling fluid | Northing: [illegible] | bearing: | datum: AHD

drilling information | material substance | rock mass defects

method	water	RL	depth metres	material: rock type, grain characteristics, colour, structure, minor components	weathering alteration	Is(50) MPa D-diametral A-axial	defect description: type, inclination, planarity, roughness, coating, thickness
NMLC				SANDSTONE: Medium grained, orange and pale grey, moderately to distinctly bedded (continued)	HW / MW	D 0.70, A 0.58	
		143	9				JT, 70°, UN, CN
						D 0.57, A 0.9	PT, 20°, PL, RO, CN
							PT, 20°, PL, SO, CN
		146	10				SM, 20°, PL, SO, clay, 5mm
						D 0.34, A 0.4	
		147	11				JT, 65°, PL, SO, clay, 3mm
							SM, 10°, UN, SO, clayey sand, 10mm
							SM, 10°, UN, SO, clayey sand, 10mm
							SM, 10°, UN, SO, clayey sand, 10mm
							PT, 45°, IR, RO, CN
						D 0.1, A 0.4	
		148	12				SM, 0°, PL, SO, clay, 40mm
				NO CORE, 0.33m		D 0.05, A 0.24	SM, 0°, PL, SO, clay, 200mm
				Carbonate 200mm block from 12.0m to 12.35m	XW		
				NO CORE: 0.04m	DW		
				CBH3 terminated at 12.35m			
		145	13				
		144	14				
		143	15				
			16				

method: DT diatube; AS auger screwing; AD auger drilling; RR roller/tricone; CB claw or blade bit; NMLC NMLC core; HQ, NQ, PQ wireline core

core-lift: casing installed; barrel withdrawn

graphic log/core recovery: core recovered; no core recovered

water: level on date shown; water inflow; partial drill fluid loss; complete drill fluid loss; water pressure test result (lugeons) for depth interval shown

weathering: RS residual soil; XW extremely weathered; HW highly weathered; MW moderately weathered; SW slightly weathered; FR fresh

strength: VL very low; L low; M medium; H high; VH very high; EH extremely high

defect type: JT joint; PT parting; SM seam; SZ sheared zone; CS crushed seam

planarity: PL planar; CU curved; UN undulating; ST stepped; IR irregular

roughness: VR very rough; RO rough; SO smooth; SL slickensided

coating: CN clean; SN stained; VN veneer; CO coating

CORED BOREHOLE GEOTLCOV23462AA.GPJ COFFEY.GDT

Form GEO 5.3 Issue 3 Rev.2

coffey geotechnics

Engineering Log - Borehole

Borehole No	CBH4		
Sheet	1 of 2		
Project No:	GEOTLCOV23462AA		
Client:	Taylor Thomson Whitting	Date started	11.3.2008
Principal	Coffey Projects	Date completed	11.3.2008
Project	165 FOX VALLEY ROAD, SAN HOSPITAL, WAHROONGA	Logged by	JA
Borehole Location	Building 2	Checked by	SH

drilling information | material substance

RL	Description	Structure and additional observations
0	FILL: BITUMEN and ROADBASE	FILL
	SANDY CLAY: [illegible] sand	RESIDUAL SOIL
	SANDSTONE: Fine to med grained, pale orange	SANDSTONE: Widespread [illegible]
	Borehole CBH4 completed at [illegible]	

NOT MOVE TO REF

SCRIPTOLC GEOTLCOV23462AA.GPJ COFFEY GDT 19.4.08

method		support			
AB	hand auger	LP	[illegible]	N	[illegible]
AD	auger drilling	C	casing		
RB	rotary blade	penetration			
W	[illegible]	1 2 3 4			
CT	cable tool				
HA	hand auger	water			
DT	[illegible]				
B	[illegible]				
V	[illegible]				
T	[illegible]				
[illegible]	[illegible]				
[illegible]	[illegible]				

core barrel sizes

[illegible]	[illegible]
[illegible]	[illegible]
U	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

classification symbols and soil description based on [illegible] system

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey geotechnics

Engineering Log - Cored Borehole

Borehole No	CBH4		
Sheet	2 of 2		
Project No	GEOTLCOV23462AA		
Client	Taylor Thomson Whitting	Date started	11.3.2008
Principal	Coffey Projects	Date completed	11.3.2008
Project	185 FOX VALLEY ROAD, SAN HOSPITAL, WAHROONGA	Logged by	JA
Borehole Location	Building 2	Checked by	SH

drill model & mounting: Hydro Drill 800 | Easting: 333307.1 | North: 6265557.0 | Dip: 90° | R.L. Surface: 107.8M | datum: AHD

hole diameter: 100mm Diamond core

drilling information					material substance						rock mass defects			
method	support	water	RL	depth (metres)	graphic log		material (e.g. type, grain/particle size, colour, structure, minor components)	weathering	strength	drawing strength (MPa)	RQD %	defect spacing (mm)	defect description (dip, dip direction, roughness, aperture, infill, thickness)	colour / general
			109	1			Concrete footing to cored borehole							
NMLC			108	2			SANDSTONE: Fine grained, dark orange and pale grey, distinctly bedded with irregular weathering patterns.	SW		D 0.85 0.5	60		SM, 0°, PL, SO, clay, 30mm; SM, 0°, PL, SO, clay, 30mm; PT, 10°, PL, SO, clay, 1mm; 1.62° UN RO CO, iron, clay coated	
				3						C 0.65 0.5			PT, 5°, PL, SO, clay, 1mm; SM, 0°, PL, SO, clay, 30mm; SM, 0°, PL, SO, clay, 10mm	
			106	4				60	60	D 0.9 0.75			SM, 30°, PL, SO, sandy clay, 3mm; PT, 0°, PL, SO, CA, No coat; PT, 10°, PL, SO, clay, 1mm; PT, 25°, PL, RO, VN; PT, 0°, PL, SO, clay, 1mm; PT, 10°, PL, SO, CO; PT, 5°, PL, SO, CO; SM, 45°, PL, SO, clay, 2mm; PT, 45°, PL, SO, CO, 1mm; PT, 5°, PL, RO, Gle; PT, 0°, PL, SO, CO; PT, 0°, PL, RO, SN; PT, 0°, PL, RO, LA	
			105	5			SANDSTONE: Medium grained, pale grey with bands of iron stained orange, distinctly bedded				97			
			104	6						D 0.6 0.75			PT, 7°, PL, RO, CO; PT, 7°, PL, RO, CO	
							CBH terminated at 6.18m							
			103	7										
			102	8										

equipment
DT diamond
AS auger screwing
AH auger hammering
HR rotary core
CD diamond core
NMLC, HQ, BQ, PQ wireline core

core loss
core loss
barrel/bit core loss

graphic log/core recovery
core recovered
equipment operation
drilling fluid / water
no core recovered

water
water level
partial drill fluid loss
complete drill fluid loss

weathering
FR fresh
SW slightly weathered
MW moderately weathered
HW highly weathered
CW completely weathered
RW residual weathered (clayey soil or lateritic)

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
JT joint
BP bedding
SM seam
SZ shattered zone
SS shattered surface
CS crushed zone

roughness
VR very rough
RU rough
SO smooth
SL slickensided

planarity
PL planar
CU curved
UN undulating
ST stepped
IR irregular

coating
CN clean
SN stained
VN veneer
CO coated

Logged: JAN 03 2008 Checked: 3

coffey geotechnics

Engineering Log - Borehole

Client	Taylor Thomson Whitting	Borehole No.	CBH5
Principal	Coffey Projects	Sheet	1 of 2
Project	185 FOX VALLY ROAD, SAN HOSPITAL, WAHROONGA	Project No.	GEOTI COV23462AA
Borehole Location	Building 2	Date started	11.3.2008
		Date completed	12.3.2008
		Logged by	JA
		Checked by	SH

Easting 323836.1 Height 197 N Surface 162.9 m
Northing 6258165 Datum AHD

drilling information | material substance

method	penetration	support	water	notes samples, tests etc	RL	depth	graphic log	classification symbol	material description (colour, plasticity or particle characteristics, additional comments, major components)	moisture condition	consistency or density index	additional observations
AD/V				E					FILL: BITUMEN and ROADBASE			FILL
				Bb				CI	CLAY: Low plasticity, brown, with some medium to coarse sand	M>Wp	St	RESIDUAL SOIL
					161	1			SANDSTONE: fine to medium grained, orange/brown, highly weathered			SANDSTONE moisture 3% sample to PID test
									Bottom of hole terminated at 2.0 m			
					160	2						
					159	3						
					158	4						
					157	5						
					156	6						
					155	7						
					154	8						

method
AS auger screwing
AD/V auger drilling with V-bit
RB rotary blade
W washbore
CT cable tool
RC rotary core
DT drill to
B blade bit
V V-bit
T tungsten carbide bit
V.S. VOT

support
N natural
C casing
penetration
1 2 3 4
water
water seepage
water inflow
water outflow

notes, samples, tests
U50 undisturbed sample 50mm diameter
U75 undisturbed sample 75mm diameter
D disturbed sample
E standard penetration test (SPT)
E* SPT sample recovered
Ec SPT w/ cone bit
V vane shear (kPa)
P pressuremeter test
Ds dynamic cone test
S penetrometer test
H hand

CLASSIFICATION SYMBOLS AND DESCRIPTION
based on Unified Classification System

moisture
D dry
M moist
W wet
Wp plastic limit
Ws shrinkage limit

consistency/density index
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

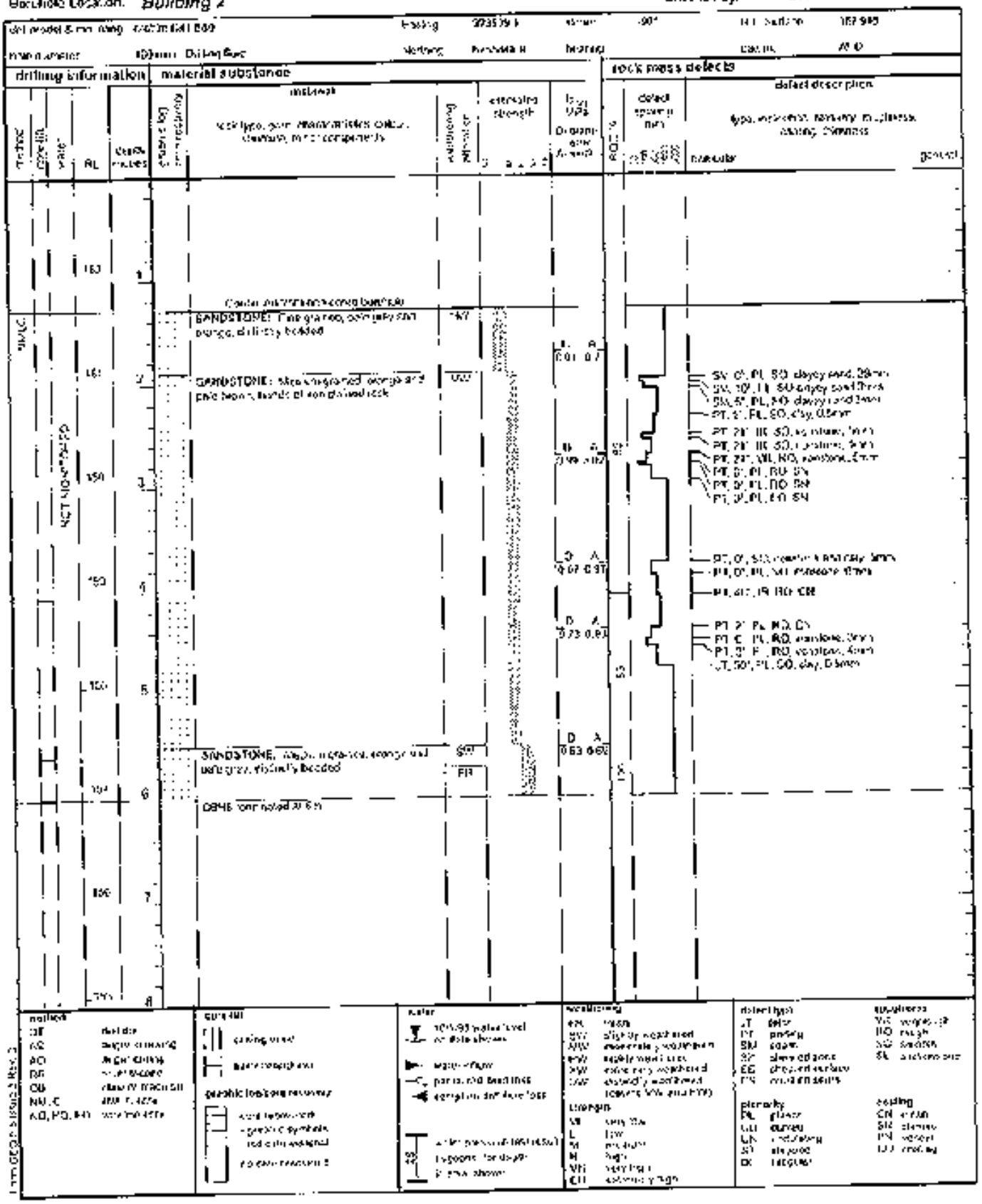
coffey geotechnics

Engineering Log - Cored Borehole

Borehole No.	CBH5	Sheet	2 of 2
Project No	GEOTLCOV23452AA	Date started	11.3.2008
Date completed	12.3.2008	Logged by	JA
Checked by	SH		

Client: *Taylor Thomson Whitting*

Principal: *Coffey Projects*

Project: *185 FOX VALLY ROAD, SAN HOSPITAL, WAHROONGA*

Borehole Location: *Building 2*