Douglas Partners
Geotechnics / Environment / Groundwater

Integrated Practical Solutions

Report on
Contaminated Land Preliminary Site Investigation

Proposed Hospital Upgrade
Bowral & District Hospital, Mona Road, Bowral

Prepared for
Health Infrastructure

Project 89199.01
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Douglas Partners
Geotechnics / Environment / Groundwater

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

	Signature	Date
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Reviewer	FOR J.M. NASH.	27 September 2016

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Report on Contaminated Land Preliminary Site Investigation
Proposed Hospital Upgrade
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1. Introduction

This report presents the results of a contaminated land preliminary site investigation (PSI) undertaken for a proposed hospital upgrade at Bowral & District Hospital, Mona Road, Bowral (identified as Lot 4 in DP858938). The work was commissioned by Health Infrastructure, the project planners and undertaken in liaison with TSA Management Pty Ltd, the project managers for the developers.

It is understood that the hospital is subject to an upgrade, including the construction of new buildings and car park areas in the northern section of the site. It is understood that the PSI is required to provide information on site conditions and to assess potential contamination issues that will need to be considered for conceptual planning and design purposes.

The PSI was undertaken in conjunction with a feasibility pre-demolition hazardous building materials survey and a geotechnical investigation, both of which are reported separately.

2. Scope of Works

The scope of the works for the PSI comprised:

- A review of site information, comprising:
  - Geological and topographical maps/drawings;
  - Published maps of acid sulphate soil (ASS) potential;
  - Groundwater bores registered with the NSW Office of Water;
  - A review of readily available site history, comprising:
  - Current and historic titles and deposited plans;
  - Historical and current aerial photographs;
  - Public databases held under the Contaminated Land Management Act 1997 and the Protection of the Environment Operations Act 1997;
  - Records held in the SafeWork NSW Stored Chemical Information Database (SCID). The records held by SafeWork NSW may include current and historic licences to store Dangerous Goods; and
  - Readily accessible Council Records and the Section 149 (2&5) planning certificate.
- A site walkover to identify conditions that may indicate a potential for contamination and determine associated environmental receptors; and

- The preparation of this PSI report detailing the findings of the desktop based investigation and site walkover, commenting on identified areas of environmental concern and associated potential contaminants, the risk of contamination at the site, and comment on the compatibility of the site for the proposed development.

3. Site Description and Regional Geology

The proposed upgrade is to be located in the central portion of the grounds of Bowral & District Hospital (Lot 4 in DP858938), accessed from the southern side of Bowral Street at Bowral, as shown on Drawing 1, Appendix B. Surface levels fall in the northerly direction (i.e. towards Bowral Street) at grades of 1 in 35 to 1 in 60 with an overall difference in level estimated to be about 2 m from the highest point of the development footprint to the lowest.

The site is bounded to the north by Bowral Street, to the west by Southern Highlands Private Hospital, to the south by Ascot Road. At the time of the investigation, the building footprint comprised a single level hospital building and asphalt paved car park. The remainder of the footprint was lightly grassed. Various observations made during the investigation are shown on the colour photoplates in Appendix C.

Reference to the 1:100,000 Southern Coalfield Regional Geology Sheet indicates that the site is underlain by rocks belonging to the Wianamatta Group of Triassic age. This formation typically comprises shale, laminate and siltstone. The results of the geotechnical field investigation were consistent with the broad-scale geological mapping with sandstone or shale intersected in seven of the eight boreholes.

DP has recently undertaken a preliminary geotechnical investigation (DP project 89199.00) which included borehole drilling with in-situ geotechnical testing and sampling followed by geotechnical laboratory testing of selected samples, engineering analysis and reporting. It is noted that the geotechnical investigation was limited to the northern portion of the site.

The geotechnical field work comprised the drilling of four boreholes (Bores 1 – 4) to depths of 0.2 – 1.1 m with a Kubota KX018-4 mini-excavator and four boreholes (Bores 101 – 104) to depths of 1.5 – 6.0 m with either a DT100 truck-mounted or Bobcat-mounted drilling rig. The borehole locations are shown on Drawing 1, Appendix B.

Slightly variable conditions were encountered underlying the site, with the succession of strata broadly comprising asphaltic concrete, topsoil / topsoil filling, filling, silty clay and bedrock.

Free groundwater was observed at depths of 1.1 m (RL 679) and 1.2 m (RL 678.4) in Bores 3 and 4 respectively during drilling. No free groundwater was observed in the remaining boreholes during auger drilling. It is noted that the use of water as a drilling fluid precluded groundwater observations whilst coring. Furthermore, all boreholes were backfilled following the field work which precluded long term monitoring of groundwater level. Groundwater levels are dependent on preceding climatic conditions and soil permeability and can therefore fluctuate with time.

4. Site History

The brief site history review was undertaken to identify potential areas of environmental concern which may arise from previous uses and potentially contaminating activities that may have occurred at the site.

4.1 Title Deeds

A title deeds search was conducted by Scott Ashwood Pty Ltd, Settlement Agents and Legal Searchers. Title information can assist in the identification of previous land uses through the recorded occupation of individual land owners, or by a descriptive company name and may establish potentially contaminating activities which have occurred or are occurring at the site. A summary of the results of the site history and title deeds search is shown in Table 1 with the full results of the searches provided in Appendix D.

Table 1: As regards to the part numbered one on the sketch in Appendix E

Date of Acquisition	Owner and Occupation where available	Inferred Land use
13.1.1890 (1890 to 1965)	Robert Pemberton Richardson (Esquire) Patrick Lindesay Crawford Shepherd (Member of the Legislative Council) Bernard James Newmarch (Physician and Surgeon)	Agricultural / Unused
8.2.1965 (1965 to 1965)	Eric Lyle Brake (Trustee? for Berrima District Hospital)	Commercial
8.2.1965 (1965 to 1994)	The Berrima District Hospital Now The Bowral and District Hospital	Commercial

Table 2: As regards to the part numbered two on the sketch in Appendix E

Date of Acquisition	Owner and Occupation where available	Inferred Land use
19.10.1920 (1920 to 1931)	Arthur William Tooth (Gentlemen) Gavin George (Gentlemen) Edwin Boardman (Gentlemen)	Agricultural / Unused
1.12.1931 (1931 to 1931)	Gavin George (Gentlemen) Edwin Boardman (Gentlemen)	Agricultural / Unused
1.12.1931 (1931 to 1994)	The Berrima District Hospital Now The Bowral and District Hospital	Commercial

Table 3: As regards to the part numbered three on the sketch in Appendix E

Date of Acquisition	Owner and Occupation where available	Inferred Land use
20.9.1932 (1932 to 1994)	The Berrima District Hospital Now The Bowral and District Hospital	Commercial

Table 4: As regards to the whole site

Date of Acquisition	Owner and Occupation where available	Inferred Land use
14.1.1994 (1994 to Date)	The Berrima District Hospital Now The Bowral and District Hospital	Commercial

4.2 Historical Aerial Photography

Aerial photographs were examined to identify possible changes to the landscape which may include potentially contaminating land activities or significant environmental features. Six aerial photographs were examined from the years 1963, 1972, 1982, 1994, 2006 and 2015. Copies of which are included in Appendix E with a summary of the findings provided in the following sections.

1963: Numerous structures are visible in the central and southern portion of the site associated with the Bowral and District Hospital. The northern portion of the site appears primarily vacant with the exception of a hardstand car park. The land surrounding the site appears to primarily comprise residential properties.

1972: The site and surrounding land appear relatively unchanged.

1982: The site appears relatively unchanged with the exception of additional structures in the central portion of the site not observed in previous aerial photographs. The surrounding land appears relatively unchanged.

1994: The site and surrounding land appear relatively unchanged.

2006: The northern portion of the site appears substantially different to previous aerial photographs with additional buildings and a larger hardstand car park. The southern portion of the site appears relatively unchanged. Significant development appears to have occurred in the area to the north west of the site with a large structure present and an associated hardstand car park (this is associated with the Bowral Private Hospital).

2015: The site appears relatively unchanged with the exception of an additional building in the central portion of the site and a new pathway along the eastern boundary of the site. The surrounding area appears relatively unchanged.

4.3 NSW EPA Public Registers

A search for current Statutory Notices on 14 September 2016 issued under the *Contaminated Land Management Act,* 1997 and *Protection of the Environment Operations Act,* 1997 available on the NSW EPA website showed that there was a former license issued for the site.

License number 11482 was issued for the site in August 200 for the generation or storage of Hazardous, Industrial or Group A wastes. License non-conformances were recorded as having

occurred each year from 2001 to 2006 inclusive. No details regarding these non-conformances were available.

The license summary page on the NSW EPA website indicated that the license was no longer in force. The site is currently on the list of de-licensed sites still regulated by the NSW EPA.

4.4 SafeWork NSW Search

A search of the records held by SafeWork NSW found that the Bowral and District Hospital has licenses to store the following dangerous goods:

- 4L of hydrogen in a roofed storeroom;
- 10ML of Ethanol in a roofed storeroom;
- 25L of Methanol in a roofed storeroom;
- 8L of Alcohols in a roofed storeroom;
- 4L of Giemsa Stain in a roofed storeroom, identified as '1' on a drawing provided by SafeWork NSW;
- 3000L of liquid oxygen in an above ground storage tank; and
- 1000L of diesoline 50 in an above ground storage tank.

The results of the search also indicate that a license was formerly held for an underground storage tank for diesel fuel.

A copy of the search results, dated 29 August 2016, is included in Appendix F.

Based on the information provided by SafeWork NSW and DP's site walkover (refer to Section 5), approximate locations of the dangerous goods storage areas within the site are highlighted on Drawing 1, Appendix B.

4.5 Council Records

A search of Wingecaribee Shire Council (Council) records for the site was conducted by Council staff. Various council records were provided that were associated to the sites use as a Hospital.

Also included in the Council records was internal correspondence dated 2002 between Hospital staff suggesting that trade waste from a pathology laboratory was discharged directly to the sewer without prior treatment. No further detailed information was available in the Council records made available to suggest whether this was actually occurring.

4.6 Section 149 (2&5) Certificate

The Section 149 Planning Certificates for the site was obtained from Wingecaribee Shire Council. Copies are included in Appendix G.

There are no matters listed under Section 59(2) of the *Contaminated Land Management Act 1997* which should be specified on the certificates. Section 59(2) concerns matters that must be included within a Section 149 Planning Certificate in relation to the land being significantly contaminated, regulatory orders applying and the existence of a site audit statement or site audit report pertaining to the property.

There was no information in the Section 149(5) Planning Certificates regarding contaminated land or the presence of fill at the site.

5. Site Walkover

A site walkover was undertaken by an experienced DP environmental engineer on 5 August 2016. The following main site features were noted:

- The northern portion of the site primarily comprised an asphaltic concrete car park and associated landscaped areas; refer to Photographs 1 and 2, Appendix C;
- A batter potentially containing filling was observed adjacent to the southern extent of the car park as highlighted on Drawing 1, Appendix B and shown in Photograph 3, Appendix C;
- Numerous buildings associated with the sites use as a hospital were observed across the site, primarily in the central portion, including the following:
    - Emergency Department;
    - Ambulance entry (forming an annex off the Emergency Department);
    - Short Stay;
    - Medical Records;
    - Medical imaging;
    - Intensive Care Unit, Theatres, Birthing and Maternity and the Milton Park Ward;
    - Social Work (including Occupational Therapy, and Speech Pathology), and the attached Cardiac and Physiotherapy Units; and
    - Two detached plant rooms.
- Typical buildings encountered are shown in Photographs 4 to 6, Appendix C. Details on the condition and construction of the buildings are included in DP's *Feasibility Pre-Demolition Hazardous Building Materials Report*. The buildings were in generally sound condition, though asbestos containing materials and other hazardous building materials were observed;
- The southern portion of the site included the following:
    - An asphaltic concrete car park; refer to Photograph 7, Appendix C. Evidence that the car park platform had potentially been filled was observed on exposed edges of the car park; refer to Photograph 8, Appendix C;
    - A brick building on a concrete slab base housing a diesel fuel storage tank; refer to Photograph 9, Appendix C. It is noted that access the building was not available to

determine the condition of the tank, however, no signs of contamination were observed surrounding the building;

- An electrical substation box; refer to Photograph 10, Appendix C;
- A general waste processing area; refer to Photographs 11 and 12, Appendix C; and
- A medical waste processing area: refer to Photographs 13 and 14, Appendix C.

- The above features of the northern portion of the site are highlighted on Drawing 1, Appendix B.

6. Conceptual Site Model

A conceptual site model (CSM) is a representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors (linkages). The CSM provides the framework for identifying how the site may have become contaminated and how potential receptors may be exposed to contamination either in the present or the future i.e. it enables an assessment of the potential source – pathway – receptor linkages (complete pathways).

6.1 Potential Contaminations and Contaminants of Concern

Based on the findings of the site history investigation and site walkover it is considered that potential for contamination exists at the site primarily through the filling of the site through its development as a hospital, its current use as a hospital, and from hazardous building materials in current structures.

The potential sources (S) of contamination are summarised as:

- S1 - Uncontrolled filling of an unknown origin associated to development of the site.
- S2 – Site activities associated with the sites use as a Hospital such as storage and use of dangerous goods (including diesel fuel), handling / processing of medical wastes, presence of an electrical substation, and laundry services.
- S2 - Hazardous building materials in the existing buildings.

Common contaminants of concern associated with the above identified sources include; metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB), organochlorine pesticides (OCP), organophosphorous pesticides (OPP), total phenols, asbestos in construction and demolition waste or waste soils, lead based paint, polychlorinated biphenyls (PCB), pathogens in medical wastes, asbestos and synthetic mineral fibres (SMF) in hazardous building materials.

6.2 Potential Receptors

Receptors (R) that potentially could be influenced by the potential contaminants at this site include:

Human health receptors:

- R1 – Construction workers during the re-development.
- R2 – End users (residential/commercial).
- R3 – Adjacent users (residential).

Environmental receptors:

- R4 - Groundwater and
- R5 - Surface water.
- R6 - Terrestrial ecology.

6.3 Potential Pathways

Potential pathways (P) for contaminants on the site, with consideration to the site's proposed end use, current condition, and geological, topographical and hydrogeological characteristics, include:

- P1 - Ingestion and dermal contact.
- P2 - Inhalation of dust and/or vapours.
- P3 - Leaching of contaminants and vertical migration into groundwater.
- P4 - Surface water run-off.
- P5 - Lateral migration of groundwater providing base flow to watercourses.
- P6 - Contact with terrestrial ecology.

6.4 Summary of Potential Complete Pathways

A 'source–pathway–receptor' approach has been used to assess the potential risks to human and environmental receptors from potential contamination sources on or in the vicinity of the site, via exposure pathways. The potential complete pathways between the source and receptors are provided in Table 5

Table 5: Potential Complete Pathways

Source	Transport Pathway	Receptor	Action Recommended
S1 – Uncontrolled filling of an unknown origin associated to the development of the site. S2 – Site activities associated with the sites use as a hospital S3 - Hazardous building materials in site buildings / structures or in soils.	P1 - Ingestion and dermal contact P2 - Inhalation of dust / vapours	R1 - Construction Workers R2 - End users	An intrusive investigation is required to assess possible contamination including chemical testing of the soils.
	P2 - Inhalation of dust / vapours	R3 - Adjacent users	
	P3 - Leaching of contaminants	R4 - Groundwater	If significant contamination is encountered during intrusive soil investigation, leachability testing may be required.
	P4 - Surface water run-off P5 - Lateral migration of groundwater	R5 - Surface water	If significant contamination is encountered during intrusive soil investigation, further investigation of potential surface water receptors may be required.
	P6 - Contact with terrestrial ecology	R6 - Terrestrial ecology	An intrusive investigation is required to assess possible contamination including chemical testing of the soils.

7. Conclusion and Recommendations

Based on the findings of the brief site history review and site walkover it is considered that the site exhibits a moderate potential for contamination.

It is recommended that a detailed intrusive investigation of the site is undertaken to target areas of potential environmental concern as described in Section 7.1, including detailed intrusive investigation of:

- All areas of the site containing potential fill materials (primarily building footprints and retaining walls); and
- The potential for site wide contamination from the use of the site as a hospital including former fuel storage area, current fuel storage area, dangerous goods storage area, electrical substation and waste processing areas.

Subject to the findings of a detailed site investigation and any necessary remediation and validation (if required) it is considered highly likely that the site can be made suitable for the proposed development with respect to site contamination.),

8. Limitations

Douglas Partners (DP) has prepared this report for this project at Bowral District Hospital in accordance with DP's proposal dated 30 June 2016 and acceptance dated 26 July 2016. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Health Infrastructure for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

DP's advice is based upon the conditions encountered during this investigation. The advice may also be limited by budget constraints imposed by others or by site accessibility.

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

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

The contents of this report do not constitute formal design components such as are required, by the Health and Safety Legislation and Regulations, to be included in a Safety Report specifying the hazards likely to be encountered during construction and the controls required to mitigate risk. This design process requires risk assessment to be undertaken, with such assessment being dependent upon factors relating to likelihood of occurrence and consequences of damage to property and to life. This, in turn, requires project data and analysis presently beyond the knowledge and project role respectively of DP. DP may be able, however, to assist the client in carrying out a risk assessment of potential hazards contained in the Comments section of this report, as an extension to the current scope of works, if so requested, and provided that suitable additional information is made available to DP. Any such risk assessment would, however, be necessarily restricted to the (geotechnical / environmental / groundwater) components set out in this report and to their application by the project designers to project design, construction, maintenance and demolition.

Douglas Partners Pty Ltd

Appendix A

About This Report

Appendix B

Drawing 1

Appendix C

Site Photographs

Appendix D

Title Deeds Search Results

Appendix E

Historical Aerial Photographs

Appendix F

SafeWork NSW Search Results

Appendix G

Section 149 (2&5) Certificates

Appendix A

About This Report

About this Report

Douglas Partners

Introduction

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

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

Copyright

Borehole and Test Pit Logs

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

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

Groundwater

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

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

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

Reports

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

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

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

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

About this Report

Site Anomalies

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

Information for Contractual Purposes

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

Site Inspection

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

Sampling Methods

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Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thin-walled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the in-situ soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator. A potential disadvantage of this investigation method is the larger area of disturbance to the site.

Large Diameter Augers

Boreholes can be drilled using a rotating plate or short spiral auger, generally 300 mm or larger in diameter commonly mounted on a standard piling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube samples.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively low reliability, due to the remoulding, possible mixing or softening of samples by groundwater.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from the rate of penetration. Where drilling mud is used this can mask the cuttings and reliable identification is only possible from separate sampling such as SPTs.

Continuous Core Drilling

A continuous core sample can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in weak rocks and granular soils), this technique provides a very reliable method of investigation.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, Methods of Testing Soils for Engineering Purposes - Test 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form.

- In the case where full penetration is obtained with successive blow counts for each 150 mm of, say, 4, 6 and 7 as:

  4,6,7
  N=13

- In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as:

  15, 30/40 mm

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Normally there is a depth limitation of 1.2 m, but this may be extended in certain conditions by the use of extension rods. Two types of penetrometer are commonly used.

- Perth sand penetrometer - a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.
- Cone penetrometer - a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.

Soil Descriptions

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Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are based on Australian Standard AS 1726, Geotechnical Site Investigations Code. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	20 - 63
Medium gravel	6 - 20
Fine gravel	2.36 - 6
Coarse sand	0.6 - 2.36
Medium sand	0.2 - 0.6
Fine sand	0.075 - 0.2

The proportions of secondary constituents of soils are described as:

Term	Proportion	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	20 - 35%	Sandy Clay
Slightly	12 - 20%	Slightly Sandy Clay
With some	5 - 12%	Clay with some sand
With a trace of	0 - 5%	Clay with a trace of sand

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	vs	<12
Soft	s	12 - 25
Firm	f	25 - 50
Stiff	st	50 - 100
Very stiff	vst	100 - 200
Hard	h	>200

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	SPT N value	CPT qc value (MPa)
Very loose	vl	<4	<2
Loose	l	4 - 10	2 -5
Medium dense	md	10 - 30	5 - 15
Dense	d	30 - 50	15 - 25
Very dense	vd	>50	>25

Soil Descriptions

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Transported soils - formed somewhere else and transported by nature to the site; or
- Filling - moved by man.

Transported soils may be further subdivided into:

- Alluvium - river deposits
- Lacustrine - lake deposits
- Aeolian - wind deposits
- Littoral - beach deposits
- Estuarine - tidal river deposits
- Talus - scree or coarse colluvium
- Slopewash or Colluvium - transported downslope by gravity assisted by water. Often includes angular rock fragments and boulders.

Rock Strength

Rock strength is defined by the Point Load Strength Index ($Is_{(50)}$) and refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects. The test procedure is described by Australian Standard 4133.4.1 - 1993. The terms used to describe rock strength are as follows:

Term	Abbreviation	Point Load Index $Is_{(50)}$ MPa	Approx Unconfined Compressive Strength MPa*
Extremely low	EL	<0.03	<0.6
Very low	VL	0.03 - 0.1	0.6 - 2
Low	L	0.1 - 0.3	2 - 6
Medium	M	0.3 - 1.0	6 - 20
High	H	1 - 3	20 - 60
Very high	VH	3 - 10	60 - 200
Extremely high	EH	>10	>200

* Assumes a ratio of 20:1 for UCS to $Is_{(50)}$

Degree of Weathering

The degree of weathering of rock is classified as follows:

Term	Abbreviation	Description
Extremely weathered	EW	Rock substance has soil properties, i.e. it can be remoulded and classified as a soil but the texture of the original rock is still evident.
Highly weathered	HW	Limonite staining or bleaching affects whole of rock substance and other signs of decomposition are evident. Porosity and strength may be altered as a result of iron leaching or deposition. Colour and strength of original fresh rock is not recognisable
Moderately weathered	MW	Staining and discolouration of rock substance has taken place
Slightly weathered	SW	Rock substance is slightly discoloured but shows little or no change of strength from fresh rock
Fresh stained	Fs	Rock substance unaffected by weathering but staining visible along defects
Fresh	Fr	No signs of decomposition or staining

Degree of Fracturing

The following classification applies to the spacing of natural fractures in diamond drill cores. It includes bedding plane partings, joints and other defects, but excludes drilling breaks.

Term	Description
Fragmented	Fragments of <20 mm
Highly Fractured	Core lengths of 20-40 mm with some fragments
Fractured	Core lengths of 40-200 mm with some shorter and longer sections
Slightly Fractured	Core lengths of 200-1000 mm with some shorter and loner sections
Unbroken	Core lengths mostly > 1000 mm

Rock Descriptions

Rock Quality Designation

The quality of the cored rock can be measured using the Rock Quality Designation (RQD) index, defined as:

$$\text{RQD \%} = \frac{\text{cumulative length of 'sound' core sections} \geq \text{100 mm long}}{\text{total drilled length of section being assessed}}$$

where 'sound' rock is assessed to be rock of low strength or better. The RQD applies only to natural fractures. If the core is broken by drilling or handling (i.e. drilling breaks) then the broken pieces are fitted back together and are not included in the calculation of RQD.

Stratification Spacing

For sedimentary rocks the following terms may be used to describe the spacing of bedding partings:

Term	Separation of Stratification Planes
Thinly laminated	< 6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	> 2 m

Symbols & Abbreviations

Douglas Partners

Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core Drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

B	Bedding plane
Cs	Clay seam
Cv	Cleavage
Cz	Crushed zone
Ds	Decomposed seam
F	Fault
J	Joint
Lam	lamination
Pt	Parting
Sz	Sheared Zone
V	Vein

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

Symbols & Abbreviations

Graphic Symbols for Soil and Rock

General


Asphalt


Road base


Concrete


Filling

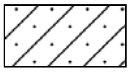
Soils


Topsoil

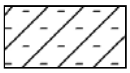

Peat


Clay

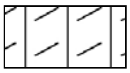

Silty clay

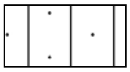

Sandy clay

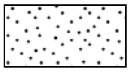

Gravelly clay

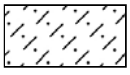

Shaly clay

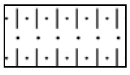

Silt


Clayey silt


Sandy silt

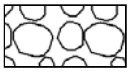

Sand

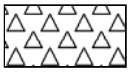

Clayey sand


Silty sand


Gravel


Sandy gravel


Cobbles, boulders

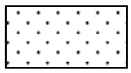

Talus

Sedimentary Rocks

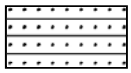

Boulder conglomerate

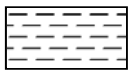

Conglomerate


Conglomeratic sandstone

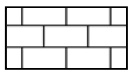

Sandstone


Siltstone


Laminite

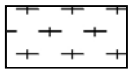

Mudstone, claystone, shale

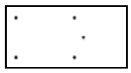

Coal


Limestone

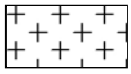
Metamorphic Rocks

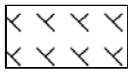

Slate, phyllite, schist

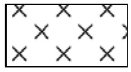

Gneiss

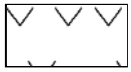

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite

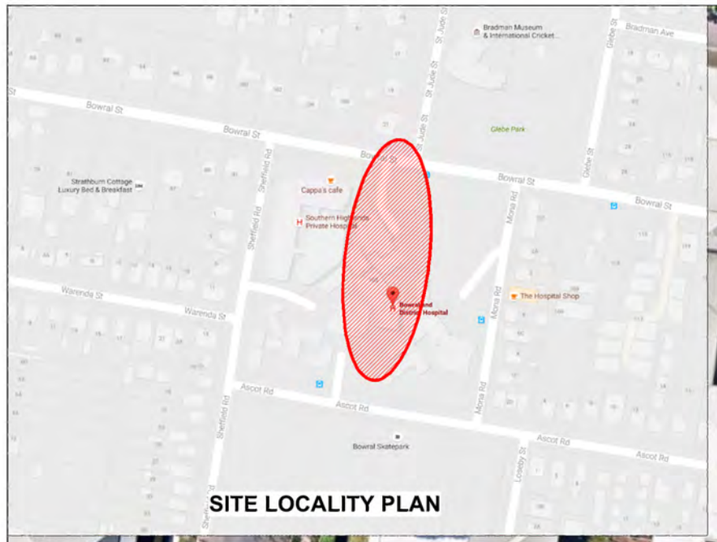

Dacite, epidote


Tuff, breccia


Porphyry

Appendix B

Drawing 1



SITE LOCALITY PLAN

0 50.00

metres

Legend

- Approximate Site Boundary
- Site Features
- Approximate borehole location, DP Project 89199.00

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT: Health Infrastructure	
OFFICE: Wollongong	DRAWN BY: KGH
SCALE: As shown	DATE: 15.09.2016

TITLE: **Site Location and Features**
Proposed Hospital Upgrade
Bowral and District Hospital, Mona Road, Bowral

N
MGA

PROJECT No: 89199.01
DRAWING No: 1
REVISION: A

Appendix C

Site Photographs

Photograph 1 – View of northern car park

Photograph 2 – View of northern car park

Douglas Partners Geotechnics / Environment / Groundwater	**Preliminary Site Investigation** **Proposed Hospital Upgrade** **Bowral and District Hospital, Bowral**	PROJECT: 89199.01 PLATE No: 1 REV: 0
	CLIENT: Health Infrastructure	DATE: 5/08/2016

Photograph 3 – View of batter adjacent to northern car park with potential filling

Photograph 4 – General view of hospital buildings

Photograph 5 – General view of hospital buildings

Photograph 6 – General view of hospital buildings

Douglas Partners Geotechnics / Environment / Groundwater	**Preliminary Site Investigation**	PROJECT:	89199.01
	Proposed Hospital Upgrade	PLATE No:	3
	Bowral and District Hospital, Bowral	REV:	0
	CLIENT: Health Infrastructure	DATE:	5/08/2016

Photograph 7 – View of southern car park

Photograph 8 – Evidence of filling adjacent to southern car park

Douglas Partners Geotechnics / Environment / Groundwater	**Preliminary Site Investigation** **Proposed Hospital Upgrade** **Bowral and District Hospital, Bowral**	PROJECT: 89199.01 PLATE No: 4 REV: 0
	CLIENT: Health Infrastructure	DATE: 5/08/2016

Photograph 9 – View of diesel storage building

Photograph 10 – View of electrical substation box

Douglas Partners Geotechnics / Environment / Groundwater	**Preliminary Site Investigation** **Proposed Hospital Upgrade** **Bowral and District Hospital, Bowral**	PROJECT: 89199.01 PLATE No: 5 REV: 0
	CLIENT: Health Infrastructure	DATE: 5/08/2016

Photograph 11 – View of general waste processing area.

Photograph 12 – View of general waste processing area.

Douglas Partners Geotechnics / Environment / Groundwater	**Preliminary Site Investigation**	PROJECT: 89199.01
	Proposed Hospital Upgrade	PLATE No: 6
	Bowral and District Hospital, Bowral	REV: 0
	CLIENT: Health Infrastructure	DATE: 5/08/2016

Photograph 13 – View of medical waste processing area.

Photograph 14 – View of medical waste processing area.

Appendix D

Title Deeds Search Results

scottASHWOOD PTY.LTD
An InfoTrack Company

ABN: 42 166 543 255
Ph: 02 9099 7400
Fax: 02 9232 7141
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

Summary of Owners Report

LPI **Sydney**

Address: - Bowral Hospital (97-103 Bowral Street), Bowral

Description: - Lot 4 D.P. 858938

As regards the part numbered 1 on the attached cadastre

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
13.1.1890 (1890 to 1965)	Robert Pemberton Richardson (Esquire) Patrick Lindesay Crawford Shepherd (Member of the Legislative Council) Bernard James Newmarch (Physician and Surgeon)	Vol 956 Fol 44
8.2.1965 (1965 to 1965)	Eric Lyle Brake (Trustee? for Berrima District Hospital)	Vol 956 Fol 44
8.2.1965 (1965 to 1994)	The Berrima District Hospital Now The Bowral and District Hospital	Vol 956 Fol 44 Now 1/982387

As regards the part numbered 2 on the attached cadastre

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
19.10.1920 (1920 to 1931)	Arthur William Tooth (Gentlemen) Gavin George (Gentlemen) Edwin Boardman (Gentlemen)	Vol 3113 Fol 16
1.12.1931 (1931 to 1931)	Gavin George (Gentlemen) Edwin Boardman (Gentlemen)	Vol 3113 Fol 16
1.12.1931 (1931 to 1994)	The Berrima District Hospital Now The Bowral and District Hospital	Vol 3113 Fol 16 Now Auto Consol 3113-16

As regards the part numbered 3 on the attached cadastre

This was formerly part of Mona Road subsequently closed, first title issued to The Berrima District Hospital on 20.9.1932

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
20.9.1932 (1932 to 1994)	The Berrima District Hospital Now The Bowral and District Hospital	Vol 4543 Fol 157 Now 1/118995

scottASHWOOD PTY.LTD
An InfoTrack Company

ABN: 42 166 543 255
Ph: 02 9099 7400
Fax: 02 9232 7141
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

Continued as regards the whole of the subject land

Date of Acquisition and term held	**Registered Proprietor(s) & Occupations where available**	**Reference to Title at Acquisition and sale**
14.1.1994 (1994 to Date)	# The Bowral and District Hospital Now # South Western Sydney Area Health Services	1/982387 Auto Consol 3113-16 1/118995 Now 4/858938

# Denotes Current Registered Proprietor

Easements: - NIL

Leases: -

- U978925 31.1.1995 has since expired or have been surrendered – These have not been investigated
- 3084361 23.5.1997 has since expired or have been surrendered – These have not been investigated
- AJ244323 10.2.2015 University of Wollongong – see current title

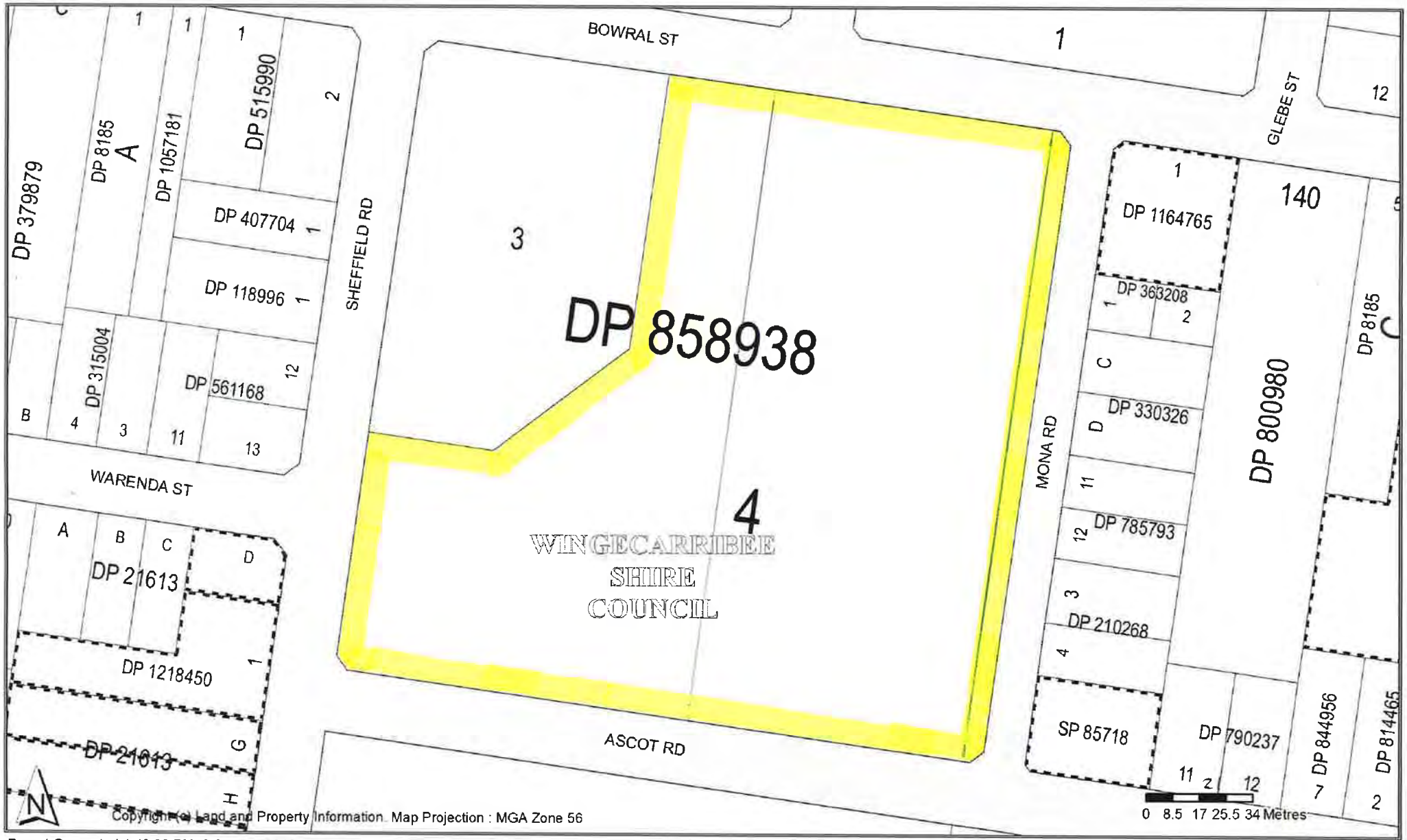
Yours Sincerely
James McDonnell
4 August 2016

NSW Land & Property Information

Cadastral Records Enquiry Report

Requested Parcel : Lot 4 DP 858938 **Identified Parcel** : Lot 4 DP 858938

Locality : BOWRAL **LGA** : WINGECARRIBEE **Parish** : MITTAGONG **County** : CAMDEN



Report Generated 1:49:33 PM, 3 August, 2016

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

PLAN FORM 2

Plan Drawing only to appear in this space

*OFFICE USE ONLY

DP 858938

SIGNATURES, SEALS AND STATEMENTS of intention to dedicate public roads or to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

Kenneth Brown - Chief Exec Officer

Kenneth Watts - Deputy Chairman.

Crown Lands Office Approval

PLAN APPROVED

Authorised Officer

Land District

Paper No.

Name Block

Pages

Council's Certificate

I hereby certify that -

(a) the requirements of the Local Government Act, 1993 (other than the requirements for the registration of plans) and

[illegible] of Part 2 Division 2 of the Water Board Act 1987, or Part 5 Division 2 of the Hunter Water Board (Corporatisation) Act 1991

have been complied with in the applicant's relation to the proposed SUBDIVISION

(insert "new road", "subdivision" or "consolidated lot") set out herein

Subdivision No 2591/95

Date 1-8-1996

Signature

Council File No DA 221/95

*This part of the certificate to be deleted where the application is only for a consolidated lot or the opening of a new road or where the land to be subdivided is wholly outside the areas of operations of the Water Board and the Hunter Water Corporation Ltd.

† Delete if inapplicable

SURVEYOR'S REFERENCE 1623-1 CHECKLIST POLICY 3

M P D.

SURVEY PRACTICE REGULATION 1990 CLAUSE 52 (2)			
COMBINED SEA LEVEL SCALE FACTOR 0.99986 ZONE 56/1			
MARK	EASTING	NORTHING	ACC
PM 33023	246 765·787	6 162 580·053	2
TS 10596 (P)	244 797·639	6 185 357·603	2
SOURCE: DEPT OF CA.L.M DATED APRIL 1995			

I S G CO ORDINATES

(X) BENEFITED BY EASEMENT TO DRAIN WATER 2 WIDE - DP836467

(Y) LAND EXCLUDES MINERALS - SEE CROWN GRANT

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

Registered: 15-5-1996

CA No 2591/95 OF 18.1995

Title System TORRENS

Purpose: SUBDIVISION

Ref Map: W4677-41

Last Plan DP836467

PLAN OF SUBDIVISION OF LOTS 1 & 2 DP 836467

Lengths are in metres. Reduction Ratio 1:1000

LGA WINGECARRIBEE

Locality: BOWRAL

Parish: MITTAGONG

County: CAMDEN

This is sheet 1 of my plan in ... sheets

(Delete if inapplicable)

I, PETER D GILL

of 557 BONG BONG ST BOWRAL

a surveyor registered under the Surveyors Act 1928, hereby certify that the survey represented in this plan is accurate, has been made in accordance with the Survey Practice Regulation 1990 and was completed on 10TH APRIL 1995

* OF COMMON BOUNDARY & CONNECTIONS

(Signature)

Surveyor registered under the Surveyors Act 1928

Datum Line Of Azimuth A-B

Plans used in preparation of survey/compilation

DP 836467

PANEL FOR USE ONLY for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants

IT IS INTENDED TO CREATE PURSUANT TO SEC 88B OF THE CONVEYANCING ACT 1919 AS AMENDED

RIGHT OF FOOTWAY 2 WIDE

P.M. STATUS CHECKED IN L.T.O. 30.4.1996

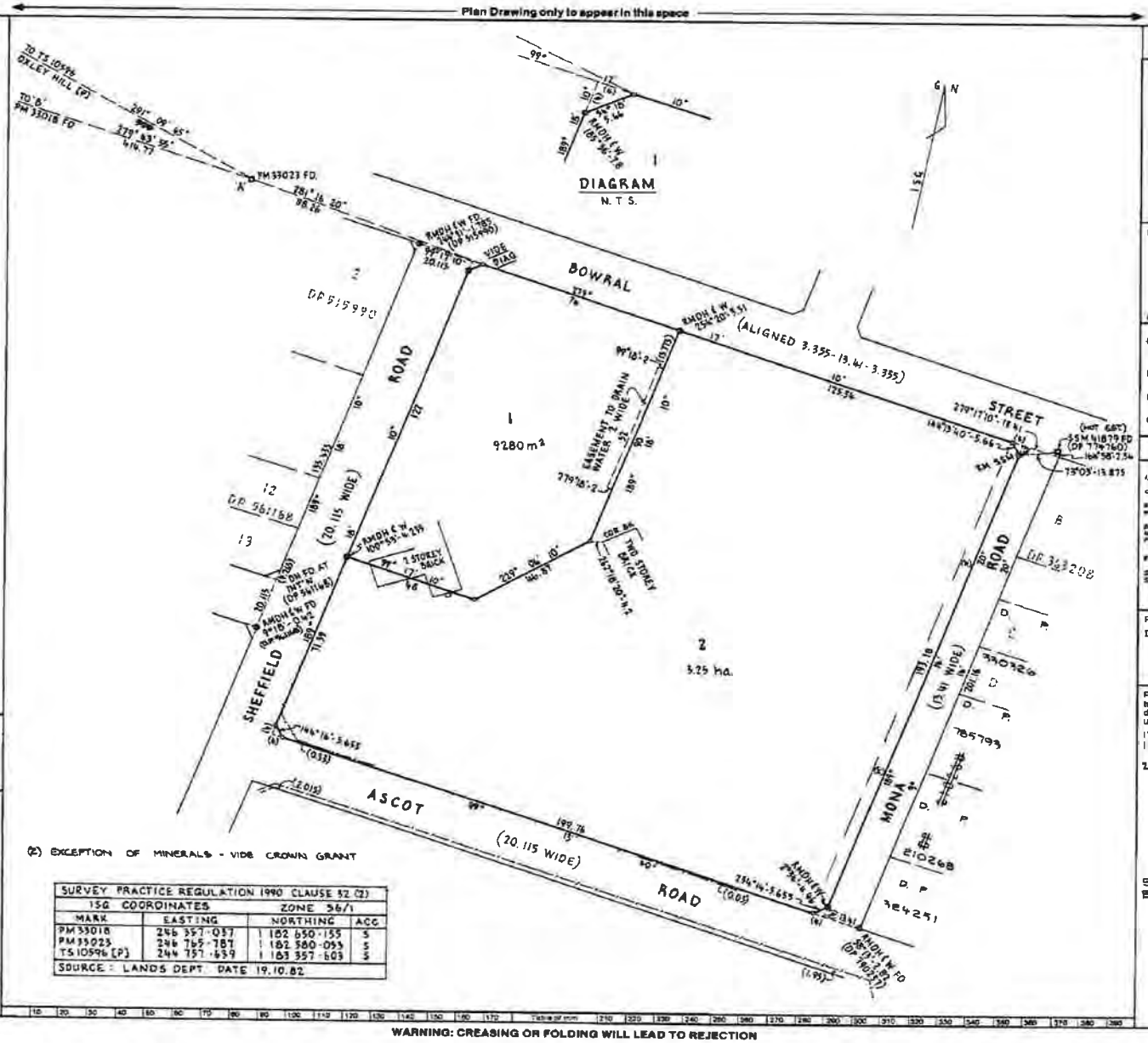
PLAN FORM 2

Plan Drawing only to appear in this space

*OFFICE USE ONLY

DP 836467

SIGNATURE AND SEALS ONLY



SURVEY PRACTICE REGULATION 1990 CLAUSE 52 (2)			
ISG COORDINATES		ZONE 56/1	
MARK	EASTING	NORTHING	ACC
PM 33018	246 357·037	6 182 650·155	5
PM 33023	246 765·787	6 182 580·093	5
TS 10596 (P)	244 757·659	6 183 357·603	5
SOURCE : LANDS DEPT DATE 19.10.82			

Registered 3·2·1994

G.A. No 2331/93 OF 10·12·1993

Title System TORRENS

Purpose SUBDIVISION

Ref Map W4677-41*

Last Plan: D.P. 8185, D.P. 118995, DP 982587

PLAN OF SUBDIVISION OF LOT 1 DP. 982587, LOTS 1-8 INCL. SEC 8, DP. 8185 & LOT 1 DP. 118995

Lengths are in metres. Reduction Ratio 1:1000

L.G.A. WINGECARRIBEE

Locality: BOWRAL

Parish: MITTAGONG

County: CAMDEN

This is sheet 1 of my plan in sheets (Delete if inapplicable)

I, PETER D. GILL

of 357 BONG BONG ST BOWRAL

a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan is accurate and has been made in accordance with the Survey Practice Regulation 1990 and was completed on

the 2ND NOVEMBER 1993

Signature

Surveyor registered under Surveyors Act 1929, as amended

Datum Line of Azimuth: A-B

Origin of Co-ordinates:

Plans used in preparation of survey/compilation

DP's 8185 118995 515990 561168 774760 790237 982587

PANEL FOR USE ONLY for statements of intention to dedicate public roads, to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

IT IS INTENDED:
1. TO DEDICATE THE SPLAYED CORNERS AS ROAD
2. TO CREATE PURSUANT TO SEC. 88B OF THE CONVEYANCING ACT 1919 AS AMENDED:
- EASEMENT TO DRAIN WATER 2 WIDE

STATUS OF SSM CONFIRMED BY S.C.I.M.S. 18·1·1994

Crown Lands Office Approval

PLAN APPROVED ..... Authorised Officer

Land District .....

Paper No .....

Field Book ..... pages .....

Council Clerk's Certificate

I hereby certify that —

(a) the requirements of the Local Government Act, 1993, (other than the requirements for the registration of plans), and

(b) the requirements of section 340 of the * Metropolitan Water, Sewerage and Drainage Act, 1924, as amended, * Hunter District Water, Sewerage and Drainage Act, 1938, as amended

have been complied with by the applicant in relation to the proposed SUBDIVISION

(insert 'new road', 'subdivision', or 'consolidation') over our harbour

Subdivision No. 2331/93

Date 10·12·1993

(Signature) .....

District Clerk

Council File No. D.1691.51

* This part of certificate to be deleted where the application is only for a subdivision not for the opening of a new road or where the land to be subdivided is wholly outside the areas of operations of the Metropolitan or Sewerage and Drainage Board and the Hunter District Water Corporation.

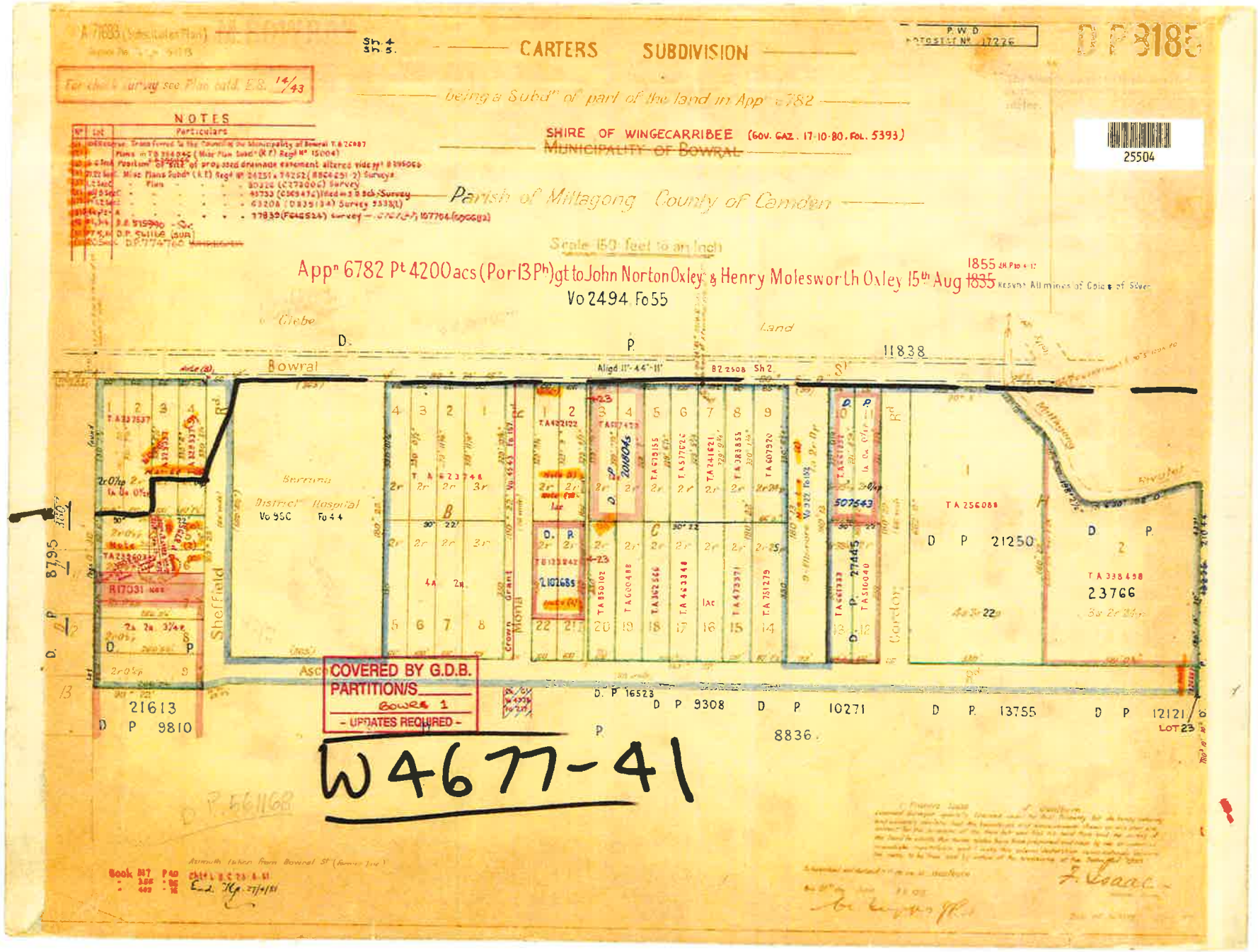
Delete if inapplicable.

SURVEYOR'S REFERENCE: 11623 CHECKLIST

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

Req:R161817 /Doc:DP 0836467 P /Rev:08-Feb-1994 /Sts:OK OK /Pgs:ALL /Prt:03-Aug-2016 13:56 /Seq:1 of 1

Ref:Bowral /Src:M



Historical Title

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
3/8/2016 2:34PM

FOLIO: 1/982387

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 956 FOL 44

Recorded	Number	Type of Instrument	C.T. Issue
21/8/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
12/12/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
14/1/1994	I947725	CHANGE OF NAME	EDITION 1
4/2/1994	DP836467	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

Bowral PRINTED ON 3/8/2016

Historical Title

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
3/8/2016 2:44PM

FOLIO: AUTO CONSOL 3113-16

Recorded	Number	Type of Instrument	C.T. Issue
25/11/1993		CONSOL HISTORY RECORD CREATED FOR AUTO CONSOL 3113-16 PARCELS IN CONSOL ARE: 1-8/B/8185.	
14/1/1994	I947725	CHANGE OF NAME	EDITION 1
4/2/1994	DP836467	DEPOSITED PLAN	AUTO CONSOL CANCELLED

*** END OF SEARCH ***

Bowral PRINTED ON 3/8/2016

Historical Title

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
3/8/2016 2:34PM

FOLIO: 1/118995

First Title(s): VOL 4543 FOL 157
Prior Title(s): VOL 4543 FOL 157

Recorded	Number	Type of Instrument	C.T. Issue
21/2/1989	DP118995	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
18/2/1991		AMENDMENT: VOL FOL INDEX	
14/1/1994	I947725	CHANGE OF NAME	EDITION 1
4/2/1994	DP836467	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

Bowral

PRINTED ON 3/8/2016

Historical Title

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
3/8/2016 2:34PM

FOLIO: 1/836467

First Title(s): OLD SYSTEM
Prior Title(s): 1/982387

Recorded	Number	Type of Instrument	C.T. Issue
7/2/1994	DP836467	DEPOSITED PLAN	FOLIO CREATED EDITION 1
31/1/1995	U978925	LEASE	EDITION 2
15/5/1996	DP858938	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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Historical Title

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
3/8/2016 2:34PM

FOLIO: 2/836467

First Title(s): OLD SYSTEM VOL 4543 FOL 157
Prior Title(s): 1/118995 1/982387
VOL 3113 FOL 16

Recorded	Number	Type of Instrument	C.T. Issue
7/2/1994	DP836467	DEPOSITED PLAN	FOLIO CREATED EDITION 1
15/5/1996	DP858938	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

Bowral PRINTED ON 3/8/2016

Historical Title

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
3/8/2016 2:34PM

FOLIO: 4/858938

First Title(s): OLD SYSTEM VOL 4543 FOL 157
Prior Title(s): 1-2/836467

Recorded	Number	Type of Instrument	C.T. Issue
15/5/1996	DP858938	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
16/5/1996	2117720	SURRENDER OF LEASE	EDITION 1
23/5/1997	3084361	LEASE	EDITION 2
10/2/2015	AJ244323	LEASE	EDITION 3

*** END OF SEARCH ***

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Title Search

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 4/858938

SEARCH DATE	TIME	EDITION NO	DATE
3/8/2016	2:37 PM	3	10/2/2015

LAND

LOT 4 IN DEPOSITED PLAN 858938
AT BOWRAL
LOCAL GOVERNMENT AREA WINGECARRIBEE
PARISH OF MITTAGONG COUNTY OF CAMDEN
TITLE DIAGRAM DP858938

FIRST SCHEDULE

SOUTH WESTERN SYDNEY AREA HEALTH SERVICE

SECOND SCHEDULE (6 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 LAND EXCLUDES MINERALS AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM - SEE CROWN GRANT
3 DP836467 EASEMENT TO DRAIN WATER 2 WIDE AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
4 DP836467 EASEMENT TO DRAIN WATER 2 WIDE APPURTENANT TO THE PART SHOWN SO BENEFITED IN THE TITLE DIAGRAM
5 DP858938 RIGHT OF FOOTWAY 2 WIDE APPURTENANT TO THE LAND ABOVE DESCRIBED
6 AJ244323 LEASE TO UNIVERSITY OF WOLLONGONG PREMISES KNOWN AS UOW GSM OFFICES, OLD DENTAL BUILDING, BOWRAL AND DISTRICT HOSPITAL, MONA ROAD, BOWRAL. EXPIRES: 31/7/2024.

APPURTENANT TO LOT 4 D.P. 858938

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Bowral PRINTED ON 3/8/2016

Appendix E

Historical Aerial Photographs

Douglas Partners Geotechnics / Environment / Groundwater	Client: TSA Management Pty Ltd		Aerial Photograph - 1963 Contaminated Land Preliminary Site Investigation Proposed Hospital Upgrade	Project No.	89199.01
	Office: Wollongong	Drawn by: JMG		Drawing No.	1
	Scale: NTS	Date: 12.09.2016		Revision:	A

Douglas Partners Geotechnics / Environment / Groundwater	Client:	TSA Management Pty Ltd		Aerial Photograph - 1972	Project No. 89199.01
	Office:	Wollongong	Drawn by: JMG	Contaminated Land Preliminary Site Investigation	Drawing No. 2
	Scale:	NTS	Date: 12.09.2016	Proposed Hospital Upgrade	Revision: A

Douglas Partners Geotechnics / Environment / Groundwater	Client: TSA Management Pty Ltd		Aerial Photograph - 1982 Contaminated Land Preliminary Site Investigation Proposed Hospital Upgrade
	Office: Wollongong	Drawn by: JMG	
	Scale: NTS	Date: 12.09.2016	

Project No.	89199.01
Drawing No.	3
Revision:	A

Douglas Partners Geotechnics / Environment / Groundwater	Client: TSA Management Pty Ltd		Aerial Photograph - 1994	Project No.	89199.01
	Office: Wollongong	Drawn by: JMG	Contaminated Land Preliminary Site Investigation	Drawing No.	4
	Scale: NTS	Date: 12.09.2016	Proposed Hospital Upgrade	Revision:	A

Douglas Partners Geotechnics / Environment / Groundwater	Client: TSA Management Pty Ltd		Aerial Photograph - 2006	Project No.	89199.01
	Office: Wollongong	Drawn by: JMG	Contaminated Land Preliminary Site Investigation	Drawing No.	5
	Scale: NTS	Date: 12.09.2016	Proposed Hospital Upgrade	Revision:	A

Douglas Partners Geotechnics / Environment / Groundwater	Client: TSA Management Pty Ltd		Aerial Photograph - 2015	Project No.	89199.01
	Office: Wollongong	Drawn by: JMG	Contaminated Land Preliminary Site Investigation	Drawing No.	6
	Scale: NTS	Date: 12.09.2016	Proposed Hospital Upgrade	Revision:	A

Appendix F

SafeWork NSW Search Results

NSW GOVERNMENT | SafeWork NSW

SafeWork NSW
92-100 Donnison Street, Gosford, NSW, 2250
Locked Bag 2906, Lisarow, NSW, 2252 |
Customer Service Centre **13 10 50**
licensing@safework.nsw.gov.au | www.safework.nsw.gov.au

Our Ref: D16/656840
Your Ref: Amanda Britton

24 August 2016

Attention: Amanda Britton
Douglas partners Pty Ltd
PO BOX 486
Unanderra NSW 2526

Dear Ms Britton,

RE SITE: Lot 4 DP 858938 Mona Rd Bowral NSW

I refer to your site search request received by SafeWork NSW on 16 August 2016 requesting information on Storage of Hazardous Chemicals for the above site.

Enclosed are copies of the documents that SafeWork NSW holds on record number 35/004318 relating to the storage of Hazardous Chemicals at the above-mentioned premises.

For further information or if you have any questions, please call our Customer Service Centre on 13 10 50 or email licensing@safework.nsw.gov.au

Yours sincerely,

Brent Jones
Customer Service Officer
Customer Service Centre - Operations
SafeWork NSW