**RP Infrastructure** 

## Stage 1 and Stage 2 Site Contamination Assessment

Tamworth Health Service Redevelopment: Carpark B Works

Dean Street, Tamworth

Report No. RG\$32576.1-AO 5 September 2022

# REGIONAL GEOTECHNICAL SOLUTIONS



RG\$32576.1-AO

5 September 2022

RP Infrastructure Level 19, 9 Hunter Street SYDNEY NSW 2300

Attention: Yonis Ahmad

Dear Yonis

### RE: Tamworth Health Service Redevelopment: Carpark B Works – Dean Street, Tamworth Stage 1 and Stage 2 Site Contamination Assessment

As requested, Regional Geotechnical Solutions Pty Ltd (RGS) has undertaken a Stage 1 and Stage 2 site contamination assessment for the proposed upgrade of Carpark B that is located within Tamworth Hospital at Dean Street, Tamworth NSW.

The assessment found that Carpark B is suitable for the proposed development in its current state.

The work presented herein was reviewed by Dr David Tully CEnvP SC. A copy of Dr Tully's letter pertaining to the review is appended to the report.

If you have any questions regarding this project, or require any additional consultations, please contact the undersigned.

For and on behalf of Regional Geotechnical Solutions Pty Ltd

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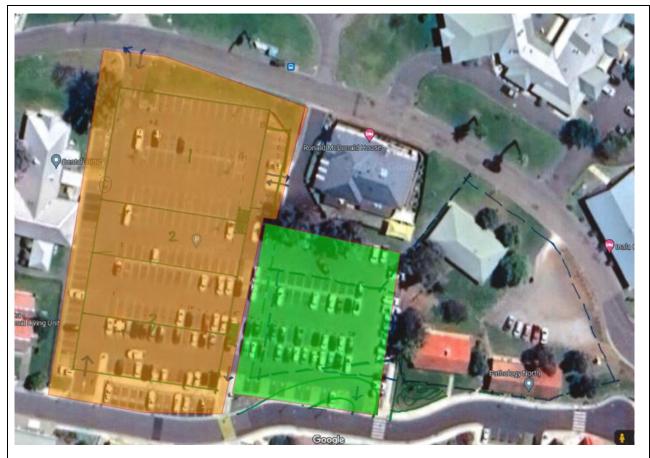
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#### **1** INTRODUCTION

#### 1.1 Background

Regional Geotechnical Solutions Pty Ltd (RGS) has undertaken Stage 1 and Stage 2 Site Contamination Assessments (SCA) for the upgrades proposed within the existing Carpark B that is located within Tamworth Hospital at Dean Street, Tamworth NSW.

RGS has previously undertaken geotechnical and site contamination works for the A2 Banksia Unit development that is located directly to the east of Carpark B. It is understood that the large sealed carpark to the west of this area is to be developed which will include the construction of a clinic floor over the eastern portion and a multistorey carpark over the western portion. Details of the proposed structures are not available at this stage. The proposed development area is illustrated below.



**Diagram 1:** Proposed development over existing sealed carpark. The proposed multistorey carpark is shaded orange. The proposed clinic floor is shaded green.

The hospital site is identified as Lot 1 DP 1181268 and occupies approximately 20 hectares. The subject portion of the site which is to be redeveloped is located at the northern end of the facility and occupies approximately 7,500m<sup>2</sup>. The layout of the subject area is illustrated above and in the attached figures.

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The Stage 1 and Stage 2 site contamination assessment is required to evaluate past and present potentially contaminating activities and contamination types and to assess the site's suitability for the proposed development from a contamination perspective.

#### 1.2 Objectives

The objectives of the SCA were to:

- Characterise the nature and extent of soil contamination present on the site (if any);
- Assess the suitability of the site for the proposed development; and
- Provide recommendations for on-site management, the need and options for remediation and any further investigation and testing that is required.

#### 1.3 Scope of Works

In accordance with the relevant sections of the National Environmental Protection (Assessment of Site Contamination) Measure 1999 (Amended 2013), the assessment involved the following process:

- A brief study of site history, with the aim of identifying past activities on or near the site that might have the potential to cause contamination;
- Review of available recent and historical aerial photography for the last 50 years;
- A search of NSW EPA records, or contaminated land notifications on the site;
- Government records of groundwater bores in the area;
- Site walkover to assess visible surface conditions and identify any evidence of contamination, or past activities that may cause contamination;
- Using the above information, characterise the site into Areas of Environmental Concern, in which the potential for contamination has been identified, and nominate Chemicals of Concern that might be associated with those activities;
- Undertake targeted sampling and analysis at the selected Areas of Concern to evaluate the presence and extent of contamination (if any);
- Analyse samples for a suite of potential contaminants associated with the past activities; and
- Evaluate the results against industry accepted criteria for residential land use with minimal opportunities for soil access (Residential B land use guideline criteria have been adopted for this assessment as a conservative measure).

#### 1.4 Site Identification

General site information is provided below in Table 1. The site location is shown in Figure 1.

Site location:	Dean Street, Tamworth
Approximate site area:	20 Hectares (total site) 7,500m² (proposed redevelopment portion, i.e., Carpark B)
Title Identification Details:	Lot 1 DP 1181268
Current Ownership:	Health Administration Corporation
Current Landuse:	Healthcare facility (hospital)
Proposed Landuse:	Ongoing healthcare facility
Adjoining Site Uses:	<ul> <li>Within hospital:         <ul> <li>North, Aged Care Assessment Team</li> <li>Northeast, Ronald McDonald House accommodation</li> <li>East, staff accommodation, to be redeveloped as A2 Banksia Mental Health Unit</li> <li>South, rehabilitation ward</li> <li>West, dental clinic</li> </ul> </li> <li>Surrounding area:         <ul> <li>Vacant land to the north</li> <li>South of Johnston Street, Tamwell Medical Centre and residential properties</li> <li>East of Smith Street, vacant land/carparks</li> <li>West of Dean Street, Tamworth Correctional Centre</li> </ul> </li> </ul>
Government Area:	Tamworth Regional Council

#### Table 1: Summary of Site Details

#### 2 SITE DESCRIPTION

#### 2.1 Topography and Drainage

The site is located within Tamworth Hospital, off Dean Street, Tamworth.

The site is located within undulating residual topography on the mid-slope of a south facing hill. The surrounding slopes generally grades at about 5° to 8°.

The proposed development area is within the existing Carpark B, that comprises an asphalt wearing surface. The carpark has been cut into the slope. There are brick retaining walls running along the northern and eastern carpark boundaries. The carpark is graded to the west.



#### 2.2 Geology

Reference to the 1:250,000 Geology Map of Tamworth indicates that the subject site is underlain by the Moore Creek Limestone Member that comprises cherty argillite, limestone, greywacke, and mudstone.

The materials encountered during the investigation are summarised below. Further details are presented on the attached engineering logs (Appendix B).

Wearing Surface: Asphalt, 30mm to 80mm; overlying

- Fill: Pavement: Sandy Clayey GRAVEL, fine to medium grained, fine to medium grained sand, angular gravel to depths ranging from 0.1m to 0.5m; overlying
- **Colluvial Soil:** CLAY and Gravelly CLAY, medium plasticity, fine to medium grained angular gravel, very stiff to hard; or
- **Residual Soil:** CLAY and Gravelly CLAY, medium plasticity, fine to medium grained angular gravel, very stiff to hard.

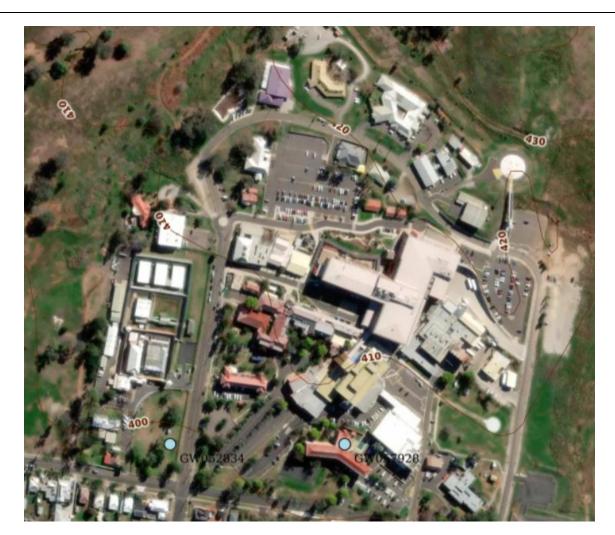
The residual soil graded into weathered siltstone from depths ranging from 0.1m to 8.7m.

#### 2.3 Hydrogeology

A groundwater bore search on the NSW Water Information website,

<u>http://waterinfo.nsw.gov.au/gw/</u> indicates there is a licenced groundwater bore (GW057928) located within the hospital approximately 230m south of Carpark B. The drill records indicate a water bearing zone of 26.2m to 26.5m. There is an additional bore (GW052834) located to the west that recorded a water bearing zone of 24.5m to 34m. The bore locations are shown on Diagram 2 below.

Based on RGS' experience in the region, regional groundwater depth in this area is typically about 10m below ground surface. However, perched water tables resulting from recent rainfall events within the upper 5m profile may be expected.



**Diagram 2:** Licensed groundwater bores located within the hospital complex to the south of Carpark B and to the west of the hospital.

#### 2.4 Site History

#### 2.4.1 Historical Aerial Photography

Available aerial photographs of the site were reviewed to assist in identifying past land uses that may contribute to site contamination. The results of the review are summarised in Table 2.

Year	Site	Surrounding Land
1976	The hospital site has been developed with some buildings similar to the existing hospital layout. The subject area is occupied by some buildings and vacant land.	Land surrounding the hospital is occupied by residential developments to the south and west. Vacant to the north and east.



	l .	r
1984	The western portion of the existing carpark has been constructed. The eastern portion is occupied by one building and vegetated with scattered trees.	Additional/upgrades to hospital buildings have been undertaken. Surrounding area is similar to the previous photograph.
1989	Extension to the carpark in the northeast corner.	Minor upgrades to hospital roads and buildings, and increased vegetation. Surrounding area is similar to the previous photograph.
2013 (Google Earth)	The carpark is sealed and extended to the north, a northern and southern entrance has been constructed.	The Ronald McDonald House has been constructed directly northeast of the carpark. The area to the southeast has been cleared for the construction of the Emergency Department building. Continued residential developments to the south and west of the hospital. Carpark and other earthworks undertaken to the east.
2015 (Google Earth)	Carpark is similar to the previous photograph.	The roads leading to the northern and southern entrances of the carpark have been upgraded and sealed. The Emergency Department building has been completed. Area surrounding the hospital is simar to the previous photograph.
February 2016 (Google Earth)	Buildings in the eastern portion of the existing carpark have been demolished and the area has been cleared in preparation of the eastern carpark extension.	Similar to the previous.
October 2016 (Google Earth)	Eastern portion of the carpark has been constructed in same layout to the existing.	Similar to the previous.
2022 (Google Earth)	Similar to the previous.	Similar to the previous.



#### 2.4.2 Site Observations

Field work was undertaken on 20 and 21 August 2022. Observations from a contamination perspective made during the site visit are summarised below:

- The subject portion of the site is mainly covered by an asphalt wearing surface. There are minor garden beds vegetated with grass running along the northern boundary, and through the central portion of the carpark;
- Concrete curb and gutter are present around the boundary of the carpark;
- No other visual (such as oil staining) or olfactory evidence of contamination was observed.

A selection of images of the site is presented below.



Retaining wall and grassed garden bed running along the northern boundary.



Looking east over the northern portion of the existing carpark.



Looking west over the northern portion of the existing carpark.



Looking east over the southeast portion of the existing carpark. The Ronald McDonald House is on the left.

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Looking south at the southeast exit of the existing carpark. The Emergency Department building is in the background.



Looking west over the southern portion of the existing carpark.

#### 2.4.3 NSW EPA Records

A check with the NSW Office of Environment and Heritage website (<u>www.environment.nsw.gov.au</u>) revealed that no notices have been issued on the site under the Contaminated Land Management Act (1997).

#### 2.4.4 Land Title Search

A list of past registered proprietors and trustees of the site was obtained from the Land Titles Office. A summary of the title details is included in Appendix A.

The title history search revealed the following:

1882 – 1931	Philip Gidley King
	David Williamson Irvine
	Nathan Cohen
	Daniel Regan
	Thomas Matthew Newman
	(Trustees of Public Hospital Tamworth)
1931 – 1931	Thomas Matthew Newman
	(Trustee of Public Hospital Tamworth)
1931 – 1991	The Tamworth District Hospital
1991 – 1998	The Tamworth Base Hospital



1998 – 2013	New England Health Services
	(Formerly The Tamworth Base Hospital)
2013 – to date	Health Administration Corporation

#### 2.4.5 Site History Summary

Based on available data the chronological development of the site is summarised below:

- The land has been owed by the hospital or trustees of the hospital since 1882;
- The general layout of the hospital and some of the existing hospital buildings were constructed prior to 1976;
- The western portion of the existing Carpark B started being used as a carpark between 1976 and 1984 and was sealed and extended between 1989 and 2013;
- The eastern portion of the existing Carpark B was occupied by buildings that were demolished in 2016; and
- Construction of the eastern portion of Carpark B was undertaken in 2016.

#### 3 FIELD AND LABORATORY INVESTIGATIONS

#### 3.1 Sampling Plan

The NSW EPA (2022) Sampling design part 1 - application recommend a minimum of 18 sampling locations to characterise a site of this size (7,500m<sup>2</sup>).

Based on the above, 36 soil samples were collected from 18 boreholes (BH1 to BH18).

#### 3.2 Field Work

Field work for the assessment was undertaken on 20 and 21 August 2022 and included:

- Site walkover to assess visible surface conditions and identify evidence of contamination, or past activities that may cause contamination (if any);
- The drilling of 18 boreholes, designated BH-CB1 TO BH-CB18, that were logged and sampled by a Senior Geotechnical Engineer from RGS.

The locations of the sampling points are shown on Figure 3. They were obtained on site and located by measurement relative to existing site features.

Soil samples were taken from the pavement fill and the underlying natural material using disposable gloves sampling off the drill rig auger that was decontaminated between sampling points using Decon90 detergent. The samples were collected in acid-rinsed 250mL glass jars and zip lock bags and placed in an ice-chilled cooler box.



#### 3.2.1 Laboratory Analysis

Samples were transported under chain-of-custody conditions to ALS Laboratory Group, a NATA accredited specialist chemical testing laboratory, to be analysed for the following suite of contaminants;

- Polycyclic Aromatic Hydrocarbons (PAH);
- Total Recoverable Hydrocarbons (TRH);
- Benzene, Toluene, Ethyl-benzene, Xylenes (BTEX);
- Organochlorine and Organophosphorus Pesticides (OC/OPs);
- Heavy metals (arsenic, cadmium, chromium, cobalt, copper, lead, mercury, and zinc);
- Polychlorinated Biphenyls (PCB); and
- Presence and quantification of asbestos.

The results are presented in Appendix C.

#### 3.3 Data Quality Objectives

The Data Quality Objectives (DQOs) are presented in Table 3.

DQO	Details of Process
State the Problem	A Stage 1 and Stage 2 SCA is required to assess the suitability of the site for the proposed multistorey carpark/clinic development from a contamination perspective.
Identify the Decision	<ul> <li>The principal study questions that are:</li> <li>What is the nature and extent of soil contamination on the subject land (if any)?; and</li> <li>Is the land suitable for the proposed hospital redevelopment from a contamination viewpoint?</li> </ul>
Identify Inputs to the Decision	<ul> <li>The primary inputs are:</li> <li>Site history study;</li> <li>Site walkover assessment;</li> <li>Chemical analysis of selected soil samples; and</li> <li>Results summary.</li> </ul>
Define the Boundary of the Assessment	<ul> <li>The spatial boundaries are limited to the Carpark B boundaries as shown on Figure 2;</li> <li>The investigation and screening levels for a Residential B land use scenario (limited access to soil) as a conservative measure.</li> </ul>

#### Table 3 – Data Quality Objectives

Develop a Decision Rule	<ul> <li>The decision rules for the investigation are:</li> <li>If concentrations of contaminants in soil exceed the adopted investigation and screening levels for a Residential B land use scenario (as a conservative measure), then further assessment may be required;</li> <li>Decision criteria for QA/QC measures are defined in Section 5. A decision on the acceptance of analytical data will be made on the basis of the data quality indicators (DQIs) in the context of precision, accuracy, representativeness, completeness and comparability (PARCC) parameters as follows:</li> <li>Precision: NATA registered laboratories were used following NATA endorsed methods. An appropriate number of intralaboratory samples were collected and analysed (following ASC NEPM guidance), the results of which are considered to be satisfactory;</li> <li>Accuracy: The laboratory limit or reporting (LOR) was appropriate for the screening criteria utilised. NATA registered laboratories were used following sincluding appropriate method blanks, laboratory control samples, laboratory spikes and duplicates the results of which are considered to be satisfactory.</li> <li>Representativeness – The samples were received by the laboratories in good condition. The data obtained is considered to be representative of the soils present on site;</li> <li>Completeness – Experienced field staff were utilised to undertake the sampling and keep appropriate documentation. Samples were in proper custody between the field and reaching the laboratory. The laboratories performed the tests requested. The data obtained from the field investigations is considered to be relevant and usable; and</li> <li>Comparability – Sample holding times were met and samples were properly and adequately preserved. Field sampling and</li> </ul>
	handling procedures were followed. The data collected is considered to be comparable.
Specify Acceptable Limits on Decision Errors	<ul> <li>Acceptable limits for QA/QC measures are defined in Section 5;</li> <li>Acceptable investigation and screening levels are those for a Residential B land use scenario; and</li> <li>Specific limits are in accordance with the appropriate NSW EPA guidelines including indicators of data quality and standard procedures for field sampling and handling.</li> </ul>
Optimise the Design for Obtaining Data	Based on the above steps of the DQO process. The design for obtaining the required data (i.e., proposed field and laboratory investigations) is presented in Section 3.1.



#### 4 GUIDELINES AND ASSESSMENT CRITERIA

Assessment as outlined in NSW EPA Guidelines for Consultants Reporting on Contaminated Land (2020).

To evaluate results, and for guidance on assessment requirements, the assessment adopted the guidelines provided in the National Environment Protection (Assessment of Site Contamination) Measure as amended in 2013 (NEPM 2013). The NEPM document provides a range of guidelines for assessment of contaminants for various land use scenarios.

The proposed future land use is for an ongoing rural healthcare facility. As such, comparison with the NEPM guideline Health Investigation and Screening Levels for Residential B (high rise buildings and apartments with limited access to soil) land use is considered appropriate for this site as a conservative measure. In accordance with the NEPM guideline the following criteria were adopted for this assessment:

- Health Investigation Levels (HILs) for Residential 'B' land use (HIL-B) were used to assess the
  potential human health impact of heavy metals and polycyclic aromatic hydrocarbons
  (PAHs);
- Health Screening Levels (HSLs) for coarse textured (sand) or fine textured (silt and clay) soils on a Residential B site were adopted as appropriate for the soils encountered to assess the potential human health impact of petroleum hydrocarbons and benzene, toluene, ethylbenzene and xylene (BTEX) compounds;
- Ecological Investigation Levels (EILs) for urban residential and public open space land use were used for evaluation of the potential ecological / environmental impact of heavy metals and PAHs;
- Ecological Screening Levels (ESLs) for coarse textured (sand) soils or fine textured (silt and clay) soils on a Residential B land use site were adopted as appropriate for the soils encountered, to assess the potential ecological / environmental impact of petroleum hydrocarbons and BTEX compounds.

In accordance with NEPM 2013, exceedance of the respective criteria does not necessarily deem that remediation or clean-up is required but is a trigger for further assessment of the extent of contamination and associated risks. The adopted criteria are presented in the results summary table in Appendix C.

#### 5 QUALITY ASSURANCE / QUALITY CONTROL

Samples were obtained using industry accepted protocols for sample treatment, preservation, and equipment decontamination. Sampling equipment was decontaminated between sample locations and a clean pair of nitrile gloves used for the collection of each sample into laboratory supplied glass sampling jars.

Samples were placed on ice on-site and maintained on ice during transport to the testing laboratories. Two duplicate samples were collected and submitted to the laboratory for analysis for quality control purposes as follows:

- Duplicate (CB-D2) Replicate of primary sample BH-CB13 0.3 0.4m; and
- Duplicate (CB-D3) Replicate of primary sample BH-CB17 0.4 0.5m.

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The Relative Percent Differences (RPDs) were calculated for the duplicate samples and are presented in the results summary table in Appendix B.

The duplicate RPDs were within the control limit of 40% (with the exception of Lead, Nickel, and Zinc in sample CB-D2) and indicated generally good correlation between the primary and duplicate samples.

It is noted that low analyte concentrations exaggerate the percentage differences with respect to small total concentration differences, therefore where results for the primary and duplicate, were less than 10 times the laboratory limit of reporting (LOR), the RPDs have been disregarded. The RPD for Lead, Nickel, and Zinc in sample CB-D2, which exceeded the 40% control limit as outlined above were disregarded on this basis.

In addition to the field quality control procedures, the laboratory conducted internal quality control testing including surrogates, blanks, and laboratory duplicate samples. The results are presented with the laboratory test results in Appendix C.

All laboratory quality control data is within acceptable limits for the tests carried out. Therefore, on the basis of the results of the field and laboratory quality control procedures and testing, the data is considered to reasonably represent the concentrations of contaminants in the soils at the sample locations at the time of sampling and the results can be adopted for this assessment.

#### 6 RESULTS

#### 6.1.1 Subsurface Conditions

The soil types recorded in surface samples are summarised below in Table 4.

#### Table 4: Summary of Subsurface Conditions (Surface Samples)

Sample ID	Description
BH-CB2 0.04-0.1	
BH-CB6 0.04-0.1	
BH-CB12 0.05-0.1	Fill (Pavement Gravel): Sandy Clayey GRAVEL, fine to medium grained angular gravel, fine to medium grained sand
BH-CB14 0.05-0.1	
BH-CB16 0.05-0.1	
BH-CB18 0.05-0.1	
BH-CB4 0.04-0.1	
BH-CB7 0.06-0.1	
BH-CB1 0.4-0.5	
BH-CB1 0.5-0.6	Residual/Colluvial Soil: CLAY and Silty CLAY, medium to high plasticity, with some fine grained angular gravel
BH-CB2 0.5-0.6	

BH-CB3 0.5-0.6
BH-CB4 0.5-0.6
BH-CB5 0.4-0.5
BH-CB5 0.5-0.95
BH-CB6 0.5-0.6
BH-CB7 0.5-00.6
BH-CB8 0.5-0.6
BH-CB9 0.45-0.5
вн-св9 0.5-0.6
BH-CB10 0.3-0.4
BH-CB11 0.5-0.6
BH-CB12 0.5-0.6
BH-CB13 0.3-0.4
BH-CB14 0.5-0.6
BH-CB15 0.1-0.2
BH-CB17 0.4-0.5
BH-CB17 0.5-0.6
BH-CB18 0.5-0.6

#### 6.1.2 Laboratory Results

An appraisal of the laboratory test results presented in Appendix C is provided below with reference to the adopted soil investigation and screening levels discussed in Section 4.

- Concentrations of heavy metals were either below the laboratory limit of reporting or below the adopted health investigation criteria for a Residential B site in each of the samples analysed;
- Concentrations of TRH, PAH, BTEX and OP pesticides were below the laboratory limit of reporting in each of the samples analysed except sample BH-CB14 0.05-0.1 that had elevated levels of TRH C<sub>34</sub>-C<sub>40</sub> fraction, sample BH-CB16 0.05-0.1 that had elevated levels of TRH C<sub>16</sub>-C<sub>34</sub> fraction and TRH C<sub>34</sub>-C<sub>40</sub> fraction, and sample BH-CB18 0.05-0.1 that had elevated levels of TRH C<sub>34</sub>-C<sub>40</sub> fraction, however the levels were well below the adopted ecological investigation criteria and management limits for a Residential (B) site.
- Concentrations of PCB and OC pesticides were either below the laboratory limit of reporting or below the adopted health investigation criteria for a Residential B site in each of the samples analysed; and
- Asbestos was not detected in the remaining soil samples.

#### 6.2 Conceptual Site Model

Based on the site observations and knowledge obtained about site activities as outlined above, a conceptual site model (CSM) has been developed.

#### 6.2.1 Potential Sources of Contamination

Potential Areas of Environmental Concern (AECs) and Chemicals of Concern (COCs) identified for the assessment are outlined in Table 5.

AEC	Mode of Potential Contamination	Potential COCs	Likelihood of Contamination
<b>AEC1:</b> Soils in the vicinity of structures previously demolished	Potentially hazardous building materials	Lead and asbestos	Moderate
AEC2: Fill placed for the carpark	Importation of potentially contaminated fill	Heavy Metals, TPH, BTEX, PAH, PCB, OC/OPP and asbestos	Low to moderate
AEC3: Previously vegetated areas	pesticides used for general landscape upkeep.	OC/OPP	Low to moderate
AEC4: Previously unsealed carpark area	Oil spills or fuel spills	TPH, BTEX, PAH, Heavy metals	Low to moderate
Heavy Metals - Arsenic, Cadmiun BTEX - Benzene, Toluene, Ethylber TPH - Total Petroleum Hydrocarbo PAH – Polycyclic Aromatic Hydro PCB – Polychlorinated Biphenyls OC/OPP – Organochlorine and C			

#### Table 5: Potential AECs and COCs

The approximate locations of the AEC's are shown on Figure 3.

#### 6.2.2 Potential Exposure Pathways and Receptors

Based on the site observations and knowledge obtained about site activities as outlined above, potential exposure pathways and receptors identified for the assessment are summarised in Table 6.

Chemicals of Concern	Key Pathways	Key Receptors		
Asbestos, heavy metals	Generation of dust during earthworks which is inhaled	Onsite - Construction and site workers Offsite - Adjacent sites		
Asbestos, heavy metals, TPH, BTEX, PAH, PCB, OC/OPP	Skin contact / ingestion, plant uptake	Onsite - Construction and site workers, future site users, vegetation in landscaped areas		
Heavy Metals, TPH, BTEX, PAH, PCB, OC/OPP	Surface runoff and leaching of soils	Offsite - Surface water ecosystems and users		
Heavy Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc BTEX - Benzene, Toluene, Ethylbenzene and Xylene TPH - Total Petroleum Hydrocarbons PAH – Polycyclic Aromatic Hydrocarbons PCB – Polychlorinated Biphenyls OC/OPP – Organochlorine and Organophophorus Pesticides				

#### Table 6: Potential Exposure Pathways and Receptors

#### 6.3 Discussion

A Stage 1 and Stage 2 SCA was required to assess the site's suitability for future development of multistorey carpark and clinic from a contamination perspective.

The site history study indicates that the hospital layout has changed several times since initial construction. The Carpark B area was previously unsealed and occupied by buildings in the eastern portion.

Identified AEC's included soils in the vicinity of the structures previously demolished, fill placed for the carpark upgrade, previously vegetated areas, and areas previously used as an unsealed carpark.

No visual or olfactory evidence of contamination (such as oil staining or hydrocarbon odours) were observed.

The results of laboratory analysis of surface soil samples collected from four targeted locations (AEC's outlined above), revealed concentrations of the chemicals of concern were either below the laboratory reporting limit, or below the adopted health investigation criteria for a Residential B site.

Some elevated concentrations of TRH above the laboratory reporting limits were encountered in samples obtained from boreholes BH-CB14 0.05-0.1m ( $C_{34}$ - $C_{40}$  fraction), BH-CB16 0.05-0.1m ( $C_{16}$ - $C_{34}$  fraction and TRH  $C_{34}$ - $C_{40}$  fraction), and BH-CB18 0.05-0.1m ( $C_{34}$ - $C_{40}$  fraction), however the levels were well below the adopted ecological investigation criteria and management limits for a Residential (B) site.

Asbestos was not detected in any of the soil samples tested.



#### 6.4 Conclusions and Recommendations

Based on the above and the findings of the Stage 1 and Stage 2 site SCA presented herein, the soils tested meet the requirements for a Residential B site as detailed in the NEPM 2013 guidelines and the site is considered suitable for the proposed development in its current state from a contamination perspective.

Should potential evidence of site contamination be identified during development activities, such as soil staining, buried materials, odours or possible Asbestos Containing Materials (ACM), then a site contamination specialist should be contacted for advice without delay.

#### 7 LIMITATIONS

This report comprises the results of an investigation carried out for a specific purpose and client as defined in the document. The report should not be used by other parties or for purposes or projects other than those assumed and stated within the report, as it may not contain adequate or appropriate information for applications other than those assumed or advised at the time of its preparation. The contents of the report are for the sole use of the client and no responsibility or liability will be accepted to any third party. The report should not be reproduced either in part or in full, without the express permission of Regional Geotechnical Solutions Pty Ltd.

Contaminated site investigations are based on data collection, judgment, experience, and opinion. By nature, these investigations are less exact than other engineering disciplines. The findings presented in this report and used as the basis for the recommendations presented herein were obtained using normal, industry accepted practises and standards. To our knowledge, they represent a reasonable interpretation of the general condition of the site. Under no circumstances, however, can it be considered that these findings represent the actual state of the site at all points.

Recommendations regarding ground conditions referred to in this report are estimates based on the information available at the time of its writing. Estimates are influenced and limited by the fieldwork method and testing carried out in the site investigation, and other relevant information as has been made available. In cases where information has been provided to Regional Geotechnical Solutions for the purposes of preparing this report it has been assumed that the information is accurate and appropriate for such use. No responsibility is accepted by Regional Geotechnical Solutions for inaccuracies within any data supplied by others.

If site conditions encountered during construction vary significantly from those discussed in this report, Regional Geotechnical Solutions Pty Ltd should be contacted for further advice.

This report alone should not be used by contractors as the basis for preparation of tender documents or project estimates. Contractors using this report as a basis for preparation of tender documents should avail themselves of all relevant background information regarding the site before deciding on selection of construction materials and equipment.

If you have any questions regarding this project, or require any additional consultations, please contact the undersigned.

For and on behalf of **Regional Geotechnical Solutions Pty Ltd** 

Prepared by

Louis Davidson Senior Geotechnical Engineer

Reviewed by

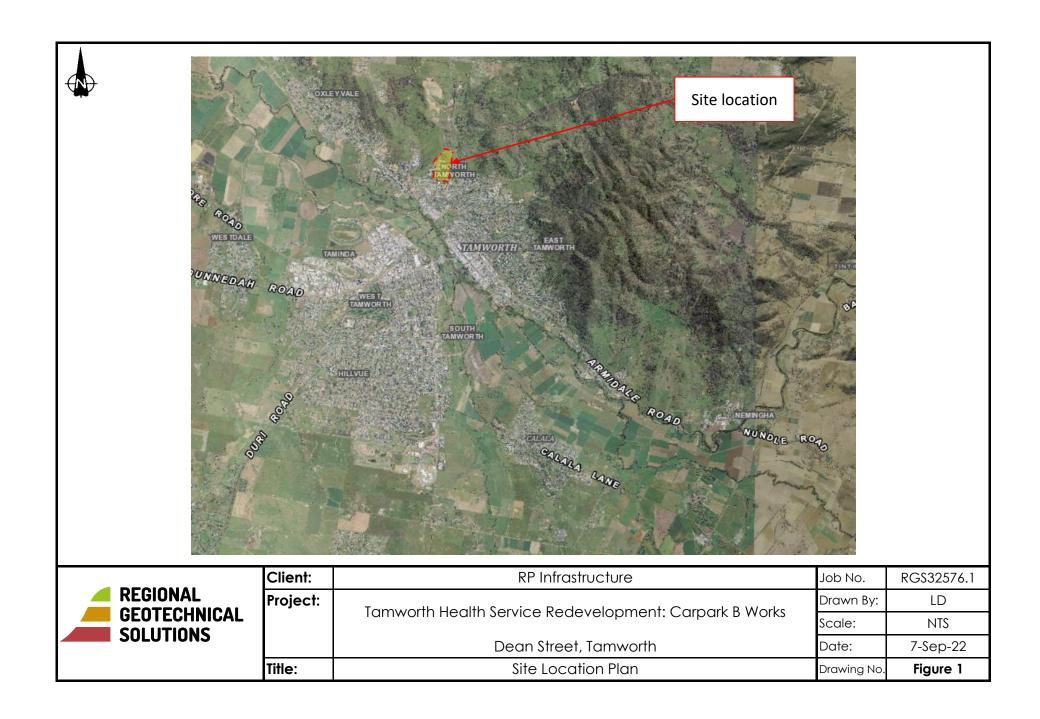
Andre May

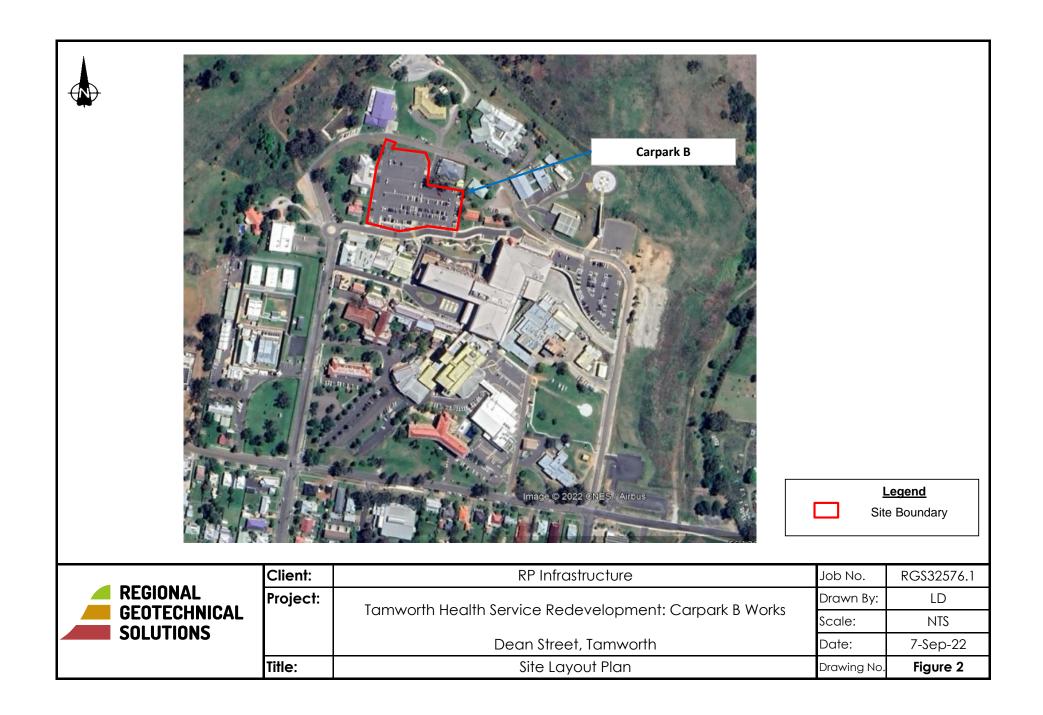
Andrew Hills Senior Environmental Engineer

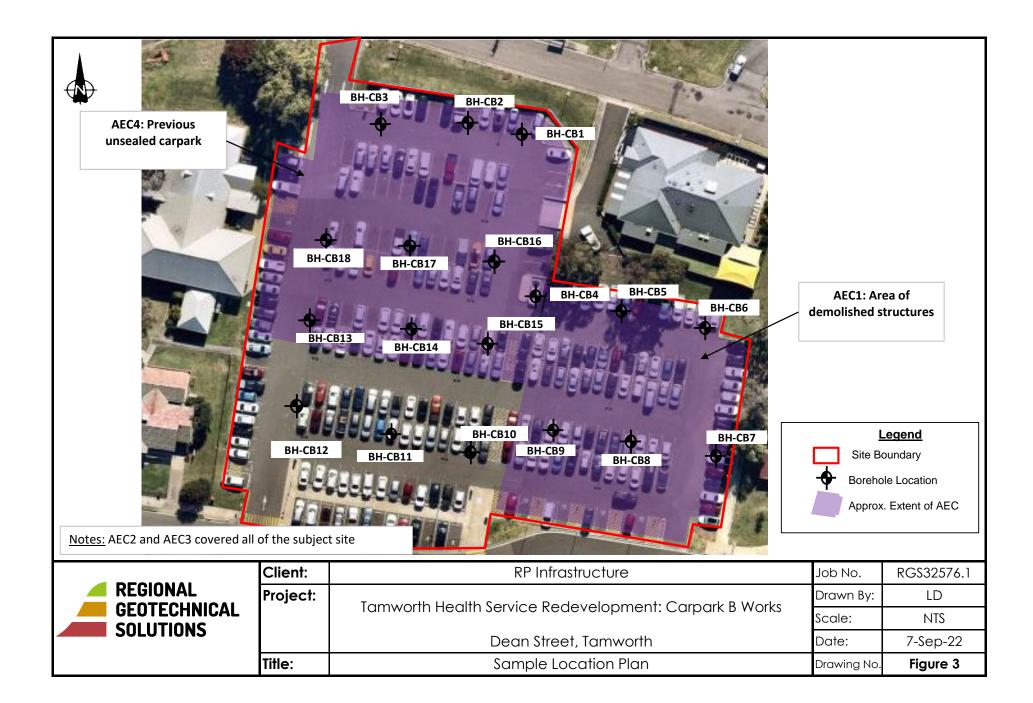


**Figures** 

Regional Geotechnical Solutions RGS32576.1-AO 5 September 2022





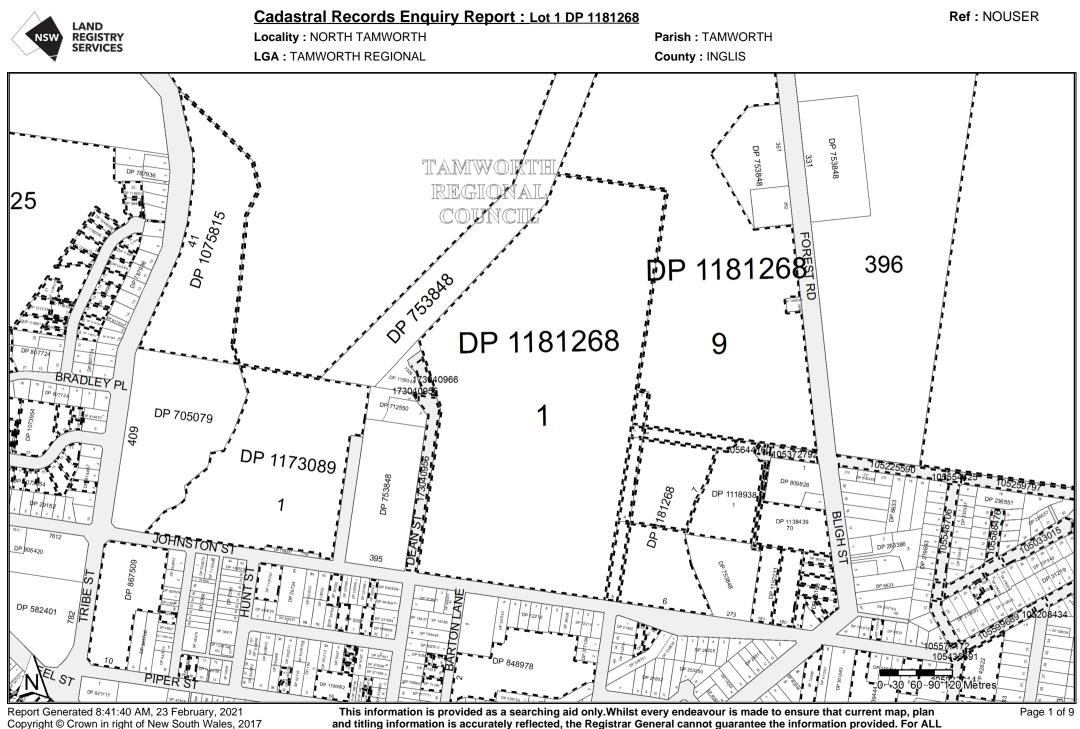




# Appendix A

Site History Documentation

Regional Geotechnical Solutions RGS32576.1-AO 5 September 2022



ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps

LAND	Cadastral Records En	quiry Report : Lot	<u>1 DP 1181268</u>	Ref : NOUSER
NSW REGISTRY SERVICES	Locality : NORTH TAMWORT LGA : TAMWORTH REGIONA		Parish : TAMWORTH County : INGLIS	
`	Status	Surv/Comp	Purpose	
DP5057	Status	Survicomp	r u pose	
Lot(s): 6				
🖳 DP1251197	WITHDRAWN	UNAVAILABLE	EASEMENT	
Lot(s): 8	REGISTERED	SURVEY	REDEFINITION	
DP25168	REGIOTERED	OORVET		
Lot(s): 2, 3, 4, 5, 6, 8				
PD00001	REGISTERED	SURVEY	SUBDIVISION	
DP322001 Lot(s): 1				
Lot(0). P	WITHDRAWN	UNAVAILABLE	EASEMENT	
DP371028				
Lot(s): 7B	WITHDRAWN	UNAVAILABLE	CONSOLIDATION	1
DP392344	WITTERAWIN	UNAVAILABLE	CONSOLIDATION	N
Lot(s): 6B				
🖳 DP1167165	WITHDRAWN	UNAVAILABLE	CONSOLIDATION	1
DP505056				
Lot(s): 2	WITHDRAWN	UNAVAILABLE	CONSOLIDATION	J
DP626018				
Lot(s): 4			DEDEEINIITION	
DP1167052	PRE-ALLOCATED	UNAVAILABLE	REDEFINITION	
Lot(s): 2				
🖳 DP1127918	REGISTERED	SURVEY	SUBDIVISION	
DP814457				
Lot(s): 2	REGISTERED	SURVEY	SUBDIVISION	
DP848978	REGIOTERED	OORVET	COBBINICION	
Lot(s): 2				
	ILLAGE. VILLAS 1-36 SHOWN	IN PLAN WITH MEMORA	NDUM AB21496	
DP867509 Lot(s): 10				
Lon(0). 10	REGISTERED	SURVEY	EASEMENT	
DP1026894				
Lot(s): 251, 252	HISTORICAL	SURVEY	SUBDIVISION	
DP1062507	HISTORICAL	SURVET	300010131014	
Lot(s): 61, 62				
🖳 DP587549	HISTORICAL	COMPILATION	SUBDIVISION	
Lot(s): 62	HISTORICAL	COMPILATION	UNRESEARCHEI	
DP1065791	HISTORICAL	COMPILATION	UNRESEARCHEI	<b>,</b>
Lot(s): 41, 42				
🦳 DP362211	HISTORICAL	SURVEY	UNRESEARCHEI	)
DP1073954 Lot(s): 24				
DP1140190	REGISTERED	SURVEY	SUBDIVISION	
Lot(s): 10, 12, 13, 14, 15, 1	6, 17, 18, 23, 24, 25			
🖳 DP814457	HISTORICAL	SURVEY	SUBDIVISION	
Lot(s): 25	HISTORICAL	SURVEY	SUBDIVISION	
DP1075815	HIGTORICAL			
Lot(s): 41				
P705079	HISTORICAL	SURVEY	CROWN FOLIO C	REATION
DP1081866 Lot(s): 101, 102, 103				
DP5057	HISTORICAL	SURVEY	UNRESEARCHEI	)

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 ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps.

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	ND GISTRY	Locality : NORTH TAM	WORTH	Parish : TAMWOR	ТН
SEI SEI	RVICES	LGA : TAMWORTH RE	GIONAL	County : INGLIS	
		Status	Surv/Co	mp Purpose	
101001					
): 1					
🖳 DP2	9734	HISTORICAL	SURVEY	UNRESE	ARCHED
113727					
): 111, 112					
🖳 DP8		HISTORICAL	SURVE		
🖳 DP1	073954	HISTORICAL	SURVEY	SUBDIVI	SION
14638					
): 51	~~ ~~ ~		0010		
🖳 DP6		HISTORICAL	COMPIL		
🖳 DP1		HISTORICAL	SURVEY		
🖳 DP1	031338	HISTORICAL	SURVE	SUBDIVI	SION
18938					
): 1					
🖳 DP7	53848	HISTORICAL	COMPIL		ADMIN NO.
🖳 DP1	099608	HISTORICAL	SURVE	ROADS /	ACT, 1993
-7	NSW GAZ.		-09-2007	Folio : 7235	
LOT	1 DP109960	08 - SEE AD462184			
): 1, 3					
	NSW GAZ.	11-	-07-2008	Folio : 6941	
	SED ROAD				
	90097 - LOT	3 DP1118938			
): 2					
	NSW GAZ.	08-	-02-2008	Folio : 672	
	SED ROAD				
	2 DP111893	8			
19787					
): 2 🐙 🗈		າາ	02 2000	Folio : 1160	
	NSW GAZ.	22	-02-2008	Folio : 1160	
	2 DP111978	37			
127918	201111070				
): 97, 98					
, 57, 50 In DP5	34738	HISTORICAL	SURVE	SUBDIVI	SION
38439	000				
): 70					
, I I I I I I I I I I I I I I I I I I I	53848	HISTORICAL	COMPIL	ATION CROWN	ADMIN NO.
	118603	HISTORICAL	COMPIL		FOLIO CREATION
	NSW GAZ.		-12-2007	Folio : 10758	
	SED ROAD	20	12-2001	1010.10730	,
	1 DP111860	03			
40190					
): 221, 222	2				
DP8		HISTORICAL	SURVE	SUBDIVI	SION
🧧 DP1		HISTORICAL	SURVE		
152231			SOLVE	0000111	
): 181					
, IOT I DP1	119787	HISTORICAL	COMPIL	ATION ROADS	ACT, 1993
	NSW GAZ.		-12-2007	Folio : 9993	,
CLC	SED ROAD		2001	1 010 . 0000	
LOT	1 DP111978	37			
): 180, 18 <sup>-</sup>					
🖳 DP7	53848	HISTORICAL	COMPIL	ATION CROWN	ADMIN NO.
): 180					
	NSW GAZ.	-	-08-2013	Folio : 3777	
				S LAND AND HOUSING CORPO	

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 ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps.

Ref: NOUSER

	LAND	Cauastiai Necolus Li		<u>I DF 1101200</u> Re	I.NOUSLN
NSW REGISTRY		Locality : NORTH TAMWOR	ГН	Parish : TAMWORTH	
SER	SERVICES	LGA : TAMWORTH REGION	AL	County : INGLIS	
		Status	Surv/Comp	Purpose	
DP115814	6				
_ot(s): 730-					
	NSW GAZ.	22-07-20		Folio : 2048	
		OF RESERVATION OF CROWN			
ę	96144 - LOTS 4	135-436 DP1054103 AND LOT 7	304 DP1158146		
P1168984	4				
	13, 14, 15, 16				
	DP787936	HISTORICAL	SURVEY	SUBDIVISION	
P117308	9				
ot(s): 1					
	DP47171	HISTORICAL	SURVEY	CROWN FOLIO CREA	TION
	DP753848	HISTORICAL	COMPILATION	CROWN ADMIN NO.	
	DP1055791	HISTORICAL	SURVEY	CROWN FOLIO CREA	TION
	DP1165492	HISTORICAL	SURVEY	REDEFINITION	
	NSW GAZ.	01-07-20	11	Folio : 4697	
	REVOCATION	OF RESERVATION OF CROWN	N LAND RESERVE NO.	LOTS 265, 330 AND 363 DP753848	3 AND LOT 1
P117643					
ot(s): 11,	-				
	DP356648	HISTORICAL	SURVEY	UNRESEARCHED	
P118126					
ot(s): 1	-				
	DP533835	HISTORICAL	SURVEY	RESUMPTION OR AC	QUISITION
	DP1195542	REGISTERED	SURVEY	EASEMENT	
ot(s): 6					
	DP1188571	REGISTERED	SURVEY	RESUMPTION OR AC	QUISITION
	NSW GAZ.	11-10-20		Folio : 4470	dolonion
	HEALTH ADMII DP1188571	R THE PURPOSES OF THE NISTRATION ACT 1982 LOT 61	DP1188571 AND EASE	MENTS DESIGNATED (A) AND (B)	SHOWN IN
	DP1175412	HISTORICAL	COMPILATION	CROWN ROAD ENCL	OSURE
ot(s): 2, 9		HISTORICAL			
	DP1076546	HISTORICAL	COMPILATION	DEPARTMENTAL	
ot(s): 1, 4					
	DP753848	HISTORICAL	COMPILATION	CROWN ADMIN NO.	
	NSW GAZ. CLOSED ROAE LOT 1 DP11754		12	Folio : 1366	
<b>3</b>	NSW GAZ. ADDITION TO I	22-06-20 RESERVED CROWN LAND 14778 - LOT 1 DP1175412	12	Folio : 2514	
ot(s): <u>1,</u> 2					
		21-12-20 R THE PURPOSES OF THE NISTRATION ACT 1982 - LOTS		Folio : 5244	
P118550					
ot(s): 17,					
	DP787936	HISTORICAL	SURVEY	SUBDIVISION	
<u>e</u> 1	DP1168984	HISTORICAL	SURVEY	SUBDIVISION	
P1190692	2				
ot(s): 56					
<u>e</u> 1	DP5057	HISTORICAL	SURVEY	UNRESEARCHED	
	DP408923	HISTORICAL	SURVEY	UNRESEARCHED	
	DP873857	HISTORICAL	COMPILATION	CONSOLIDATION	
P119831					
ot(s): 1	•				
	DP24858	HISTORICAL	SURVEY	UNRESEARCHED	
	DP534738	HISTORICAL	SURVEY	SUBDIVISION	

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NSW REGISTRY SERVICES	Locality : NORTH TAMWC		Parish : TAMWORTH County : INGLIS	
•	Status	Surv/Comp	Purpose	
ot(s): 1, 5	Status	Survicomp	Fulpose	
E DP416035	HISTORICAL	SURVEY	UNRESEARCHED	
P1199017				
ot(s): 20, 21, 22, 23, 2				
🖳 DP787936	HISTORICAL	SURVEY	SUBDIVISION	
🖳 DP1168984	HISTORICAL	SURVEY	SUBDIVISION	
🖳 DP1185500	HISTORICAL	SURVEY	SUBDIVISION	
P1206794				
ot(s): 251, 252				
🖳 DP787936	HISTORICAL	SURVEY	SUBDIVISION	
🖳 DP1168984	HISTORICAL	SURVEY	SUBDIVISION	
🖳 DP1185500	HISTORICAL	SURVEY	SUBDIVISION	
🖳 DP1199017	HISTORICAL	SURVEY	SUBDIVISION	
P1212334				
ot(s): 26, 27, 28				
🖳 DP787936	HISTORICAL	SURVEY	SUBDIVISION	
🖳 DP1168984	HISTORICAL	SURVEY	SUBDIVISION	
🖳 DP1185500	HISTORICAL	SURVEY	SUBDIVISION	
Q DP1199017	HISTORICAL	SURVEY	SUBDIVISION	
P1219373				
ot(s): 29, 30, 32				
DP787936	HISTORICAL	SURVEY	SUBDIVISION	
🖳 DP1168984	HISTORICAL	SURVEY	SUBDIVISION	
Q DP1185500	HISTORICAL	SURVEY	SUBDIVISION	
Q DP1199017	HISTORICAL	SURVEY	SUBDIVISION	
DP1212334	HISTORICAL	SURVEY	SUBDIVISION	
P1231114				
ot(s): 3				
🗋 🖳 DP6633	HISTORICAL	SURVEY	UNRESEARCHED	)
P1233761				
ot(s): 155, 156				
🖳 DP21802	HISTORICAL	SURVEY	UNRESEARCHED	
P1243825				
ot(s): 34, 35				
🧕 DP787936	HISTORICAL	SURVEY	SUBDIVISION	
🦳 DP1168984	HISTORICAL	SURVEY	SUBDIVISION	
🦳 DP1185500	HISTORICAL	SURVEY	SUBDIVISION	
🖳 DP1199017	HISTORICAL	SURVEY	SUBDIVISION	
🖳 DP1212334	HISTORICAL	SURVEY	SUBDIVISION	
🖳 DP1219373	HISTORICAL	SURVEY	SUBDIVISION	
🖳 DP1239283	HISTORICAL	SURVEY	SUBDIVISION	
P1248231				
ot(s): 7, 10				
🦳 DP728359	HISTORICAL	SURVEY	SUBDIVISION	
🖳 DP1078221	HISTORICAL	SURVEY	SUBDIVISION	
🖳 DP1239283	HISTORICAL	SURVEY	SUBDIVISION	
ot(s): 10				
DP807724	HISTORICAL	SURVEY	SUBDIVISION	
ot(s): 7				
	NDS ACT, 1989; LAND ACQUIS N 138 OF THE CROWN LANDS	ITION (JUST TERMS CO	Folio : 2604 MPENSATION) ACT, 1991; DEC G LOT 411 DP728359. ERRATUM	
MSW GA		-2014	Folio : 2587	
	ON OF RESERVATION OF CRO			

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 ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps.

Ref: NOUSER

		<u>ouddollai Roooldo Enq</u>		
NSW	REGISTRY	Locality : NORTH TAMWORTH		Parish : TAMWORTH
SERVICES	SERVICES	LGA : TAMWORTH REGIONAL		County : INGLIS
		Status	Surv/Comp	Purpose
SP39444			•	
	SP76794	REGISTERED	COMPILATION	STRATA SUBDIVISION PLAN
	SP76795	REGISTERED	COMPILATION	STRATA SUBDIVISION PLAN
	SP76796	REGISTERED	COMPILATION	STRATA SUBDIVISION PLAN
SP42622				
	SP92944	REGISTERED	COMPILATION	STRATA SUBDIVISION PLAN
SP71381				
	DP599841	HISTORICAL	COMPILATION	SUBDIVISION
	DP1060436	HISTORICAL	SURVEY	REDEFINITION
SP74886				
	DP411207	HISTORICAL	SURVEY	UNRESEARCHED
	DP1082072	HISTORICAL	SURVEY	REDEFINITION
SP79603				
	DP1117945	HISTORICAL	SURVEY	CONSOLIDATION
SP83382				
	DP367939	HISTORICAL	SURVEY	UNRESEARCHED
	DP1139570	HISTORICAL	SURVEY	REDEFINITION
SP96078				
	DP25168	HISTORICAL	SURVEY	UNRESEARCHED
	DP1234151	HISTORICAL	SURVEY	REDEFINITION
SP98897				
	DP787936	HISTORICAL	SURVEY	SUBDIVISION
	DP1168984	HISTORICAL	SURVEY	SUBDIVISION
	DP1185500	HISTORICAL	SURVEY	SUBDIVISION
	DP1199017	HISTORICAL	SURVEY	SUBDIVISION
	DP1212334	HISTORICAL	SURVEY	SUBDIVISION
	DP1219373	HISTORICAL	SURVEY	SUBDIVISION
Road				
	(s): 105033014			
	NSW GAZ.	07-06-2019		Folio : 1861
				IYING THIS GAZETTE NOTIFICATION
				THIS GAZETTE NOTIFICATION
	(s): 105644160 DP1099608	HISTORICAL	SURVEY	ROADS ACT, 1993
		, 105372792, 105644160		NOADO ACT, 1995
Polygon id	NSW GAZ.	, 105372792, 105644160 05-05-2006		Folio : 2709
7		F CROWN ROAD TO COUNCIL		1010.2700
		, 173040956, 173040966		
erygen ia	NSW GAZ.	03-07-2015		Folio : 2042
.~7		CROWN ROAD TO COUNCIL		
olygon Id	(s): 105033015	, 105208434, 105225589, 10522559	0, 105259797, 10536	61269, 105435691, 105543025, 105548706,
10555442	5, 105577172, 1	05582842, 105588476, 105599689		
<b>7</b>	EX-SUR 68/34	DP978236		

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Locality : NORTH TAMWORTH

Parish : TAMWORTH

Ref: NOUSER

SERVICES	LGA : TAMWORTH REGIONAL	County : INGLIS
Plan	Surv/Comp	Purpose
DP189	COMPILATION	UNRESEARCHED
DP2356	COMPILATION	UNRESEARCHED
DP5057	SURVEY	UNRESEARCHED
DP5674	SURVEY	UNRESEARCHED
DP5733	SURVEY	UNRESEARCHED
DP6633	SURVEY	UNRESEARCHED
DP12210	SURVEY	UNRESEARCHED
DP18200	SURVEY	UNRESEARCHED
DP21802	SURVEY	UNRESEARCHED
DP24811	SURVEY	UNRESEARCHED
DP25168 DP25555	SURVEY SURVEY	UNRESEARCHED UNRESEARCHED
DP26205	SURVEY	UNRESEARCHED
DP29152	SURVEY	UNRESEARCHED
DP29514	SURVEY	UNRESEARCHED
DP29734	SURVEY	UNRESEARCHED
DP31219	SURVEY	UNRESEARCHED
DP44204	COMPILATION	CROWN FOLIO CREATION
DP214117	SURVEY	SUBDIVISION
DP219693	SURVEY	SUBDIVISION
DP232936	SURVEY	SUBDIVISION
DP232937	SURVEY	SUBDIVISION
DP236551	SURVEY	SUBDIVISION SUBDIVISION
DP236557 DP237949	SURVEY SURVEY	SUBDIVISION
DP239079	SURVEY	SUBDIVISION
DP253250	SURVEY	SUBDIVISION
DP257195	SURVEY	CROWN FOLIO CREATION
DP263313	SURVEY	SUBDIVISION
DP263386	SURVEY	SUBDIVISION
DP301063	SURVEY	UNRESEARCHED
DP308731	SURVEY	UNRESEARCHED
DP308749 DP321998	SURVEY SURVEY	UNRESEARCHED UNRESEARCHED
DP321990 DP321999	SURVEY	UNRESEARCHED
DP322000	SURVEY	UNRESEARCHED
DP322001	SURVEY	UNRESEARCHED
DP331064	SURVEY	UNRESEARCHED
DP337477	SURVEY	UNRESEARCHED
DP338466	SURVEY	UNRESEARCHED
DP338731	SURVEY	UNRESEARCHED
DP339193	SURVEY	UNRESEARCHED
DP339836 DP355838	COMPILATION SURVEY	UNRESEARCHED UNRESEARCHED
DP362211	SURVEY	UNRESEARCHED
DP367939	SURVEY	UNRESEARCHED
DP369706	SURVEY	UNRESEARCHED
DP371028	SURVEY	UNRESEARCHED
DP371899	SURVEY	UNRESEARCHED
DP373601	SURVEY	UNRESEARCHED
DP375099	SURVEY	UNRESEARCHED
DP377106	SURVEY	UNRESEARCHED
DP377551 DP381712	SURVEY SURVEY	UNRESEARCHED UNRESEARCHED
DP385488	SURVEY	UNRESEARCHED
DP392344	SURVEY	UNRESEARCHED
DP397253	COMPILATION	UNRESEARCHED
DP398004	SURVEY	UNRESEARCHED
DP401533	SURVEY	UNRESEARCHED
DP402646	SURVEY	UNRESEARCHED
DP405009	SURVEY	UNRESEARCHED
DP411207	SURVEY	UNRESEARCHED
DP414261	COMPILATION	UNRESEARCHED
DP414920	SURVEY	
DP500251	SURVEY	SUBDIVISION

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ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps.



Locality : NORTH TAMWORTH

LGA : TAMWORTH REGIONAL

Parish : TAMWORTH

	SERVICES LGA	TAMWORTH REGIONAL	County : INGLIS
			-
Plan		Surv/Comp	Purpose
DP500255		SURVEY	SUBDIVISION
DP502813		SURVEY	SUBDIVISION
DP505056		COMPILATION	SUBDIVISION
DP509962		SURVEY	SUBDIVISION
DP514596		SURVEY	SUBDIVISION
DP515933		SURVEY	SUBDIVISION
DP521675		SURVEY	SUBDIVISION
DP529855		SURVEY	SUBDIVISION
DP547777		SURVEY	SUBDIVISION
DP577771		SURVEY SURVEY	SUBDIVISION
DP582401 DP599841		COMPILATION	SUBDIVISION SUBDIVISION
DP602489		SURVEY	SUBDIVISION
DP602802		SURVEY	SUBDIVISION
DP621717		SURVEY	SUBDIVISION
DP624629		COMPILATION	CONSOLIDATION
DP625470		COMPILATION	CONSOLIDATION
DP626018		COMPILATION	CONSOLIDATION
DP701079		SURVEY	SUBDIVISION
DP705077		COMPILATION	CROWN FOLIO CREATION
DP705079		SURVEY	CROWN FOLIO CREATION
DP710383		COMPILATION	SUBDIVISION
DP711064		COMPILATION	CONSOLIDATION
DP712550		SURVEY	SUBDIVISION
DP753848		COMPILATION	CROWN ADMIN NO.
DP787936		SURVEY	SUBDIVISION
DP794449		COMPILATION	SUBDIVISION
DP805420		COMPILATION	SUBDIVISION
DP807724		SURVEY	SUBDIVISION
DP809261		SURVEY	SUBDIVISION
DP809828		SURVEY	SUBDIVISION
DP814457		SURVEY	SUBDIVISION
DP817048		SURVEY	SUBDIVISION
DP831763		SURVEY	SUBDIVISION
DP837819 DP843333		SURVEY SURVEY	SUBDIVISION SUBDIVISION
DP845242		SURVEY	SUBDIVISION
DP848978		SURVEY	SUBDIVISION
DP850962		SURVEY	SUBDIVISION
DP851503		SURVEY	SUBDIVISION
DP867509		SURVEY	CONSOLIDATION
DP879868		SURVEY	SUBDIVISION
DP940397		COMPILATION	UNRESEARCHED
DP940398		COMPILATION	UNRESEARCHED
DP1026894		SURVEY	SUBDIVISION
DP1062507		SURVEY	SUBDIVISION
DP1065252		SURVEY	SUBDIVISION
DP1065791		SURVEY	SUBDIVISION
DP1067396		SURVEY	SUBDIVISION
DP1073954		SURVEY	SUBDIVISION
DP1075815		SURVEY	SUBDIVISION
DP1081866		SURVEY	SUBDIVISION
DP1101001		COMPILATION	CONSOLIDATION
DP1113727		SURVEY	SUBDIVISION
DP1114638		SURVEY	SUBDIVISION
DP1118938		SURVEY	ROADS ACT, 1993
DP1119787		COMPILATION	ROADS ACT, 1993
DP1123106		SURVEY	SUBDIVISION
DP1127918		SURVEY	SUBDIVISION
DP1138439			
DP1140190			SUBDIVISION
DP1140190			SUBDIVISION
DP1152231			SUBDIVISION
DP1152231 DP1158146		UNRESEARCHED COMPILATION	SUBDIVISION CROWN LAND CONVERSION
DP1158146 DP1159323		COMPILATION	CROWN LAND CONVERSION
Caution:	This is fair the		bilst every endeavour is made the ensure that current man plan an
CONTRACTOR -	I DIC Information ic D	rovidod oc o coorching old only M	plies avoid and avoid the made the ancure that current man plan an

Caution: This information is provided as a searching aid only. Whilst every endeavour is made the ensure that current map, plan and

titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL

ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps.



Locality : NORTH TAMWORTH

Parish : TAMWORTH

NSW REGISTRY	Locality . NORTH TAWWORTH	Falish. TAWWORTH
SERVICES	LGA : TAMWORTH REGIONAL	County : INGLIS
Plan	Surv/Comp	Purpose
DP1159337	COMPILATION	CROWN LAND CONVERSION
DP1159338	COMPILATION	CROWN LAND CONVERSION
DP1168984	SURVEY	SUBDIVISION
DP1168984	UNRESEARCHED	SUBDIVISION
DP1173089	SURVEY	CONSOLIDATION
DP1176430	SURVEY	SUBDIVISION
DP1181268	SURVEY	RESUMPTION OR ACQUISITION
DP1185500	SURVEY	SUBDIVISION
DP1190692	COMPILATION	CONSOLIDATION
DP1198311	SURVEY	SUBDIVISION
DP1198311	UNRESEARCHED	SUBDIVISION
DP1199017	SURVEY	SUBDIVISION
DP1199449	SURVEY	CONSOLIDATION
DP1199449	UNRESEARCHED	CONSOLIDATION
DP1206794	SURVEY	SUBDIVISION
DP1212334	SURVEY	SUBDIVISION
DP1219373	SURVEY	SUBDIVISION
DP1231114	SURVEY	REDEFINITION
DP1233761	SURVEY	REDEFINITION
DP1233761	UNRESEARCHED	REDEFINITION
DP1243825	SURVEY	SUBDIVISION
DP1248231	SURVEY	SUBDIVISION
SP18355	COMPILATION	STRATA PLAN
SP18437	COMPILATION	STRATA PLAN
SP18925	COMPILATION	STRATA PLAN
SP30550	COMPILATION	STRATA PLAN
SP37260	COMPILATION	STRATA PLAN
SP38671	COMPILATION	STRATA PLAN
SP39444	COMPILATION	STRATA PLAN
SP42622	COMPILATION	STRATA PLAN
SP46006	COMPILATION	STRATA PLAN
SP47818	COMPILATION	STRATA PLAN
SP48021	COMPILATION	STRATA PLAN
SP48479	COMPILATION	STRATA PLAN
SP52716	COMPILATION	STRATA PLAN
SP71381		STRATA PLAN
SP74886	COMPILATION	STRATA PLAN
SP79603		STRATA PLAN
SP83382		STRATA PLAN
SP96078		STRATA PLAN
SP96078		STRATA PLAN
SP98897 SP98897	COMPILATION UNRESEARCHED	STRATA PLAN STRATA PLAN
SF 30031	UNRESEARCHED	STRATA FLAN

 Caution:
 This information is provided as a searching aid only. Whilst every endeavour is made the ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL

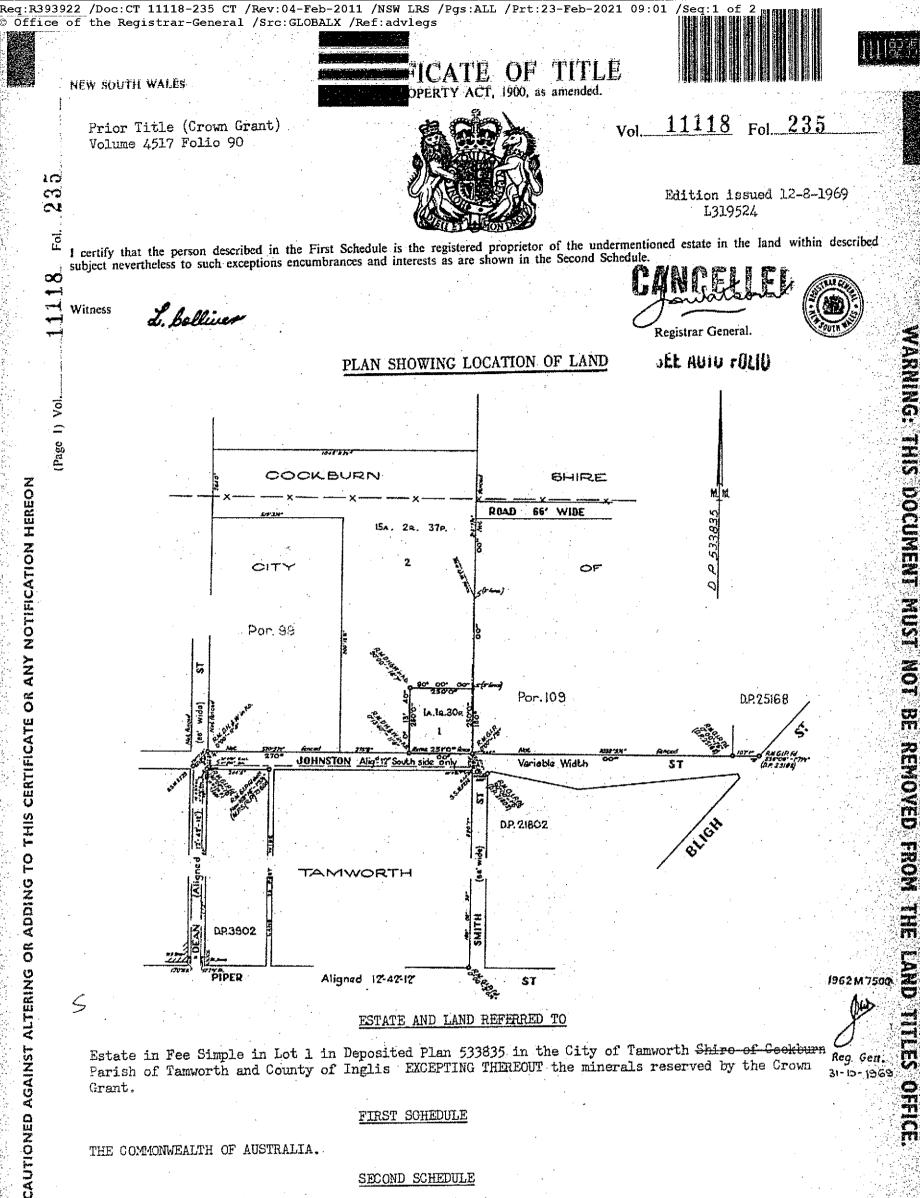
 ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps.

Req:R393923 /Doc:CT 11100-035 CT /Rev:04-Feb-2011 /NSW LRS /Pgs:ALL /Prt:23-Feb-2021 09:01 /Seq © Office of the Registrar-General /Src:GLOBALX /Ref:advlegs OF NEW SOUTH WALES 1900, as amended. ACL 11100 35 Fol. Prior Title (Crown Grant) Vol. Volume 4517 Folio 90 Edition issued 22-7-1969 Fol I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule L. balliver Witness Registrar General. WARNING: THIS DOCUMENT MUST SEE AUTO FOLIO PLAN SHOWING LOCATION OF LAND (Page 1) Vol. ISTI'NK AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON COCKBURN SHIRE ROAD 66 WIDE 533835 15A. 24. 37P. 2 CITY OF Por: 99 NOT **7** 2500 Por. 109 D.P.25168 la le 30a REMOVED FROM 1712 JOHNSTON Alig 17 Se Variable Width ST BILEH DP. 21802 12.42 TAMWORTH DR3902 LAND SNI PIPER Aligned 12-42-12 \$T TITLES ESTATE AND LAND REFERRED TO OFFICE Estate in Fee Simple in Lot 2 in Deposited Plan 533835 in the City of Tamworth and Shire of EXCEPTING THEREOUT the minerals reserved Cockburn Parish of Tamworth and County of Inglis. S AUTIONED by the Crown Grants. 1969MG414 FIRST SCHEDULE THE TAMWORTH BASE HOSPITAL TAMWORTH DISTRICT HOSPITAL THE-HEG.GEN ARE SECOND SCHEDULE 7-1-1970 CRM PERSONS 1. Reservations and conditions, if any, contained in the Crown Grant above referred to. Registrar General.

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

REGISTERED PROPRIETOR		AATURE ENTERED	INSTRUMEN NUMBER NUMBER	OATE A CALLER AND A	ENTERED	Signature of Registrar General
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SECOND SCHEDULE

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

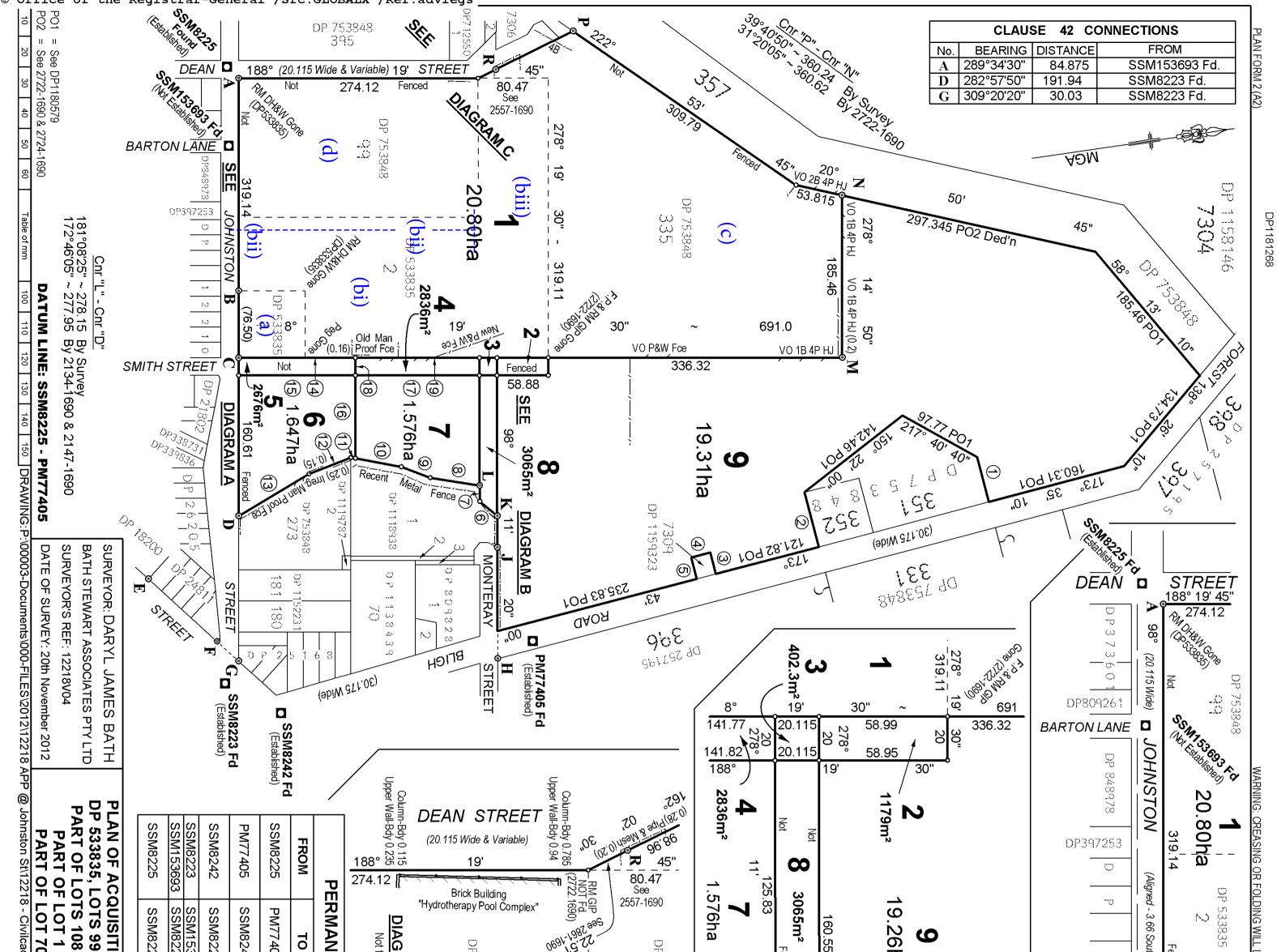
PERSONS ARE

Registrar General

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

-	1 DATE ENTERED Registrar General			CANCELLATION	
INSTRUMENT	E I NUMBER			Signature of Registrar General	
	NATURE			ENTERED	
FIRST SCHEDULE (continued)	REGISTERED PROPRIETOR	see Auto foutu	SECOND SCHEDULE (continued)	PARTICULARS	
	REGIS			NATURE INSTRUMENT NATURE I NUMBER I DATE	

Req:R393921 /Doc:DP 1181268 P /Rev:18-Jan-2013 /NSW LRS /Pgs:ALL /Prt:23-Feb-2021 09:01 /Seq:1 of 3 of the Registrar-General /Src:GLOBALX /Ref:advlegs © Office



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)TS 1 & 2 DP 7538 DP7538 5412, & 1076546	)8°07'15" - 708.826 78°07'13" - 708.846	'''	' '	°38'02" - 2	°14'51" - 755. °38'11" - 299	CONNEC )°14'51" - 755.963	CONNEC		80 80	1889		13 157°37'30"				6 <u>227°32'40"</u> 7 <u>278°11'20"</u>			NUMBER BEARING	SCHEDULE OF	DP 1 1	Wetal		11' <b>K</b> وهي •			SM	) IITH S			(76.50) (0.09) Pip & Mesh I (0.195) C
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PLAN FORM 6 (2012) WARNING: Creasing or f	olding will lead to rejection ePlan					
DEPOSITED PLAN AD	MINISTRATION SHEET Sheet 1 of 2 Sheet(s)					
Office Use Only Registered: 15.1.2013	Office Use Only					
Title System: TORRENS	DP1181268					
Purpose: ACQUISITION						
PLAN OF ACQUISITION OF LOTS 1 & 2 IN DP533835, LOTS 99 & 335 IN DP753848, PART OF LOTS 108 & 109 IN DP753848, PART LOT 1 IN DP1175412, & PART OF LOT 7008 IN DP1076546	LGA: TAMWORTH REGIONAL Locality: North Tamworth Parish: Tamworth County: Inglis					
Crown Lands NSW/Western Lands Office Approval	Survey Certificate					
I, (Authorised Officer) in	I, DARYL JAMES BATH					
approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given.	of BATH, STEWART ASSOCIATES Pty Ltd					
Signature:	PO Box 403, Tamworth NSW 2340 (Tel: 02 6766-5966)					
Date:	a surveyor registered under the Surveying and Spatial Information Act 2002, certify that:					
File Number:	*(a) The land shown in the plan was surveyed in accordance with the					
Office:	Surveying and Spatial Information Regulation 2012, is accurate and the survey was completed on					
Subdivision Certificate I,	*(b) The part of the land shown in the plan excluding part of Lot 9 was surveyed in accordance with the Surveying and Spatial Information Regulation 2012, is accurate and the survey was completed on, 20 <sup>th</sup> November 2012. The part not surveyed was compiled in accordance with that Regulation.					
the provisions of s.109J of the <i>Environmental Planning and</i> Assessment Act 1979 have been satisfied in relation to the proposed subdivision, new road or reserve set out herein.	*(c) The land shown in this plan was compiled in accordance with the Surveying and Spatial Information Regulation 2012.					
Signature:	and the second					
Accreditation number:	Signature:					
Consent Authority: TAMWORTH REGIONAL COUNCIL	Surveyor ID: 1307					
Date of endorsement:	Datum Line: SSM8225 – PM77405					
Subdivision Certificate number:	Type: Urban					
File number:	The terrain is *Level-Undulating / *Steep-Mountainous. *Strike through if inapplicable. Aspecify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.					
Statements of intention to dedicate public roads, public reserves and	Plans used in the preparation of survey/compilation.					
drainage reserves.	DP12210 DP533835 DP1152231 2861-1690 46-1393					
IT IS INTENDED TO ACQUIRE LOTS 1 TO 5, INCLUSIVE,	DP21802 DP602489 DP1175412 2134-1690					
FOR THE PURPOSES OF THE HEALTH ADMINISTRATION ACT 1982, AS REFERRED TO BY NOTICE IN THE NSW	DP24811 DP712550 DP1180579 2722-1690					
GOVERNMENT GAZETTE No. 130 FOLIO 5244 DATED	DP25168 DP809828 1793-1690 2724-1690					
21.12.2012.	DP26205 DP1076546 2147-1690 2596-1690					
	DP48401 DP1099608 2149-1690 2796-1690					
	DP257195 DP1118938 2557-1690 43-1393					
	If space is insufficient continue on PLAN FORM 6A					
Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A	Surveyor's Reference: 12218V04					

Req:R393921 /Doc:DP 1181268 P /Rev:18-Jan-2013 /NSW LRS /Pgs:ALL /Prt:23-Feb-2021 09:01 /Seq:3 of 3 © Office of the Registrar-General /Src:GLOBALX /Ref:advlegs 38

PLAN FORM	6A (2012)	WARNING:	Creasing or fo	olding	will lead to rejection	ePlan	
		DEPOSITE	D PLAN AD	DMINI	STRATION SHEET	Sheet 2 of 2	Sheet(s)
Registered	I: 🏵 1	Offi 5.1.2013	ice Use Only				ce Use Only
DP533835, OF LOTS 2	, LOTS 99 108 & 109 412, & PA	ION OF LOTS 1 8 & 335 IN DP75384 IN DP753848, PAF RT OF LOT 7008 I	18, PART RT LOT 1	• A • S	neet is for the provision of schedule of lots and addrittements of intention to c	esses - See 60(c) SSI R reate and release affect	as required: Regulation 2012
		ber:		• S • A	ccordance with section 88 ignatures and seals- see 1 ny information which cann of the administration shee	95D Conveyancing Act of fit in the appropriate p	1919
Γ	Lot	Street Number	Street Na	me	Street Type	Locality	]
	1	NA			Street	North Tamworth	-

	NA		Street	North Lamworth
2	NA	Johnston	Street	North Tamworth
3	NA	NA	NA	North Tamworth
4	NA	NA	NA	North Tamworth
5	NA	Johnston	Street	North Tamworth
6	NA	Johnston	Street	North Tamworth
7	NA	NA	NA	North Tamworth
8	NA	NA	NA	North Tamworth
9	NA	Forest	Road	North Tamworth

If space is insufficient use additional annexure sheet

Surveyor's Reference: 12218V04





SEARCH DATE 23/2/2021 9:03AM

FOLIO: 1/533835

\_\_\_\_

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 11118 FOL 235

Recorded	Number	Type of Instrument	C.T. Issue
28/3/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
4/7/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
12/12/1995	0760325	TRANSFER	EDITION 1
28/3/1996	0792878	LEASE	EDITION 2
23/6/1998	5074693	SURRENDER OF LEASE	EDITION 3
7/1/2013	AH466802	DEPARTMENTAL DEALING	
15/1/2013	DP1181268	DEPOSITED PLAN	
24/6/2013	AH622164	REQUEST	FOLIO CANCELLED

\*\*\* END OF SEARCH \*\*\*

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SEARCH DATE 23/2/2021 9:03AM

FOLIO: 1/1181268

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		VOL 5159 FOL 106 VOL 4517 FOL 90 1-2/533835 335/753848			93
Recorded	Number	Type of Instrument			C.T. Issue
15/1/2013	DP1181268	DEPOSITED PLAN			LOT RECORDED FOLIO NOT CREATED
24/6/2013	AH827345	DEPARTMENTAL DEALI	NG		FOLIO CREATED EDITION 1
23/4/2014	DP1195542	DEPOSITED PLAN			
20/5/2015	AJ356883	TRANSFER GRANTING	EASEMENT	I	EDITION 2
23/5/2017	AM412160	LEASE			EDITION 3
19/7/2018	AN471831	APPLICATION FOR RE ACTION AFFECTING C		-	
4/8/2020	AQ294846	DEPARTMENTAL DEALI	NG		
	* * *	END OF SEARCH ***			

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PRINTED ON 23/2/2021





SEARCH DATE 23/2/2021 9:03AM

FOLIO: 2/533835

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First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 11100 FOL 35

Recorded	Number	Type of Instrument	C.T. Issue
28/3/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
30/6/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
10/5/1989	Y342683	LEASE	EDITION 1
13/1/1998	3726462	LEASE	EDITION 2
9/3/1998	3841863	CHANGE OF NAME	EDITION 3
19/7/1999	5994173	LEASE	EDITION 4
7/1/2013	AH466802	DEPARTMENTAL DEALING	
15/1/2013	DP1181268	DEPOSITED PLAN	
24/6/2013	AH622164	REQUEST	FOLIO CANCELLED

\*\*\* END OF SEARCH \*\*\*

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SEARCH DATE 23/2/2021 9:03AM

FOLIO: 99/753848

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First Title(s): SEE PRIOR TITLE(S) Prior Title(s): VOL 601 FOL 193

Recorded	Number	Type of Instrument	C.T. Issue
15/2/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
29/1/1991		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
2/5/1991		AMENDMENT: TITLE DIAGRAM	
2/12/1997	3630592	APPLICATION FOR REPLACEMENT CERTIFICATE OF TITLE	EDITION 1
13/1/1998	3726462	LEASE	EDITION 2
9/3/1998	3841863	CHANGE OF NAME	EDITION 3
19/7/1999	5994173	LEASE	EDITION 4
8/1/2001	7324434	DEPARTMENTAL DEALING	
7/1/2013	AH466802	DEPARTMENTAL DEALING	
15/1/2013	DP1181268	DEPOSITED PLAN	
24/6/2013	AH622164	REQUEST	FOLIO CANCELLED

\*\*\* END OF SEARCH \*\*\*

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SEARCH DATE 23/2/2021 9:03AM

FOLIO: 335/753848

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First Title(s): SEE PRIOR TITLE(S) Prior Title(s): VOL 5159 FOL 106

Recorded	Number	Type of Instrument	C.T. Issue
21/2/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
28/6/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
2/5/1991		AMENDMENT: TITLE DIAGRAM	
7/1/2013	AH466802	DEPARTMENTAL DEALING	
15/1/2013	DP1181268	DEPOSITED PLAN	
24/6/2013	AH622164	REQUEST	FOLIO CANCELLED
	* * *	END OF SEARCH ***	

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FOLIO: 1/1181268

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SEARCH DATE	TIME	EDITION NO	DATE
23/2/2021	9:03 AM	3	23/5/2017

## LAND

LOT 1 IN DEPOSITED PLAN 1181268 AT NORTH TAMWORTH LOCAL GOVERNMENT AREA TAMWORTH REGIONAL PARISH OF TAMWORTH COUNTY OF INGLIS TITLE DIAGRAM DP1181268

FIRST SCHEDULE

\_\_\_\_\_

HEALTH ADMINISTRATION CORPORATION

SECOND SCHEDULE (3 NOTIFICATIONS)

- 1 LAND EXCLUDES MINERALS OF THE PART(S) FORMERLY IN LOT 355 IN DP753848, LOT 1 IN DP533835 & LOT 2 IN DP533835
- 2 AJ356883 EASEMENT FOR UNDERGROUND POWER LINES 2 WIDE AFFECTING THE PART SHOWN AS "PROPOSED EASEMENT FOR UNDERGROUND POWER LINES 2 WIDE" IN DP1195542.
- 3 AM412160 LEASE TO HS CATERER PTY LTD OF SHOP 1. CAFE SHOP 2 & CANCER CLINIC SHOP 3, 31 DEAN STREET, TAMWORTH. EXPIRES: 31/5/2021. OPTION OF RENEWAL: 5 YEARS.

NOTATIONS

NOTE: THIS FOLIO MAY BE ASSOCIATED WITH A CROWN TENURE WHICH IS SUBJECT TO PAYMENT OF AN ANNUAL RENT. FOR FURTHER DETAILS CONTACT CROWN LANDS.

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

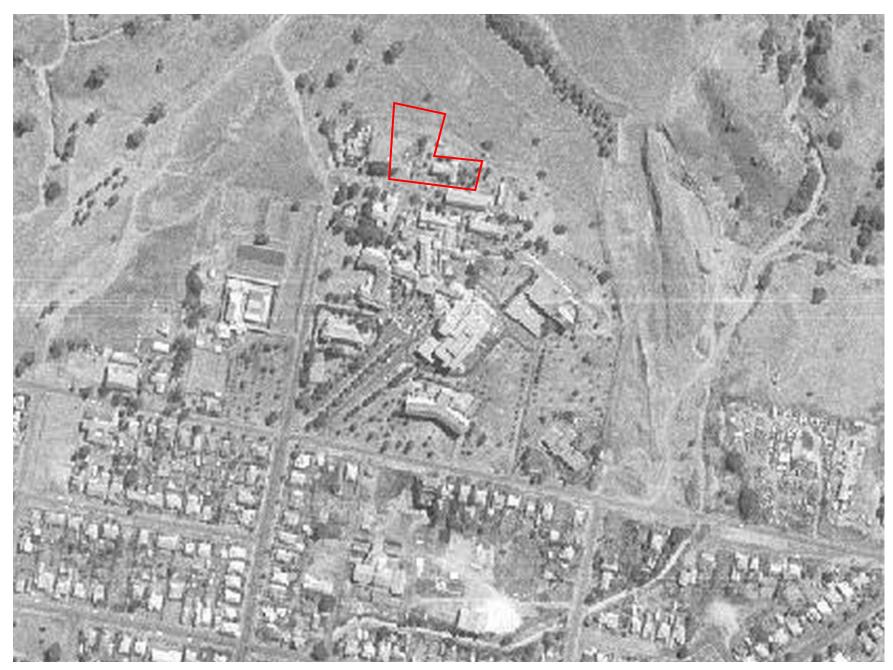
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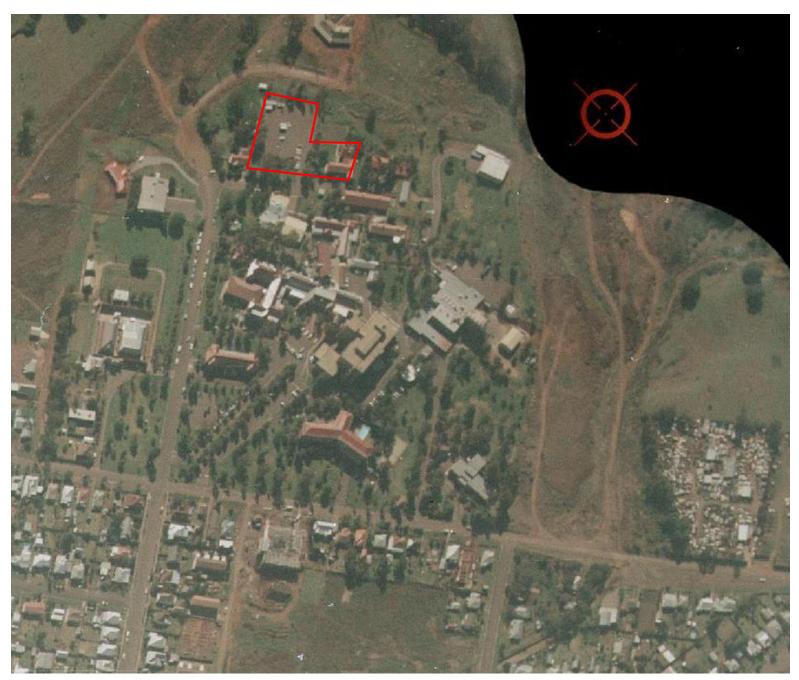
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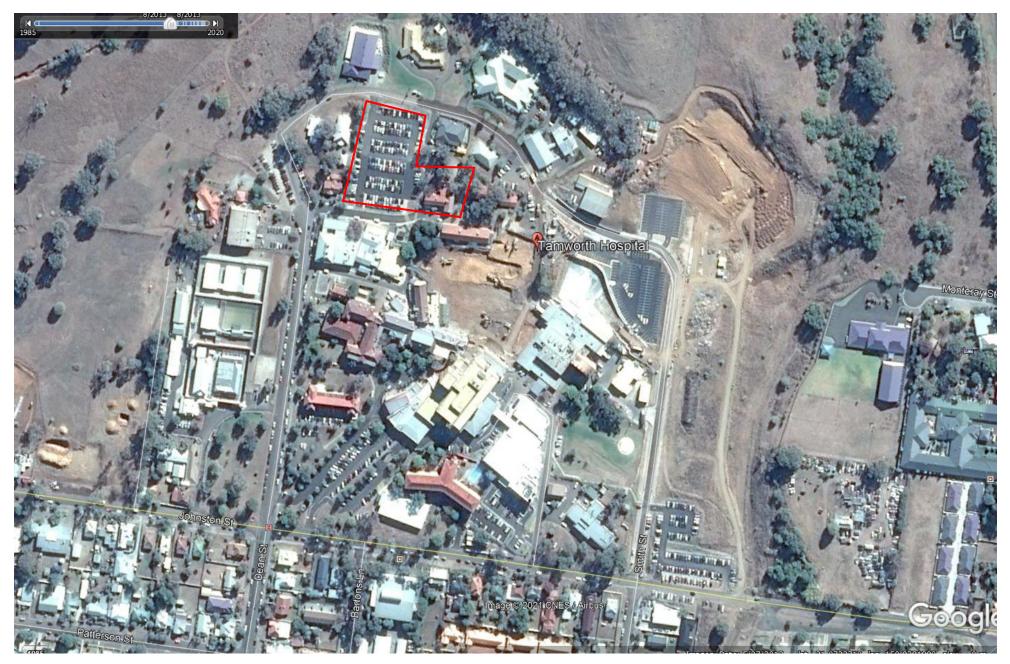








#### Google Earth 2013



## Google Earth 2015



#### Feb 2016

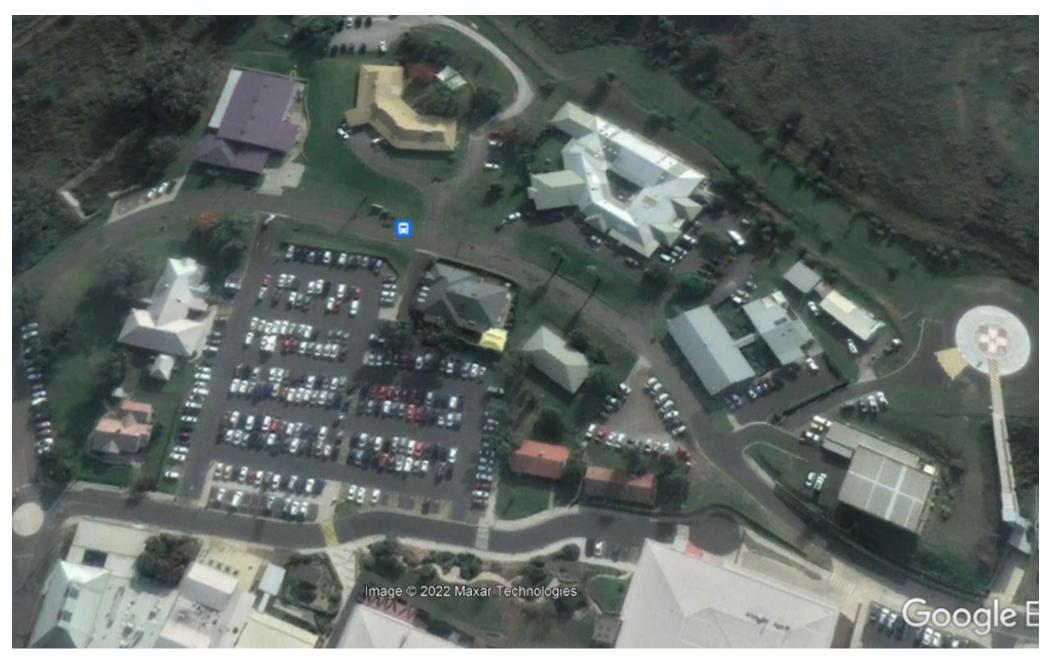




### Google Earth 2020









# Appendix B

**Results of Field Investigations** 

Regional Geotechnical Solutions RGS32576.1-AO 5 September 2022

				E	NGI	NEE	RING LOG - BOREHOLE			В	ORE	HOLE	E NO:BH-CB1
		REGIONA GEOTECI		L C	LIENT	:	RP Infrastructure			Ρ	AGE		1 of 1
_		SOLUTIO			ROJE	CT NA	ME: Car Park B Works			J	ов М	NO:	RGS32576.1
				S	ITE LC	CATI	ON: Tamworth Hospital			L	OGG	GED B	Y: LD
				т	EST LO	DCAT	ON: Refer to Figure 1			D	ATE		20/8/22
		YPE: OLE DIAN		Mounted		-	EASTING:	301991		SURF		RL:	AHD
ы				100 1		IN	CLINATION: 90° NORTHING:	000076		DATU		d <b>T</b> 4	АПО
	Drill	ing and San	npling			7	Material description and profile information				Field	d Test	
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity characteristics,colour,minor component		MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	Encountered	0.10m ES		-		GC	•		D	D			WEARING SURFACE FILL-PAVEMENT
	ncour	0.40m		-	$\mathbb{P}$	СН	0.30m grained, angular gravel, fine to medium grai <b>CLAY:</b> Medium to high plasticity, brown, with			St -	-		
	Not Er	0.50m		0.5			gravel, fine grained, angular, brown	1 como	M > W <sub>P</sub>	VSt			
	z	ES SPT		-	[- <u>-</u>				2		ΗP	300	
		7,5,7		-								- 350	
		N=12			<u> </u>								
		0.95m		1.0_	<u> </u>								
				-									
				-	<u>[</u> -								
				1.5									
				-									
				-									
				-	×	С	1.80m Gravelly Silty CLAY: Medium plasticity, mo	ttled	× ×	н	-		
		2.00m		2.0			red-brown, grey, black, fine to medium grair angular, with ironstone	ned,	M < W				
		SPT		-					_				
		12,15,22		-	× ×	1					HP	550	
		N=37			<u>ل</u> م						HP	550	
		2.45m		2.5	×	-							
				-	<u>}×</u> _								
				-			Gravelly CLAY: Medium plasticity, mottled		_	H/Fr	-		EXTREMELY WEATHERED
				3.0			red-brown, grey, black, fine to medium grain	ned,					SILTSTONE
				-		-	angular gravel						
				-	-0-0								
				-									
		3.50m		3.5									
		SPT		-									
		12,20,25 N=45		-		1							
				4.0			3.95m						
		3.95m		4.0	1		Hole Terminated at 3.95 m						
				-	-								
				-	1								
				4.5	]								
				-	1								
				-	1								
				-	-								
LEG	END:		1	Notes, Sa	mples a	nd Tes	<u>s</u>	Consiste			_	CS (kPa	
Wate	_	or Louis		U <sub>50</sub>	50mm	Diame	er tube sample		/ery Soft Soft		<2 25	25 5 - 50	D Dry M Moist
-		er Level e and time sl	hown)	CBR	Bulk s	ample f	or CBR testing		Firm		50	) - 100	W Wet
►	•	er Inflow	í í	E ASS			l sample coil Sample		Stiff /ery Stiff			)0 - 200 )0 - 400	W <sub>p</sub> Plastic Limit W <sub>L</sub> Liquid Limit
		er Outflow		В	Bulk S	Sample			lard riable		>4	100	
		auges											
<u>Stra</u>		radational or	<u> </u>	Field Test	_			Density	V		ery Lo	ose	Density Index <15%
 <u>Stra</u>	Gi tra	radational or ansitional stra efinitive or dis	ata 🗍	Field Test PID DCP(x-y)	Photo		n detector reading (ppm) etrometer test (test depth interval shown)	<u>Density</u>	V L ME	Lo	oose	ose 1 Dense	Density Index 15 - 35%

				E	NGI	NEE	RING LOG - BOREHOLE			В	ORE	EHOLE	NO:BH-CB2
		REGION/ GEOTEC		L C	LIENT	:	RP Infrastructure			Р	AGE	:	1 of 1
_		SOLUTIO			ROJE	CT NA	ME: Car Park B Works			J	ОΒΙ	NO:	RGS32576.1
				S	ITE LC	CATI	ON: Tamworth Hospital			L	OGC	GED B	Y: LD
				Т	EST LO	OCAT	ION: Refer to Figure 1			D	ATE		20/8/22
DR	ILL 1	TYPE:	Truck	Mounted	d Drill F	Rig	EASTING:	301964	1 m 🖇	SURF	ACE	RL:	
BO	REH	OLE DIAN	IETER	: 100 n	nm	IN	CLINATION: 90° NORTHING:	6560579	9 m l	DATU	M:		AHD
	Dril	ling and Sar	mpling				Material description and profile information				Fiel	d Test	
METHOD	WATER	SAMPLES	RL (Not measured	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity characteristics,colour,minor component		MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	Not Encountered	0.10m 		-		GC	Output: ASPHALT FILL: Sandy GRAVEL, fine to medium grain pale brown, with some clay, fine to medium sand, angular gravel		D	D	-		WEARING SURFACE FILL-PAVEMENT
	Not End	0.50m 0.60m \$ <del>\$\$</del> 8,10,17 N=27		0.5		CI	0.40m CLAY: Medium plasticity, brown, with some fine to medium grained, angular		M < %	н	-		
		0.95m		1.0			1.00m Hole Terminated at 1.00 m				-		
<u>Wate</u> ▼	Wat (Da Wat I Wat ta Ch	ter Level te and time s ter Inflow ter Outflow <u>anges</u> radational or	hown)	Notes, Sa U₅₀ CBR E ASS B Field Test PID	50mm Bulk s Enviro Acid S Bulk S	i Diame ample f onmenta Sulfate S Sample	ter tube sample or CBR testing al sample Soil Sample	S S F H St S VSt N H H	ency /ery Soft Firm Stiff /ery Stiff Hard Friable V L	V	<225501020	5 - 50 0 - 100 00 - 200 00 - 400 400	D Dry M Moist W Wet W <sub>p</sub> Plastic Limit W <sub>L</sub> Liquid Limit Density Index <15%
	_ D	ansitional stra efinitive or di trata change		DCP(x-y) HP	Dynan	nic pen	on detector reading (ppm) etrometer test (test depth interval shown) meter test (UCS kPa)		L MI D VD	D M		n Dense ense	Density Index 15 - 35% Density Index 35 - 65% Density Index 65 - 85% Density Index 85 - 100%

		REGIONAL GEOTECHI SOLUTION	NICAL	C P S	LIENT: ROJEC ITE LO	CT NA				F J L	PAGE IOB	e: No: Ged B	E NO: BH-CB3 1 of 3 RGS32576.1 SY: LD 20/8/22
		YPE: Tr OLE DIAME		lounteo 100 m		-	Easting: Clination: 90° Northing:	3019 65605		SURF DATU		RL:	AHD
	Drill	ing and Samp	oling				Material description and profile information				Fiel	d Test	
METHOD	WATER		RL (Not leasured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticit characteristics,colour,minor component		MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	Encountered	0.10m ES				GC	Output: ASPHALT FILL: Sandy Clayey GRAVEL, fine to media grained, pale brown, fine to coarse grained angular gravel						WEARING SURFACE FILL-PAVEMENT
	Not	0.50m 0.60m 5,9,13 N=22 0.95m		0.5  1.0		CI	CLAY: Medium plasticity, brown, with some fine grained, angular	gravel,	M < Wp	VSt - H			
		2.00m SPT 9,13,13 N=26 2.45m		- 1.5_ - 2.0_ - 2.5_ -		CI	1.30m Gravelly CLAY: Medium plasticity, mottled grey, fine to medium grained angular grave						High moisture at 2.2m High drilling resistance at
		3.50m SPT 9,18,25 N=43 3.95m		- 3.0_ - - 3.5_ - - 4.0_ - -	אין	CI	3.10m Silty CLAY: Medium plasticity, brown, pale grey, with some fine to medium grained any gravel	brown, gular		H / Fr	-		2.6m, possible boulder
	Wat (Dat Wat	5.00m er Level e and time shor er Inflow er Outflow	own) A	- 4.5 - - - - - - - - - - - - - - - - - - -	50mm Bulk sa Enviro Acid S Bulk S	Diame ample f nmenta ulfate S	<b>s</b> ter tube sample or CBR testing I sample ioil Sample	Consis VS S F St VSt H Fb	stency Very Sol Soft Firm Stiff Very Stif Hard Friable			<b>CS (kPz</b> 25 5 - 50 0 - 100 00 - 200 00 - 400 400	D Dry M Moist W Wet W <sub>p</sub> Plastic Limit
	Gi tra De	radational or ansitional strata efinitive or distic rata change	a D	ield Test PID CP(x-y) HP	Photoi Dynan	nic pene	n detector reading (ppm) etrometer test (test depth interval shown) meter test (UCS kPa)	<u>Densit</u>	у V L М D VI	L D N C	'ery Lo oose /lediur )ense /ery D	n Dense	Density Index <15% Density Index 15 - 35% Density Index 35 - 65% Density Index 65 - 85% Density Index 85 - 100%

	ENGINEE	RING LOG - BOREHOLE		E	BOREH	IOLE N	o:BH-CB3
REGIONAL GEOTECHNICAL	CLIENT:	RP Infrastructure		F	PAGE:		2 of 3
SOLUTIONS	PROJECT N/	ME: Car Park B Works		J		<b>D</b> :	RGS32576.1
	SITE LOCAT	ON: Tamworth Hospital		L	OGGE	ED BY:	LD
	TEST LOCAT	<b>ION:</b> Refer to Figure 1		0	DATE:		20/8/22
	ounted Drill Rig				ACE F	RL:	
BOREHOLE DIAMETER:	100 mm IN	ICLINATION: 90° NORTHING: 6560 Material description and profile information	)580 m	DATU		Teet	AHD
Drilling and Sampling	z				Field	Test	
GO HI I SAMPLES RL (Not measured)	() H () H () H () H () H () H () H () H	MATERIAL DESCRIPTION: Soil type, plasticity/partice characteristics,colour,minor components	MOISTURE	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
LGC Part 18,25/110mm 5.26m 6.50m 6.50m SPT 15,30 N=R 6.80m	CI	Silty CLAY: Medium plasticity, brown, pale brown grey, with some fine to medium grained angular gravel (continued)	",	H / Fi		-600	
Water     Image: Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system       Image: Constraint of the system     Constraint of the system <tr< td=""><td>R Bulk sample Environment S Acid Sulfate Bulk Sample</td><td>ster tube sample S for CBR testing F al sample St Soil Sample VSt H Fb</td><td>sistency Very Soi Soft Firm Stiff Very Stif Hard Friable sity V L M</td><td>ff</td><td>&lt;25 25 - 50 - 100</td><td>50 100 - 200 - 400 0</td><td>Moisture Condition         D       Dry         M       Moist         W       Wet         Wp,       Plastic Limit         WL       Liquid Limit         Density Index &lt;15%</td>       Density Index 15 - 35%         Density Index 35 - 65%</tr<>	R Bulk sample Environment S Acid Sulfate Bulk Sample	ster tube sample S for CBR testing F al sample St Soil Sample VSt H Fb	sistency Very Soi Soft Firm Stiff Very Stif Hard Friable sity V L M	ff	<25 25 - 50 - 100	50 100 - 200 - 400 0	Moisture Condition         D       Dry         M       Moist         W       Wet         Wp,       Plastic Limit         WL       Liquid Limit         Density Index <15%

						ENGIN	IEERING	LOG -	CORED B	ORFH				BORF		BH-CB3	
	1	R	EGIO	NAL		CLIENT:		P Infrasti						PAGE		Page 3 of 3	ć
	_			CHNIC	AL			ar Park E						JOBN		RGS32576.1	
		- 31		10113		SITE LO		amworth							ED BY:	LD	
							CATION: R							DATE		20/8/22	
	RILL					ounted Dril	-	<b></b>		EAST		301948			FACE RI		
				AMETE	<b>R:</b> 10		INCLINATI			NORI	HING:	6560580	) m	DAT		AHD	
	Drillin	g and	d Sam	pling			Material descrip	tion and pr	ofile information			Testing		1	Rock M	ass Defects	
METHOD	WATER	me	RL Not easured	DEPTH (m)	GRAPHIC LOG		Material Descr particle chara minor compo	cteristics, o	colour,	WEATHERING	ESTIMATED STRENGTH	I <sub>s(50)</sub> D/A	RQD %	Defect Spacing mm	ir	ect Description: Type, nclination, planarity, oughness, coating, thickness	
				- - - - - - - - - - - - - - - - - - -													
60.00	1				× × × × × ×	SILTSTON	DRING AT 8.70r IE: Brown, grey		y bedded	HW	L						
				9.0 - - 9.5 - - - -	x x x x x x x x x x x x x x x x x x x					MW			0	20	genera	fractured core, ally jointed with iron g and clay infilled	
1				-	$\times \times \times$												
8 <u>M</u>	EGENI ethod				<u>Beddi</u> Lamin		inated at 10.00 <20mm	m <mark>Weat</mark> EW	thering Extremely We	eathered	Stre VL	<u>ngth</u> Very Lo <sup>,</sup>	N	<u> <sub>s(5)</sub></u> <0		<b>Defect Type</b> JT Joint	
W			Vash E Rock R		Thinnl	y Bedded	20-200mm	HW	Highly Weath	ered	L	Low		0.1	- 0.3	PT Parting	
C	В	C	Claw or	Blad Bit	Thickly	m Bedded y Bedded	200-600mm 600-2000mm	MW SW	Moderately W Slightly Weat		н	Medium High		1 -	3	SZ Shear Zone	
	MLC Q,HQ,		NMLC ( Vireline	Core Coring	Very T Massi	- Thickly Beddeo ve	1 2000mm No Visible Bedo	fR fina	Fresh		VH EH	Very Hig Extreme				CS Crushed Seam	
	<u>ب</u> ەر ، ر			Sound				an iy					∍y ⊓ig				
					Degre Fragm	e of Fracturin nented	<u>19</u> <20mm				Rou VR	ghness Very Ro	uah	<u>Coati</u> CN	ng Clean	<u>Planarity</u> PL Planar	
2.2					Highly	Fractured	20mm to 40mm				RO	Rough	9''	SN	Stained	CU Curved	b
W7 D1					Fractu Slightl	ired y Fractured	40mm to 200m 200mm to 1000				SO SL	Smooth Slickens	ided	VN CO	Veneer(< Coating(	<1mm) ST Steppe 1-5mm) IR Irregula	

				E	NGI	NEE	RING LOG - BOREHOLE			В	ORE	HOLE	ENO:BH-CB4
		REGION/ GEOTECI		L C		:	RP Infrastructure			Р	AGE	:	1 of 1
_		SOLUTIO			ROJE	CT NA	ME: Car Park B Works			J	ОΒΙ	NO:	RGS32576.1
				S	ITE LO	CATI	ON: Tamworth Hospital			L	OGC	GED B	Y: LD
				т	EST LO	CAT	<b>ON:</b> Refer to Figure 1			D	ATE	:	20/8/22
DR	ILL T	YPE:	Truck I	Mounted	d Drill F	Rig	EASTING:	301987	m :	SURF	ACE	RL:	
BO	REH	OLE DIAN	IETER:	: 100 n	nm	IN	CLINATION: 90° NORTHING:	6560543	3 m l	DATU	M:		AHD
	Drill	ling and Sar	npling			-7	Material description and profile information				Fiel	d Test	
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticit characteristics,colour,minor componen		MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	Encountered	0.10m 		-		GC	0.94m ASPHALT FILL: Sandy Clayey GRAVEL, fine to medi grained, pale grey, fine to medium grained angular gravel						WEARING SURFACE FILL-PAVEMENT
	Not Ene	0.50m		0.5	<u>XX</u>		0.45m			St -	-		
	z	0.60m କ୍ରିକ୍ରି		-		01	black, with some fine grained angular grave ironstone	el and	M < W <sub>P</sub>	VSt			
		4,7,11 N=18		-	<u> </u>				2	H / Fr	HP	550	
		-		1.0	<u> </u>								
		0.95m		-	×								
				-	x								
				-									
				1.5_	<u></u>								
				-	<u> </u>								
				-	<u> </u>								
		2.00m	-	2.0	<u> </u>								
		SPT		-							HP	>600	
		6,12,18 N=30			×								
		2.45m	-	2.5	×								
		2.45111		-	<u></u>								
				-	 								
				20	<u> </u>								
				3.0	<u> </u>		Hole Terminated at 3.00 m						
				-	-								
				-									
				3.5_	-								
				-									
				-									
				4.0									
				-									
				-									
				4.5									
				-									
				-									
				-	1								
LEG	END:	1		Notes, Sa	mples a	nd Tes	<u>s</u>	Consiste		1		CS (kPa	
Wate				U <sub>50</sub>	50mm	Diame	er tube sample		/ery Sofi Soft	t		25 5 - 50	D Dry M Moist
₹		ter Level te and time s	hown)	CBR	Bulk s	ample f	or CBR testing	FF	irm		50	0 - 100	W Wet
►	Wat	ter Inflow	· · · ·	E ASS	Acid S	ulfate S	l sample coil Sample	VSt V	Stiff /ery Stiff	f	20	)0 - 200 )0 - 400	W <sub>p</sub> Plastic Limit W <sub>L</sub> Liquid Limit
 Strat		ter Outflow anges		В	Bulk S	ample			lard riable		>/	100	
	G	radational or	·	Field Test PID		onisativ	n detector reading (ppm)	Density	V L		ery Lo bose	ose	Density Index <15% Density Index 15 - 35%
		ansitional stra efinitive or di		DCP(x-y)	Dynan	nic pen	etrometer test (test depth interval shown)		M	D M	ediun	n Dense	e Density Index 35 - 65%
	st	rata change		HP	Hand	enetro	meter test (UCS kPa)		D VD		ense ery D	ense	Density Index 65 - 85% Density Index 85 - 100%

					ENGI	NEE	RING LOG - BOREHOLE			в	ORE	HOLE	E NO:BH-CB5
	4	REGIONA GEOTECI		,	CLIENT		RP Infrastructure				AGE		1 of 1
_		SOLUTIO			PROJE	CT NA	ME: Car Park B Works			J	OBI	NO:	RGS32576.1
				\$		CATI	ON: Tamworth Hospital			L	ogo	GED B	Y: LD
				٦	IEST L	OCAT	ION: Refer to Figure 1			D	ATE	:	20/8/22
DR	ILL T	YPE:	Truck	Mounte	d Drill	Rig	EASTING:	302006	m :	SURF	ACE	RL:	
		OLE DIAN				-	CLINATION: 90° NORTHING:			DATU			AHD
	Drill	ling and Sar	npling				Material description and profile information				Fiel	d Test	
						NO				5			
METHOD	WATER	SAMPLES	RL	DEPTH	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticit		MOISTURE	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
MEJ	٨M		(Not measure	d) (m)	GR	ASSI	characteristics,colour,minor componen	IS	MOIS	ONSI	Test	Å	
<b>–</b>	-			_		CL				O			WEARING SURFACE
AD/T	Not Encountered	0.10m ES				GC	ASPHALT FILL: Sandy Clayey GRAVEL, fine to medi		D	D			FILL-PAVEMENT
	coun				$\mathbb{X}$	×	grained, pale grey, fine to coarse grained s angular gravel	and,					
	ot En	0.40m 0.50m		0.5		<u></u>	0.50m						
		 5,25/100mr	'n			CI	Gravelly CLAY: Medium plasticity, brown,	grey	< W <sub>P</sub>	H/Fr			COLLUVIUM
		N=R 0.75m			$\frac{1}{1}$				Σ				
				1.0			1.00m						
					-	1	Hole Terminated at 1.00 m						
					-								
					_								
				1.5	<u>'</u>								
					-								
					_								
				2.0	-								
LEG Water					-								
				2.5									
					-								
				3.0	-								
				0.9									
					-								
				3.5	5								
					1								
					-								
				4.0	1								
					-								
					1								
				4.5	-								
					]								
					-								
					]								
LEG	END:			Notes, S	amples a	nd Tes	<u>is</u>	Consiste			_	CS (kPa	
Wate	_	or Louis		U <sub>50</sub>	50mm	n Diame	ter tube sample		/ery Sofi Soft		<2 25	25 5 - 50	D Dry M Moist
-		ter Level te and time s	hown)	CBR	Bulks	ample f	or CBR testing al sample	FF	<sup>-</sup> irm Stiff		50	) - 100 )0 - 200	W Wet
	Wat	ter Inflow	ĺ	ASS	Acid S	Sulfate S	Soil Sample	VSt V	/ery Stiff		20	00 - 400	
<u>Stra</u>		ter Outflow anges		В	Bulk S	Sample			lard riable		>/	100	
	G	radational or	-t	Field Tes PID		ionisatio	on detector reading (ppm)	Density	V L		ery Lo bose	oose	Density Index <15% Density Index 15 - 35%
	_ D	ansitional stra efinitive or di		DCP(x-y)	Dynai	nic pen	etrometer test (test depth interval shown)		M	D M	ediun	n Dense	e Density Index 35 - 65%
	st	rata change		nr	nand	- enetro	meter test (UCS kPa)		D VD		ense ery De	ense	Density Index 65 - 85% Density Index 85 - 100%

				E	NGI	NEE	RING LOG - BOREHOLE			В	ORE	HOLI	E NO:BH-CB6
		REGION/ GEOTECI		с		:	RP Infrastructure			Р	AGE	:	1 of 1
		SOLUTIO			ROJE	CT NA	ME: Car Park B Works			J	OB I	NO:	RGS32576.1
				S	ITE LO	CATI	<b>DN:</b> Tamworth Hospital			L	ogo	GED B	Y: LD
				T	EST LO	CAT	<b>ON:</b> Refer to Figure 1			D	ATE	:	20/8/22
DR	ILL T	YPE:	Truck N	/lounted	d Drill F	Rig	EASTING:	302023	m s	SURF	ACE	RL:	
во	REH	OLE DIAN	IETER:	100 m	חm	IN	CLINATION: 90° NORTHING:	6560534	m I	DATU	M:		AHD
	Drill	ing and Sar	npling				Material description and profile information				Fiel	d Test	
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticit characteristics,colour,minor componen		MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	Encountered	0.10m ES		-	$\bigotimes$	GC	• <sup>0.04m</sup> ASPHALT FILL: Sandy Clayey GRAVEL, fine to medi	/ um	D	D			WEARING SURFACE
-	count			-	$\bigotimes$		grained, pale grey, fine to medium grained angular gravel	sand,					(Base and Subbase)
		0.50m		0.5	Ţ		0.45m		0	11/5-			
	Not	0.60m .∰S⊤		_		CI	<b>Silty CLAY:</b> Medium plasticity, red-brown, some gravel, fine grained, angular	grey, with	× ×	H/Fr	HP	>600	
		9,11,14		-	<u> </u>				Σ				
		N=25			×								
		<del>1:99</del> m		1.0	×								
		U 1.20m		_									
				-	<u>×</u>								
				1.5	×								
				-	×		1.70m						
				_	<u>×                                    </u>	CI	1.70m Silty CLAY: Medium plasticity, brown, with	some	-	н			
					×		gravel, fine to medium grained, angular						
				2. <u>0</u>	×								
				_	×								
				-	×								
				2.5	x								
		2.60m		_	^								
		SPT		_	×						HP	500	
		5,9,12 N=21		20	×						HP	550	
		3.05m		3.0	×		3.05m Hole Terminated at 3.05 m						
		5.0011		-			Hole Terminated at 3.05 m						
				_									
				3.5									
				-									
				4.0									
				-									
				-									
				4.5									
				-									
				-									
LEG Wat	END:		<u> 1</u>	lotes, Sa	mples a	nd Tes	<u> </u>	Consiste	ncy /ery Soft		<u>U</u> <2	<b>CS (kPa</b> 25	a) Moisture Condition D Dry
_	_	er Level					er tube sample	s s	Soft		25	5 - 50	M Moist
_	(Dat	te and time s	hown)	BR E			or CBR testing I sample		Firm Stiff			) - 100 )0 - 200	W Wet W <sub>p</sub> Plastic Limit
		er Inflow er Outflow		ASS B	Acid S Bulk S		oil Sample		/ery Stiff łard			)0 - 400 100	
Stra		anges				anpie		Fb F	riable				
		radational or ansitional stra		Field Test PID	_	onisatio	n detector reading (ppm)	<u>Density</u>	V L		ery Lo bose	ose	Density Index <15% Density Index 15 - 35%
	_ D	efinitive or di		DCP(x-y) HP	Dynan	nic pen	etrometer test (test depth interval shown) meter test (UCS kPa)		ME D		ediun ense	n Dense	-
	st	rata change			i latiu l	Great					ense ery De	ense	Density Index 85 - 85% Density Index 85 - 100%

				E	NGI	NEE	RING LOG - BOREHOLE			В	ORE	HOLE	E NO: BH-CB7
	4	REGION/		С	LIENT	:	RP Infrastructure			Р	AGE		1 of 1
		SOLUTIO			ROJE	CT NA	ME: Car Park B Works			J	ови	NO:	RGS32576.1
				S	ITE LC	CATI	<b>DN:</b> Tamworth Hospital			L	OGG	GED B	Y: LD
				Т	EST LO	CAT	<b>ON:</b> Refer to Figure 1			D	ATE	:	20/8/22
DR	ILL 1	TYPE:	Truck N	lounted	d Drill F	Rig	EASTING: 302	2023 ו	m s	SURF	ACE	RL:	
во	REH	OLE DIAN				-	CLINATION: 90° NORTHING: 6560	0509 i		DATU			AHD
	Dril	ling and Sar	mpling				Material description and profile information				Field	d Test	
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/partic characteristics,colour,minor components	cle	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	Encountered	0.10m ES		_	$\times\!\!\!\times$	GC	0.06m ASPHALT FILL: Sandy Clayey GRAVEL, fine to medium	_/	D	D			WEARING SURFACE
	count			-	$\bigotimes$		grained, pale grey, fine to medium grained sand, angular gravel						
	Not End	0.50m SPT 24,25 N=R 0.80m		0.5 - - 1.0 -		CI	0.45m CLAY: Medium plasticity, red-brown, with some gravel, fine grained, angular		M < W	H / Fr			COLLUVIUM
LEC Wat	16	2.60m SPT 5,25,25/100r N=R	- nm	- 1.5 - 2.0 - 2.5 - - - - - - - - - - - - - - - - - - -		СІ	<u>1.70m</u> Gravelly CLAY: Medium plasticity, grey, brown, fi to medium grained, angular gravel	ine					
		3.00m		-			Hole Terminated at 3.00 m						
LEG	SEND:		1	lotes, Sa	mples a	nd Tes		nsisten		1		CS (kPa	
	Wa (Da - Wa Wa <b>ta Ch</b>	ter Level te and time s ter Inflow ter Outflow <u>anges</u>	hown)	U₅₀ CBR E ASS B	Bulk s Envirc Acid S Bulk S	ample f nmenta	er tube sample S or CBR testing F I sample St oil Sample VSt H H	So Fin Stir Ve Ha Fri	m ff ry Stiff		50 10 20	5 - 50 0 - 100 00 - 200 00 - 400 400	D Dry M Moist W Wet W <sub>p</sub> Plastic Limit W <sub>L</sub> Liquid Limit Density Index <15%
	tr: D	iradational or ansitional stra efinitive or di trata change	ata	Field Test PID DCP(x-y) HP	Photoi Dynan	nic pen	n detector reading (ppm) etrometer test (test depth interval shown) meter test (UCS kPa)	<u>isity</u>	V L ME D VD	Lo M D	oose	n Dense	Density Index 15 - 35%

				E	NGI	NEE	RING LOG - BOREHOLE			В	ORE	EHOLI	E NO:BH-CB8
		REGION/ GEOTEC		~			RP Infrastructure				AGE		1 of 1
		SOLUTIO			ROJE	CT NA	ME: Car Park B Works			J	ОΒΙ	NO:	RGS32576.1
				S		CATI	ON: Tamworth Hospital			L	OGC	GED B	Y: LD
				т	EST LO	OCAT	ON: Refer to Figure 1			D	ATE		20/8/22
DRI		YPE:	Truck	Mountee	d Drill F	Ria	EASTING:	302008	3 m s	SURF	ACE	RL:	
		OLE DIAN				-	CLINATION: 90° NORTHING:			DATU			AHD
	Drill	ing and Sar	npling				Material description and profile information				Fiel	d Test	
METHOD	WATER	SAMPLES	RL	DEPTH	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticit		MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
	MA		(Not measured)	(m)	GRA LC	CLASSIF SYN	characteristics,colour,minor componer	ts	MOIS	CONSIS	Test	Re	
AD/T	Encountered			-		GC	*** ASPHALT FILL: Sandy Clayey GRAVEL, fine to med grained, pale grey, fine to medium grained		D	D			WEARING SURFACE FILL-PAVEMENT
	Not Enco			0.5			angular gravel 0.45m CLAY: Medium plasticity, red-brown, with s			н	-		
	ž	0.60m	-	-			gravel, fine grained, angular	ome	M < W <sub>P</sub>		ΗP	>600	
		SPT 10,20,25 N=45					1.00m						
		1.05m	1	-			Hole Terminated at 1.00 m						
				-	1								
				1.5	+								
				-	1								
				-	-								
					1								
				2. <u>0</u>	-								
					1								
				-	-								
				2.5	1								
				-	-								
				-	1								
					1								
				3. <u>0</u>	+								
					1								
				-	-								
				3.5	1								
				-	-								
				-	1								
					]								
				4.0	+								
					1								
				-	-								
				4.5	1								
				-	-								
				-	1								
					]								
LEG	END:			Notes, Sa	mples a	nd Tes	<u>s</u>	Consiste	ncy		<u> </u>	CS (kPa	a) Moisture Condition
Wate	er				-		_	VS \	/ery Soft Soft		<2	25 5 - 50	D Dry M Moist
Ţ		er Level	hours	U₅₀ CBR	Bulk s	ample f	ter tube sample or CBR testing	FF	irm		50	0 - 100	W Wet
►	•	te and time s er Inflow	í í	E ASS			l sample ioil Sample		Stiff /ery Stiff			00 - 200 00 - 400	P
-	Wat	er Outflow		B		Sample		н н	lard			400 400	
<u>Stra</u>		<mark>anges</mark> radational or		Field Test	ts			Fb F Density	riable V	V	ery Lo	oose	Density Index <15%
	 tra	ansitional stra	ata	PID	Photo		n detector reading (ppm)		L	Lo	oose		Density Index 15 - 35%
		efinitive or di rata change	stict	DCP(x-y) HP			etrometer test (test depth interval shown) meter test (UCS kPa)		ME D	D	ense	n Dense	Density Index 65 - 85%
								1	VD	) V	ery D	ense	Density Index 85 - 100%

				E	NGI	NEE	RING LOG - BOREHOLE			В	ORE	HOLE	E NO:BH-CB9
		REGION/		~	LIENT		RP Infrastructure				AGE		1 of 1
		SOLUTIO			ROJE	CT NA	ME: Car Park B Works			J	ові	NO:	RGS32576.1
				S	ITE LC	CATI	ON: Tamworth Hospital			L	OGC	GED B	Y: LD
1				т	EST LO	CAT	ON: Refer to Figure 1			D	ATE	:	20/8/22
DR	ILL 1	YPE:	Truck I	Mounted	d Drill F	Rig	EASTING:	301989	) m	SURF	ACE	RL:	
во	REH	OLE DIAN				-	CLINATION: 90° NORTHING:	6560515	5m I	DATU	M:		AHD
	Dril	ling and Sar	mpling				Material description and profile information				Fiel	d Test	
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity characteristics,colour,minor component		MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	Not Encountered	0.50		-		GC	ASPHALT FILL: Sandy Clayey GRAVEL, fine to mediu grained, grey, fine to medium grained sand, gravel 0.45m		D	D	-		WEARING SURFACE FILL-PAVEMENT
	Not	0.50m SPT 9,10,12 N=22		0. <u>5</u> - -		СН	CLAY: Medium to high plasticity, red-brown some gravel, fine grained, angular	, with			HP HP	450 500	
		0.95m		1.0			0.95m Hole Terminated at 0.95 m				-		
LEG Wat													
LEG Wat Stra	Wat (Da Wat I Wat I Wat I <del>I Ch</del> tra G tra	ter Level te and time s ter Inflow ter Outflow <b>anges</b> radational or radational stra efinitive or di rata change	Notes, Sa U₅0 CBR E ASS B Field Test PID DCP(x-y) HP	50mm Bulk s Enviro Acid S Bulk S S Photoi Dynan	Diame ample f onmenta Gulfate S Gample conisation	<b>s</b> ter tube sample or CBR testing I sample toil Sample on detector reading (ppm) etrometer test (test depth interval shown) meter test (UCS kPa)	S S F F St S VSt V H F	/ /ery Soft Soft Stiff /ery Stiff Hard Friable V L D V V	V Lu D M	22 25 50 20 20 20 20 20 20 20 20 20 20 20 20 20	5 - 50 ) - 100 )0 - 200 )0 - 400 400 pose n Dense	D Dry M Moist W Wet W <sub>p</sub> Plastic Limit W <sub>L</sub> Liquid Limit Density Index <15% Density Index 15 - 35%	

				E	NGI	NEE	RING LOG - BOREHOLE			В	OR	EHOL	E NOBH-CB10
		REGION/ GEOTEC		L C	LIENT	:	RP Infrastructure			Ρ	AGE	≣:	1 of 1
_		SOLUTIO			ROJE	CT NA	ME: Car Park B Works			J	OB	NO:	RGS32576.1
				S		CATI	ON: Tamworth Hospital			L	OG	GED E	SY: LD
				т	EST L	OCAT	ION: Refer to Figure 1			D	ATE	:	21/8/22
DR	п т	YPE:	Truck I	Mounted	d Drill I	Ria	EASTING:	30198	0 m 9	SURF	ACF	RI ·	
		OLE DIAN				-	CLINATION: 90° NORTHING:			DATU			AHD
	Drill	ing and Sar	mpling				Material description and profile information				Fiel	d Test	
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticit characteristics,colour,minor componen		MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	ered			-	$\times$	GC	ممتعالية (ASPHALT FILL: Sandy Clayey GRAVEL, fine to medi			D			WEARING SURFACE
	Not Encountered			-	$\bigotimes$	L	Digital Clayey GRAVEL, fine to medi	um 					
	Enc			0.5	x  x	CI	Silty CLAY: Medium plasticity, mottled bro with some gravel, fine to medium grained,		< W <sub>P</sub>	H / Fr			
	Not			0. <u>5</u>	×		war como gravol, into to modiam granioa,	angalar	Σ				
					<u></u>								
				-	<u> </u>								
				1.0	<u> </u>								
				_	×	1							
				-	<u></u>								
						1							
		1.50m	-	1.5	×						HP	>600	
		SPT		-	×	1							
		23,25,30		-									
		N=55											
		1.95m	1	2.0_	[×								
				-	×								
					x								
				2.5	<u>     ×</u>								
				2.5	[								
				_	×	L	<u>2.70m</u>						
				-		CI	Gravelly CLAY: Medium plasticity, pale bro fine to medium grained angular gravel	own, grey,					
		3.00m		3.0							HP	2000	
		SPT 30/100mm			- <u>*</u>		3.10m					>600	
		N=R		-	-		Hole Terminated at 3.10 m						
		3.10m		-									
				3.5									
				-	-								
				-	1								
				-									
				4.0	+								
				-	1								
				]	]								
				4.5									
				4.5	1								
				-									
				-	-								
				-								L	
	END:	-	1	Notes, Sa	mples a	nd Tes	<u>is</u>	Consist				CS (kPa 25	
Wate	_	er Level		U <sub>50</sub>	50mm	Diame	ter tube sample	VS S	Very Soft Soft			25 5 - 50	M Moist
-		er Level te and time s	hown)	CBR	Bulk s	ample f	or CBR testing	F	Firm			0 - 100	W Wet
▶	•	er Inflow	í í	E ASS			al sample Soil Sample	St VSt	Stiff Very Stiff			00 - 200 00 - 400	P
		er Outflow		В		Sample		н	Hard			400	
<u>Stra</u>		<mark>anges</mark> radational or	.   1	Field Test	ts			Fb Density	Friable V	V	ery Lo	oose	Density Index <15%
		radational or ansitional stra	ata	PID	Photo		on detector reading (ppm)		L	Lo	oose		Density Index 15 - 35%
	_ D	efinitive or di	r	DCP(x-y) HP			etrometer test (test depth interval shown) ometer test (UCS kPa)		ME D		lediur ense	n Dense	e Density Index 35 - 65% Density Index 65 - 85%
	st	rata change				2	(		VD		ery D	ense	Density Index 85 - 100%

				ENGINEERING LOG - BOREHOLE							BOREHOLE NOBH-CB11				
		REGION/ GEOTEC		с	CLIENT: RP Infrastructure							<b>PAGE:</b> 1 of 1			
4		SOLUTIO			PROJECT NAME:       Car Park B Works         SITE LOCATION:       Tamworth Hospital						OB I	NO:	RGS32576.1		
				S							OGC	GED B	Y: LD		
				Т	EST LO	CAT	<b>ON:</b> Refer to Figure 1			D	ATE	:	21/8/22		
DR	ILL 1	YPE:	Truck N	lounted	d Drill F	Rig	EASTING:	30196	1 m	SURF	ACE	RL:			
во	REH	OLE DIAN				-	CLINATION: 90° NORTHING:	656051		DATU			AHD		
	Dril	ling and Sar	mpling				Material description and profile information				Fiel	d Test			
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity characteristics,colour,minor component		MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations		
AD/T	<u> </u>	0.40m		-		GC	**** ASPHALT FILL: Sandy Clayey GRAVEL, fine to mediu grained, pale grey, fine to medium grained angular gravel		D	D			WEARING SURFACE FILL-PAVEMENT		
		0.40m 0.50m 0.60m ES B		0. <u>5</u> - -		CI	<u>Sandy CLAY: Medium plasticity, red-brown</u> some gravel, fine grained, angular, fine to n grained sand		M A K	H / Fr					
		1.00m		1.0			1.00m Hole Terminated at 1.00 m								
		1.50m SPT 23,25,30 N=55 1.95m		- - 1.5_ - - 2.0_ - - - - -											
		3.00m SPT 30/100mm N=R 3.10m		2.5 - - 3.0 - - - - - - - - - - - - - - - - - - -											
	Wat (Da - Wat I Wat I Wat I Tr I Tr U	ter Level te and time s ter Inflow ter Outflow anges radational or ansitional stra efinitive or di trata change	hown) ( <u>f</u> ata		50mm Bulk s Enviro Acid S Bulk S S Photoi Dynan	Diame ample f onmenta Gulfate S Gample conisation	<b>s</b> ter tube sample or CBR testing I sample ioil Sample ioil Sample in detector reading (ppm) etrometer test (test depth interval shown) meter test (UCS kPa)	S F St VSt H	Very Sof Soft Firm Stiff Very Stif Hard Friable	f V La D M	25 25 50 20 20 20 20 20 20 20 20 20 20 20 20 20	5 - 50 0 - 100 00 - 200 00 - 400 400	D     Dry       M     Moist       W     Wet       Wp     Plastic Limit       WL     Liquid Limit       Density Index <15%		

				E	NGI	NEE	RING LOG - BOREHOLE			В	ORE	EHOLE	■ NOBH-CB12
		REGION/ GEOTEC		L C	LIENT		RP Infrastructure			Р	AGE	:	1 of 1
_		SOLUTIO			ROJE	CT NA	ME: Car Park B Works			J	ов і	NO:	RGS32576.1
				S	ITE LC	CATI	ON: Tamworth Hospital			L	OGG	GED B	Y: LD
				т	EST LO	CAT	ION: Refer to Figure 1			D	ATE	:	21/8/22
				Mounteo		Rig	EASTING:	301936	m s	SURF	ACE	RL:	
во		OLE DIAN		: 100 n	nm	IN	CLINATION: 90° NORTHING:	6560519	m I	DATU	1		AHD
	Drill	ling and Sar	mpling			7	Material description and profile information				Field	d Test	
METHOD	WATER	SAMPLES	RL (Not measured	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticit characteristics,colour,minor componen		MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	Encountered			-		GC	ADD307 ASPHALT FILL: Sandy Clayey GRAVEL, fine to medi grained, pale grey, fine to medium grained		D	D			WEARING SURFACE
	Not Enco	0.50m		- 0. <u>5</u>		СН	angular gravel Sandy CLAY: Medium to high plasticity, gravel trace gravel, fine grained, angular	 ey, with	M > K	St	HP	110	
		SPT 4,2,3 N=5		-							HP HP	150 140	
		<del>1.89m</del>		1. <u>0</u> -									
		U 1.30m		-			1.30m						
				1. <u>5</u>	-		Hole Terminated at 1.30 m						
				- 2.0									
				-									
				2.5	-								
				-									
				3. <u>0</u>									
				-	-								
				4.0	-								
				-	-								
				4.5									
				-									
	END:	1	<u> </u>	Notes, Sa	mples a	nd Tes	<u>is</u>	Consiste	ncy /ery Soft		<u>U(</u> <2	CS (kPa 25	a) Moisture Condition D Dry
<u>Wat</u>	Wat (Dat	ter Level te and time s	hown)	U <sub>50</sub> CBR E	Bulk s Enviro	ample f	ter tube sample or CBR testing Il sample	S S F F St S	Soft Firm Stiff		25 50 10	5 - 50 ) - 100 )0 - 200	M Moist W Wet W <sub>p</sub> Plastic Limit
		ter Inflow ter Outflow		ASS B		Sulfate S Sample	Goil Sample		′ery Stiff lard			00 - 400 400	W <sub>L</sub> Liquid Limit
<u>Stra</u>	ta Cha G tra	anges radational or ansitional stra efinitive or di	ata	Field Test PID DCP(x-y)	<u>ts</u> Photoi Dynan	onisatio	on detector reading (ppm) etrometer test (test depth interval shown)		riable V L MI	Lo D M	ery Lo oose ledium		,
		rata change	-	HP	Hand	Penetro	meter test (UCS kPa)		D VD		ense ery De	ense	Density Index 65 - 85% Density Index 85 - 100%

				E	NGI	NEE	RING LOG - BOREHOLE			В	ORE	EHOLI	E NOBH-CB13
		REGION/ GEOTECI		c	LIENT:	:	RP Infrastructure			Ρ	AGE	:	1 of 3
ź		SOLUTIO			ROJEC	CT NA	ME: Car Park B Works			J	ов і	NO:	RGS32576.1
				S	ITE LO	CATI	<b>DN:</b> Tamworth Hospital			L	OGO	GED B	SY: LD
				Т	EST LO	CAT	<b>ON:</b> Refer to Figure 1			D	ATE	:	21/8/22
DRI	ILL 1	YPE:	Truck N	Nounted	d Drill F	Rig	EASTING: 3	801950	m <b>s</b>	SURF	ACE	RL:	
BO	REH	ole dian	IETER:	100 n	nm	IN	CLINATION: 90° NORTHING: 65	60338	m <b>[</b>	DATU	M:		AHD
	Dril	ling and Sar	npling			_	Material description and profile information				Fiel	d Test	
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/par characteristics,colour,minor components	article	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	Not Encountered	0.05m 0.10m 		-		GC	ASPHALT FILL: Sandy Clayey GRAVEL, fine to medium grained, grey, fine to medium grained sand, and		D	D			WEARING SURFACE
	ncol	0.30m 0.40m		-		CI	gravel	1	Å	VSt	-		
	lot E	0.50 -		0.5			Gravelly CLAY: Medium plasticity, grey, brown	ו ו	× ×		HP	350	
	2	SPT 5,10,4		-					2		ΗP	350	
		N=14											
		0.95m		1.0									
				-									
				-									
				1.5									
				-			Gravelly CLAY: Medium plasticity, mottled	+	۹ ۲	VSt -	1		
				-			red-brown, pale brown		× ×	н			
		2.00m		2.0					-				
		SPT 10,12,13		-									
		N=25		-									
		2.45m		2.5									
				-									
				-									
				3.0									
				-									
				-									
				-									
		3.50m		3.5_									
		SPT		-							HP	350	
		12,17,22 N=39		-									
		3.95m		4.0			4.00m						
		5.50m		-		CI	Gravelly CLAY: Medium plasticity, pale grey, bu fine to medium grained, angular gravel	prown,		H / Fr			EXTREMELY WEATHERED SILTSTONE
				-									
				4.5_									
				-									
				-									
		5.00m	L_,	-									
LEG Wate	END: er		1	Notes, Sa	mples ar	nd Tes		<b>Consisten</b> VS Ve	<b>cy</b> ry Soft		<u>U(</u> <2	<b>CS (kPa</b> 25	a) <u>Moisture Condition</u> D Dry
<u> </u>	_	ter Level		U₅₀ CBR			er tube sample	S So	ft		25	5 - 50	M Moist
	(Da	te and time s	hown)	E	Enviro	nmenta	I sample S	St Sti	ff		10	) - 100 )0 - 200	W <sub>p</sub> Plastic Limit
		ter Inflow ter Outflow	ļ	ASS B	Acid S Bulk S		•	/St Ve H Ha	ry Stiff Ird			)0 - 400 400	W <sub>L</sub> Liquid Limit
Stra		anges					F	Fb Fri	able				Density index, s150/
		radational or ansitional stra		Field Test PID		onisatio	n detector reading (ppm)	<u>ensity</u>	V L		ery Lo bose	oose	Density Index <15% Density Index 15 - 35%
	_ D	efinitive or di		DCP(x-y) HP	Dynan	nic pen	etrometer test (test depth interval shown) meter test (UCS kPa)		ME D		ediun ense	n Dense	
	st	trata change				Shoul			VD		ense ery De	ense	Density Index 85 - 85% Density Index 85 - 100%

				E	NGI	NEE	RING LOG - BOREHOLE				B	ORE	HOLE	NOBH-CB13
		REGION/ GEOTEC	HNICA	L	LIENT		RP Infrastructure				P	AGE	:	2 of 3
_		SOLUTIO	INS		ROJE							OBI		RGS32576.1
					ITE LC								GED BY	
				Т	EST LO	OCAT	<b>ON:</b> Refer to Figure 1					ATE	:	21/8/22
		YPE: OLE DIAN		Mountee : 100 n		-		<b>FING:</b> 3 THING: 65	30195 56033		SURF. DATU		RL:	AHD
	Drill	ling and Sar	npling				Material description and profile infor	mation				Field	d Test	
METHOD	WATER	SAMPLES	RL (Not measured	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type characteristics,colour,minor cc		article	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	Not Encountered	SPT 25/50mm N=R 5.05m		5.5 <u>-</u>   6.0 <u>-</u> 		CI	Gravelly CLAY: Medium plasticity fine to medium grained, angular gr			M < W	H / Fr			
				6.5_   7.0_             			6.40m Continued as Cored Drill Hole							
LEG	END:			8.5 		nd Test	s		Consist	ency			CS (kPa)	Moisture Condition
Wate							_		VS	Very Sof	t	<2	25	D Dry
Ŧ		ter Level	howe	U₅₀ CBR	Bulk s	ample f	er tube sample or CBR testing		F	Soft Firm		50	5 - 50 ) - 100	M Moist W Wet
-	•	te and time s ter Inflow	nown)	E ASS			l sample oil Sample			Stiff Very Stif	·		)0 - 200 )0 - 400	W <sub>p</sub> Plastic Limit W <sub>L</sub> Liquid Limit
		ter Outflow		В		Sample			Н	, Hard Friable			400	
	Gi tra De	anges radational or ansitional stra efinitive or di rata change	ata	Field Test PID DCP(x-y) HP	Photo Dynar	nic pene	n detector reading (ppm) etrometer test (test depth interval shown) meter test (UCS kPa)		Density	V L MI D VE	La D M D	ery Lo bose lediun ense ery De	n Dense	Density Index <15% Density Index 15 - 35% Density Index 35 - 65% Density Index 65 - 85% Density Index 85 - 100%

					ENGINEERING LO	DG - CORED BO	REH	OLE			BORE		H-CB13	
	4	REGIO				nfrastructure		-			PAGE		Page 3 of	3
		SOLUT	ECHNIC FIONS	AL	PROJECT NAME: Car	Park B Works					JOB N	Ю:	RGS32576.1	
					SITE LOCATION: Tam	worth Hospital						ED BY:	LD	
					TEST LOCATION: Refe						DATE:		21/8/22	
		TYPE: OLE DI	Ir AMETE		ounted Drill Rig 00 mm INCLINATIO	<b>l</b> : 90°	EAST NORT		301950 6560338		DAT	FACE RL: UM:	AHD	
	Drillina	and Sam	nplina	-	Material description	and profile information	-	_	Testing			Rock Mass	s Defects	
						•	U	0-			b			
8	К		DEPTH	GRAPHIC LOG	Material Descripti	on: Rock type,	WEATHERING	ESTIMATED STRENGTH		%	Defect Spacing mm	Defect	Description: Type	<b>,</b>
METHOD	WATER	RL Not	(m)	LOC	particle characte minor compone	ristics, colour,	ATHE	TIM/	I <sub>s(50)</sub> D/A	RQD %	ect S	rouç	nation, planarity, phness, coating,	
2	-	measured		0		,	WE	ST			Defe		thickness	
			_											
			-											
			-											
			5.5_											
			-											
			-											
			6.0											
			-											
			-											
-			6.5	× × × × × ×	START CORING AT 6.40m SILTSTONE: Dark grey, indis	stinctly bedded	MW	L						
			-			,				0				
			-	$\times$ $\times$ $\times$ $\times$ $\times$ $\times$ $\times$							-			
NMLC			-	$\hat{x}$ $\hat{x}$ $\hat{x}$							20	Highly fra	ctured core,	
Ξ			7.0_	$\times$ $\times$ $\times$ $\times$ $\times$ $\times$ $\times$						0			jointed with iron nd clay seams	
8-00			-	× × × × × ×						U			,	
202 0.00			-	**************************************										
1.2 04 (			7.5		Hole Terminated at 7.40 m									
			-											
2202 0			-											
8.7			8.0											
			-											
- 60			-											
			8.5											
a naige			-											
0.00.00.			-											
110			9.0											
10/202			-											
			-											
-iawii			9.5											
			-											
2000			-											
			-											
	GEND:	1	1	Beddi		Weathering			ength		<u>l</u> s(50		ect Type	
W		Wash			ly Bedded 20-200mm	EW         Extremely Wea           HW         Highly Weather	ed		Low	v		- 0.3 PT	Joint Parting	
RF		Rock F Claw o	Roller r Blad Bit		m Bedded 200-600mm y Bedded 600-2000mm	MW Moderately We SW Slightly Weather		M H	Medium High		0.3 1 -	3 SM	Seam Shear Zone	
NN	/LC	NMLC Q Wirelin	Core		Fhickly Bedded 2000mm	FR Fresh			Very Hig		3 -	10 CS		n
	κ,ι 102,1 <sup>-</sup> Υ		Conny		· · · · · · · · · · · · · · · · · · ·					iy Higi				
					ee of Fracturing nented <20mm			Rou VR	i <u>ghness</u> Very Ro	ugh	<u>Coatii</u> CN	ng Clean	<u>Planarity</u> PL Plana	ar
0.3 LB.					Fractured 20mm to 40mm			RO SO	Rough Smooth	-	SN VN	Stained Veneer(<1m	CU Curve	ed
0.7 DV					ly Fractured 200mm to 200mm	n		SU	Smooth Slickens	ided	CO	Coating(1-5		

				E	NGI	NEE	RING LOG - BOREHOLE			B	OR	EHOLE	■ NOBH-CB14
		REGION/ GEOTEC		LC	LIENT	:	RP Infrastructure			P	AGE	:	1 of 1
_		SOLUTIO			ROJE	CT NA	ME: Car Park B Works			J	ОΒ	NO:	RGS32576.1
				S	ITE LC	CATI	<b>DN:</b> Tamworth Hospital			L	OGO	GED B	Y: LD
				т	EST LO	DCAT	<b>ON:</b> Refer to Figure 1			D	ATE	:	21/8/22
				Mounted		-	EASTING:	301965		SURF		RL:	
во		OLE DIAN		: 100 n	nm 	IN	CLINATION: 90° NORTHING: Material description and profile information	6560528	sm I	DATU		d Test	AHD
						z							
METHOD	WATER	SAMPLES	RL (Not measured	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity characteristics,colour,minor component		MOISTURE	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	Not Encountered	0.10m ES		-	××_	∿	ASPHALT , FILL: CLAY, medium plasticity, brown, with	some /	<pre>~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~</pre>	Н			FILL
	count			-	<u> </u>	CI	gravel, fine grained, angular		ž	H / Fr			COLLUVIUM
	ot En	0.50m		0.5		-	grey	brown,					
	ž		]	-	<u> </u>								
		SPT 12,13,15		-	×								
		N=28			×								
		0.95m	]	1.0	×								
				-	<u></u>								
				-	<u></u>	1							
				1.5	<u>  ×</u>	-							
				-	<u> </u>								
				-									
				2.0	×								
				_	×								
					<u> </u>								
				-	<u> ×</u>								
		2.60m		2.5	<u> </u>								
				-									
	9,	SPT 18,25/100m	m		×								
		N=R		3.0	x		3.00m						
		3.00m		-			Hole Terminated at 3.00 m						
				-									
				3.5									
				-									
				-									
					1								
				4.0	+								
					1								
				-	-								
				4.5	1								
					-								
				-	1								
				-									
	END:	1		Notes, Sa	mples a	nd Test	<u>§</u>	Consiste		I	_	CS (kPa	
Wate	_	er Level		U <sub>50</sub>	50mm	Diame	er tube sample	S S	/ery Soft Soft	•		25 5 - 50	D Dry M Moist
*		ter Level te and time s	hown)	CBR E			or CBR testing I sample		<sup>-</sup> irm Stiff			) - 100 )0 - 200	W Wet W <sub>p</sub> Plastic Limit
•		er Inflow		ASS	Acid S	Sulfate S	oil Sample	VSt V	/ery Stiff	:	20	00 - 400	
		ter Outflow anges		В	Bulk S	Sample			lard riable		>4	400	
	G	radational or		Field Test PID	_	ionisativ	n detector reading (ppm)	Density	V L		ery Lo bose	oose	Density Index <15% Density Index 15 - 35%
		ansitional stra efinitive or di		DCP(x-y)	Dynar	nic pene	trometer test (test depth interval shown)		ME	D M	ediur	n Dense	Density Index 35 - 65%
		rata change		HP	Hand	Penetro	meter test (UCS kPa)		D VD		ense ery D	ense	Density Index 65 - 85% Density Index 85 - 100%

REGIONAL GEOTECHNICAL SOLUTIONS       CLIENT:       RP Infrastructure       PAGE:         PROJECT NAME:       Car Park B Works       JOB N         SITE LOCATION:       Tamworth Hospital       LOGG         TEST LOCATION:       Refer to Figure 1       DATE:         DRILL TYPE:       Truck Mounted Drill Rig       EASTING:       301975 m	IO: RGS32576 ED BY: LD	
SOLUTIONS       PROJECT NAME:       Car Park B Works       JOB N         SITE LOCATION:       Tamworth Hospital       LOGG         TEST LOCATION:       Refer to Figure 1       DATE:	ED BY: LD	
TEST LOCATION: Refer to Figure 1 DATE:		6.1
DRILL TYPE: Truck Mounted Drill Rig EASTING: 301975 m SURFACE	21/8/22	
BOREHOLE DIAMETER: 100 mm INCLINATION: 90° NORTHING: 6560525 m DATUM:	AHD	
	I Test	
O       H       SAMPLES       RL (Not measured)       DEPTH (m)       DEPTH (m)       NO       NO<	Structure and additi So Observations	ional
L         D         0.10m         0.03sr         ASPHALT 30mm           V         0         0.20m          CH         0.03sr         ASPHALT 30mm            CH         0.03sr         ASPHALT 80mm         \$	WEARING SURFACE Two layers of asphalt c	
Image: Characterization of the second sec	COLLÚVIUM	
E     0.10m     0.20m     CH     0.00mr     ASPHALT 30mm       B     0.20m     CH     CH     ASPHALT 80mm       B     0.00mr     CLAY: Medium to high plasticity, pale brown, with gravel, fine to medium grained, angular     St -		
3,7            4,5,7            N=12		
0.95m 1.0 - Hole Terminated at 1.00 m		
2.5		
3.0		
3.5		
4.0		
4.5		
LEGEND:       Notes. Samples and Tests       Consistency       UC         4.0       -       -       -         4.5       -       -       -         Water       Um       50mm Diameter tube sample       S       Soft         Water C       Um       50mm Diameter tube sample       S       Soft       -         Water C       Um       50mm Diameter tube sample       S       Soft       -         Water C       Um       50mm Diameter tube sample       S       Soft       -         Water C       Um       50mm Diameter tube sample       S       Soft       -       -         Water C       Um       50mm Diameter tube sample       S       Soft       -       -         Water C       Um       50mm Diameter tube sample       S       Sitel Call table Soft       -       -         -       Gradiational or transitional strait       E       Environmental sample       S       Sitel Table       - </th <th></th> <th></th>		
LEGEND:         Notes, Samples and Tests         Consistency         UC           Water         VS         Very Soft         <28		
Water LevelU 5050mm Diameter tube sampleSSoft25CBRBulk sample for CBR testingFFirm50	- 50 M Moist - 100 W Wet	
(Date and time shown)     E     Environmental sample     St     Stiff     100       ▶     Water Inflow     ASS     Acid Sulfate Soil Sample     VSt     Very Stiff     200	0 - 200 W <sub>p</sub> Plastic Limit 0 - 400 W <sub>1</sub> Liquid Limit	
→     Water Outflow     B     Bulk Sample     H     Hard     >40       →     Water Outflow     B     Bulk Sample     H     Hard     >40		
Strata Changes         Fb         Friable           Gradational or         Field Tests         Density         V         Very Loc	•	
Image: transitional strata         PID         Photoionisation detector reading (ppm)         L         Loose           Definitive or distict         DCP(x-y)         Dynamic penetrometer test (test depth interval shown)         MD         Medium	Density Index 15 - 35 Dense Density Index 35 - 65	
Beinneve of disult         HP         Hand Penetrometer test (UCS kPa)         D         Dense           strata change         HP         Hand Penetrometer test (UCS kPa)         VD         Very Dei	Density Index 65 - 85	5%

					ENGI	NEE	RING LOG - BOREHOLE			В	ORE	HOLE	E NOBH-CB16
		REGION/ GEOTEC		AL	CLIENT	:	RP Infrastructure			Р	AGE	:	1 of 3
Ĺ		SOLUTIO			PROJE	CT N/	ME: Car Park B Works			J	ов і	NO:	RGS32576.1
					SITE LO	OCATI	ON: Tamworth Hospital			L	OGG	GED B	Y: LD
					TEST L	OCAT	ION: Refer to Figure 1			D	ATE	•	21/8/22
DRI	LL T	YPE:	Truck	Mounte	ed Drill	Rig	EASTING:	301981	m s	SURF	ACE	RL:	
BO				<b>R</b> : 100	mm	IN	CLINATION: 90° NORTHING: 6	6560551	m <b>I</b>	DATU	-		AHD
	Drill	ing and Sar	mpling			7	Material description and profile information				Field	d Test	
METHOD	WATER	SAMPLES	RL (Not measure	DEPTI (m)	E GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/p characteristics,colour,minor components		MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	Not Encountered	0.05m			-	GC	••••• ASPHALT FILL: Sandy Clayey GRAVEL, fine to medium	/					WEARING SURFACE Two layers of asphalt coating
	sount					<u> </u>	<sub>0.30m</sub> grained, pale brown						FILL-PAVEMENT
	t Enc	0.50m		0.5	<u></u>	СН	CLAY: Medium to high plasticity, grey-brown, some gravel, fine grained, angular	, with	× ×	St - VSt			COLLUVIUM
	No	ES		0.	<u></u>	1			Σ		HP HP	350 350	
		SPT 4,6,12											
		N=18			1	-							
		1.00m 0:95m		1.(	라								
					1	-							
					1	1							
				1.	, E	1	1.50m						
				1.5	<u></u>	CI	Sandy CLAY: Medium plasticity, mottled red-			H / Fr			
						-	brown, grey, fine to medium grained sand, wi gravel, fine to medium grained, angular	ith some					
						1							
		2.00m	4	2.0	<u></u>	-					HP	>600	
		SPT			+	1							
	9,	17,25/100m N=R	m		<u>†</u>	-							
			-		1	1							
		2.40m		2.	°								
						-							
				3.0	<u></u>	-	3.00m						
					-		Continued as Cored Drill Hole						
					-								
					]								
				3.	5								
					-								
				4.0	5								
					-								
					1								
				4.	5								
					-								
					1								
					-								
LEG	END:	I		Notes, S	amples a	nd Tes	<u>s</u>	Consister		1		CS (kPa	
Wate	_			U <sub>50</sub>	50mm	n Diame	ter tube sample	VS Ve S Se	ery Soft oft		<2 25	25 5 - 50	D Dry M Moist
-		er Level te and time s	shown)	CBR	Bulk	sample	or CBR testing	F Fi	rm		50	) - 100	W Wet
►	Wat	er Inflow		E ASS			al sample Soil Sample	St St VSt Ve	tiff ery Stiff			10 - 200 10 - 400	
<b>_</b> ◀		er Outflow		В		Sample		H H	ard			100	
<u>Strat</u>		<mark>anges</mark> radational or		Field Te	<u>sts</u>		ŀ	Fb Fr Density	iable V	V	ery Lo	ose	Density Index <15%
	 tra	ansitional stra	ata	PID DCP(x-y			on detector reading (ppm) etrometer test (test depth interval shown)		L ME		oose ledium	n Dense	Density Index 15 - 35% Density Index 35 - 65%
		efinitive or di rata change	stict	DCP(x-y HP			meter test (UCS kPa)		D	D	ense		Density Index 65 - 85%
	30	.a.a onanye							VD	V	ery De	ense	Density Index 85 - 100%

					ENGINEERIN	G LOG	- CC	ORED BO	REHO	OLE			BORE	HOLE NO	BH-CE	316
		REGIO	NAL Echnic	• • •	CLIENT:	RP Infra							PAGE			e 2 of 3
		SOLUT		AL	PROJECT NAME:	Car Parl	k B W	orks					JOB N	0:	-	32576.1
					SITE LOCATION:	Tamwor	th Hos	spital						ED BY:	LD	
					TEST LOCATION:								DATE:		21/8/	22
							5		<b>E</b> 4 0 T		004004					
		'YPE: Ole di			ounted Drill Rig 0 mm INCLIN	ATION: 9	90°		EAST		301981 6560551		DAT	FACE RL UM:	L: AHD	
	rilling a	and Sam	pling		Material des	cription and	l profile	information			Testing			Rock M	ass Defects	
									Q	0.7			Вu			
METHOD	WATER	RL Not	DEPTH (m)	GRAPHIC LOG	particle ch	escription: R aracteristics	s, colou	r,	WEATHERING	ESTIMATED STRENGTH	I <sub>s(50)</sub> D/A	RQD %	Defect Spacing mm	ir	ect Descripti nclination, pla oughness, c	anarity,
Σ	>	measured		ö		nponents, s	Structure	3	WEA	STI			Defe		thicknes	S
			-													
			0.5													
			-													
			-													
			1.0													
			1. <u>5</u> -													
			2.0													
			-													
			2.5													
			-													
			3.0		START CORING AT 3	.00m										
					COLLUVIAL SOIL: Gr red-brown, pale brown	avelly CLA								-		
			-		angular		uum yi	allieu gravei,								
			3.5													
			-									100				
U.			4.0													
NMLC			4.0													
			-													
h			-													
			4.5													
			-									100				
			-									100				
	GEND:		-	Beddi	ng	147	/eatherir	20		04	ngth			,	Defect Type	
Met	hod	10	Porc	Lamin	ated <20mm	E/	W	Extremely Weat		VL	Very Lov	N	<u> <sub>s(50</sub></u> <0.	1	JT Joint	
WB RR		Wash I Rock F	Roller	Mediu	y Bedded 20-200mm m Bedded 200-600mm		W	Highly Weathere Moderately Wea	thered	L M	Low Medium		0.3	-1 \$	PT Partir SM Sean	า
CB NM		Claw o NMLC	r Blad Bit Core		y Bedded 600-2000m Thickly Bedded 2000mm	m S\ FF		Slightly Weather Fresh	ed	H VH	High Very Hig	h	1 - 3 -			r Zone hed Seam
		Q Wirelin		Massi						EH	, ,				0.40	
- D 1					e of Fracturing						ghness		Coatin			narity
					Fractured 20mm to 40					VR RO	Very Ro Rough	ugh	CN SN	Clean Stained	PL CU	Planar Curved
				Fractu Slightl	red 40mm to 20 y Fractured 200mm to 20			SO SL	Smooth Slickens	ided	VN CO	Veneer(< Coating(	<1mm) ST 1-5mm) IR	Stepped Irregular		

Γ					ENGINEERIN	G LOG - C	ORED BO	REHO	DLE			BORE		H-CB16	
		REGIO	NAL Echnic		CLIENT:	RP Infrastru	icture					PAGE	:	Page 3 of 3	
		SOLU		AL	PROJECT NAME:	Car Park B	Works					JOB N	<b>O</b> :	RGS32576.1	
					SITE LOCATION:	Tamworth H	lospital					LOGG	ED BY:	LD	
					TEST LOCATION:	Refer to Fig	ure 1					DATE:		21/8/22	
╞		TYPE:	т.			j		EAST		301981			FACE RL:		
		HOLE DI			ounted Drill Rig 0 mm INCLIN	ATION: 90°				6560551		DAT		AHD	
	Drilling	g and San	npling		Material des	cription and prof	file information			Testing			Rock Mass	Defects	
METHOD	WATER	RL Not measured	DEPTH (m)	GRAPHIC LOG	particle ch minor cor	escription: Rock aracteristics, co nponents, struct	lour, ture	WEATHERING	ESTIMATED STRENGTH	I <sub>s(50)</sub> D/A	RQD %	Defect Spacing mm	inclir	Description: Type, nation, planarity, Ihness, coating, thickness	
			- - 5. <u>5</u> - -		<b>COLLUVIAL SOIL:</b> Gr. red-brown, pale brown, angular ( <i>continued</i> )						100				
$\vdash$			6.0	-	Hole Terminated at 5.9	0 m									
			- - 6. <u>5</u> - -												
			7.0												
			- 7. <u>5</u> -												
			8.0												
			8. <u>5</u> -												
			9.0												
			9. <u>5</u> - - -												
	EGENE Method VB RR B IMLC IQ,HQ,I	Wash Rock F	Roller r Blad Bit Core	Mediu Thickl	ated <20mm y Bedded 20-200mm m Bedded 200-600mm y Bedded 600-2000m 'hickly Bedded 2000mm	m SW FR	ering Extremely Weat Highly Weatherd Moderately Wea Slightly Weather Fresh	ed athered	Stre VL L M H VH EH	, ,	lh	0.3 1 - 3 -	1 JT - 0.3 PT - 1 SM 3 SZ 10 CS	ect Type Joint Parting Seam Shear Zone Crushed Seam	
				Fragm Highly Fractu	Fractured 20mm to 40	0mm			Rou VR RO SO SL	ghness Very Ro Rough Smooth Slickens	-	Coatin CN SN VN CO	19 Clean Stained Veneer(<1m Coating(1-5r	,	b

				E	NGI	NEE	RING LOG - BOREHOLE			В	ORE	EHOLE	NOBH-CB17
		REGION/ GEOTEC		LC	LIENT	:	RP Infrastructure			P	AGE	:	1 of 1
Ź		SOLUTIO			ROJE	CT NA	ME: Car Park B Works			J	ОΒΙ	NO:	RGS32576.1
				S	ITE LC	CATI	ON: Tamworth Hospital			L	OGO	GED B	Y: LD
				т	EST L	OCAT	ION: Refer to Figure 1			D	ATE		21/8/22
				Mounte		-	EASTING:	30198		SURF		RL:	
BO		OLE DIAN		: 100 n	nm	IN	CLINATION: 90° NORTHING: Material description and profile information	656051	5 m	DATU	1	d Test	AHD
	Dim					z							
METHOD	WATER	SAMPLES	RL (Not measured	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticit characteristics,colour,minor componen		MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	Not Encountered			-		GC	ASPHALT FILL: Sandy Clayey GRAVEL, fine to coars	se					WEARING SURFACE FILL-PAVEMENT
	ncour	0.40m		-			grained, pale grey, fine to medium grained <u>0.35m</u> angular gravel		_				
	lot E	0.50m		0.5	<u> ×</u>	CI	Silty CLAY: Medium plasticity, mottled gre with some gravel, fine grained, angular	y, brown,	× K P	St	HP	220	
	2	ES SPT		-	×  ×				Σ		HP	250	
		4,4,6 N=10		-									
				1.0	x		0.95m				-		
		0.95m		-	]		Hole Terminated at 0.95 m						
					1								
				15	-								
				1. <u>5</u>	1								
				-	-								
				-	1								
				2.0	-								
				-	1								
				-									
				2.5	1								
				-	]								
				-	1								
					]								
				3. <u>0</u>	+								
				-	1								
				-	-								
				3.5	1								
					+								
				-	1								
				4.0	-								
				-+.0	1								
				-	-								
				-	1								
				4.5	+								
				-	1								
				-	ł								
	_			-									
	END:			Notes, Sa	mples a	nd Tes	ts	Consister	ency Very Sof		<u>U</u> <2	<b>CS (kPa</b> 25	Moisture Condition     D Dry
Wate		er Level					ter tube sample	S	Soft	-	25	5 - 50	M Moist
	(Dat	te and time s	hown)	CBR E			or CBR testing al sample		Firm Stiff			) - 100 )0 - 200	W Wet W <sub>p</sub> Plastic Limit
		er Inflow er Outflow		ASS B	Acid S		Soil Sample	VSt	Very Stif Hard	F	20	00 - 400 400	
Stra		anges				anple		Fb	Friable				
		radational or ansitional stra		Field Test PID		ionisati	on detector reading (ppm)	<u>Density</u>	V L		ery Lo bose	oose	Density Index <15% Density Index 15 - 35%
	_ D	efinitive or di		DCP(x-y) HP	Dynar	nic pen	etrometer test (test depth interval shown) ometer test (UCS kPa)		_ MI D	D M		n Dense	e Density Index 35 - 65%
	st	rata change		TH.	i idilU	, cnetro			D VE		ense ery D	ense	Density Index 65 - 85% Density Index 85 - 100%

				E	NGI	NEE	RING LOG - BOREHOLE			В	ORE	EHOLE	■ NOBH-CB18
		REGION/ GEOTEC		L C	LIENT	:	RP Infrastructure			Р	AGE	:	1 of 1
2		SOLUTIO			ROJE	CT NA	ME: Car Park B Works			J	ові	NO:	RGS32576.1
				S	ITE LC	CATI	ON: Tamworth Hospital			L	OGO	GED B	Y: LD
				т	EST LO	OCAT	ION: Refer to Figure 1			D	ATE	:	21/8/22
DR	ILL 1	TYPE:	Truck	Mounted	d Drill I	Rig	EASTING:		5	SURF	ACE	RL:	
во	REH		IETER:	100 n	nm	IN	CLINATION: 90° NORTHING:		[	DATU	M:		AHD
	Dril	lling and Sar	npling				Material description and profile information				Fiel	d Test	
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity characteristics,colour,minor component		MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	Not Encountered	0.05m 0.10m 		-		GC	ASPHALT FILL: Sandy Clayey GRAVEL, fine to mediu grained, pale grey, fine to medium grained s angular gravel		D	D			WEARING SURFACE FILL-PAVEMENT
	Not En	0.50m SPT 18,18,18 N=36		0. <u>5</u> - -		CH	0.40m Gravelly CLAY: Medium to high plasticity, r red-brown, pale brown, gravel, fine grained,	nottled angular	M < &	VSt			
		0.95m		1.0			1.00m Hole Terminated at 1.00 m						
LEG Watu Stra													
LEG <u>Wat</u> <u>Vat</u> <u>Stra</u>	- Wa (Da - Wa I Wa I Wa I — G tr □ D	ter Level te and time s ter Inflow ter Outflow <b>anges</b> Gradational or ansitional stra befinitive or di trata change	hown)	Notes, Sa U <sub>50</sub> CBR E ASS B Field Test PID DCP(x-y) HP	50mm Bulk s Enviro Acid S Bulk S Bulk S Photo Dynar	n Diame ample f onmenta Sulfate S Sample ionisationis pen	ter tube sample or CBR testing al sample Soil Sample on detector reading (ppm) etrometer test (test depth interval shown) imeter test (UCS kPa)	S S F F St S VSt V H H	L iery Soft oft tiff ery Stiff ard riable V L ME D VD	Vi La D M	25 25 50 20 20 20 20 20 20 20 20 20 20 20 20 20	5 - 50 ) - 100 )0 - 200 )0 - 400 400 pose n Dense	D Dry M Moist W Wet W <sub>p</sub> Plastic Limit U <sub>L</sub> Liquid Limit Density Index <15% Density Index 15 - 35%



## Appendix C

### Laboratory Test Result Sheets

Regional Geotechnical Solutions RGS32576.1-AO 5 September 2022



Client: **RP** Infrastructure Job No. RG\$32567.1-AO1 Tamworth Health Service Redevelopment: Carpark B Works Project: Location: Dean Street, Tamworth

				TOTAL RECOVER	ABLE HYDRO	CARBONS		PA	АН			Pestic	cides				HEAVY	METALS			
Location	DEPTH (m)	MATERIAL	C6-C10	C10-C16	C16-C34	C34-C40	TOTAL 10-40	Total	b-a-p	BTEX	PCB	ос	OP	As	Cd	Cr#	Cu	Pb	Ni	Zn	Hg
BH-CB1	0.4 - 0.5	Residual Soil	<10	<10	<100	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	<5	<1	7	15	<5	5	28	<0.1
BH-CB2	0.04 - 0.1	Pavement Gravel	<10	<10	<100	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	<5	<]	3	7	<5	3	9	<0.1
BH-CB3	0.5 - 0.6	Colluvial Soil	<10	<10	<100	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	9	<1	13	25	6	10	60	<0.1
BH-CB4	0.5 - 0.6	Residual Soil	<10	<10	<100	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	<5	<1	14	27	8	10	53	<0.1
BH-CB5	0.4 - 0.5	Residual Soil	<10	<10	<100	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	<5	<1	12	22	7	9	42	<0.1
BH-CB6	0.04 - 0.1	Pavement Gravel	<10	<10	<100	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	<5	<1	10	13	<5	10	13	<0.1
BH-CB7	0.5 - 0.6	Residual Soil	<10	<10	<100	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	5	<1	11	20	7	7	40	<0.1
BH-CB8	0.5 - 0.6	Residual Soil	<10	<10	<100	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	<5	<1	10	19	8	9	42	<0.1
BH-CB9	0.45 - 0.5	Residual Soil	<10	<10	<100	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	7	<1	13	24	33	9	53	<0.1
BH-CB10	0.3 - 0.4	Residual Soil	<10	<10	<100	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	5	<1	16	30	9	13	55	<0.1
BH-CB11	0.5 - 0.6	Residual Soil	<10	<10	<100	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	6	<1	17	22	9	9	44	<0.1
BH-CB12	0.05 - 0.1	Pavement Gravel	<10	<10	<100	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	<5	<1	4	7	<5	4	11	<0.1
BH-CB13	0.3 - 0.4	Colluvial Soil	<10	<10	<100	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	<5	<1	8	12	5	5	24	<0.1
BH-CB14	0.05 - 0.1	Pavement Gravel	<10	<10	<100	130	130	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	<5	<1	8	14	11	7	42	<0.1
BH-CB15	0.1 - 0.2	Residual Soil	<10	<10	<100	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	<5	<5         <1         11         21         6           <5			6	8	44	<0.1
BH-CB16	0.05 - 0.1	Pavement Gravel	<10	<10	150	240	390	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	<5				<5	2	7	<0.1
BH-CB17	0.4 - 0.5	Residual Soil	<10	<10	<100	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	<5	<5 <1 8 15 6		6	6	30	<0.1	
BH-CB18	0.05 - 0.1	Pavement Gravel	<10	<10	<100	130	130	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	<5	<1	3	8	<5	3	10	<0.1
CB-D2 (duplicate of BH-CB13 0.3 – 0.4m)	0.3 - 0.4	Colluvial Soil	<10	<10	<50	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	<5	<1	12	18	9	8	38	<0.1
CB-D3 (duplicate of 	0.4 - 0.5	Residual Soil	<10	<10	<50	<100	<50	<0.5	<0.5	<0.2	<0.1	<0.2	<0.2	5	<1	12	21	8	9	45	<0.1
CB-D2 RPD (%)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	40.0	57.1	46.2	45.2	0.0
CB-D3 RPD (%)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	33.3	28.6	40.0	40	0.0
Health Based Soil inve	stigation Le	vel (HIL)*:						400	4	NL	1	10	10	500	150	500#	30000	1200	1200	60000	120
Health Screening Leve	əl (HSL)**:		F1=70 (1-<2m)	F2=110 (0-<1m) F2=240 (1-<2m) F2=440 (2-<4m)																	
Ecological Investigation	on Level (Ell	L)***:	800	1000	3500	10000								100 190 190 1100			1100	170	400		
Ecological Screening	Level (ESL)*	***:	215	170	1700	3300				50				Coarse grained soil in mg/kg				•			
			215	170	2500	6600				65				Fine grained soil in mg/kg							
Management Limits			700	1000	2500	10000								Coarse grained soil in mg/kg Fine grained soil in mg/kg							
			800	1000	3500	10000									Fine gr	ained soil in					

NOTES:

Denotes concentration exceeds health based guideline for Residential B land use

Denotes concentration exceeds ecological guideline for Residential B land use

Denotes concentration exceeds management Limits for Residential or Recreational land use

Denotes concentration exceeds health and ecological based guideline for Residential B land use

Health Based Investigation Levels for Reseidential B (NEPM 2013)
 \*\*Health Screening Level (F1 & F2) for Residential B land use and coarse grained soil (sand) (NEPM 2013)
 \*\* Ecological Investigation Level - for Residential B land use
 \*\*\* Ecological Screening Level for Residential B land use and fine grained soil

#Chromium VI

## Speciation testing confirmed only Chromium III present

NL No Limit available

LOR Limit of Reporting



Client: Job No. Project: Location: RP Infrastructure RGS32567.1-AO1 Tamworth Health Dean Street, Tam

le e stien			ASBESTOS
Location	DEPTH (m)	MATERIAL	Present
BH-CB1	0.5 - 0.6	Residual Soil	No
BH-CB2	0.5 - 0.6	Residual Soil	No
BH-CB3	0.5 - 0.6	Colluvial Soil	No
BH-CB4	0.04 - 0.1	Pavement Gravel	No
BH-CB5	0.5 - 0.95	Residual Soil	No
BH-CB6	0.5 - 0.6	Residual Soil	No
BH-CB7	0.06 - 0.1	Pavement Gravel	No
BH-CB8	0.5 - 0.6	Residual Soil	No
BH-CB9	0.5 - 0.6	Residual Soil	No
BH-CB10	0.3 - 0.4	Residual Soil	No
BH-CB11	0.5 - 0.6	Residual Soil	No
BH-CB12	0.5 - 0.6	Residual Soil	No
BH-CB13	0.3 - 0.4	Colluvial Soil	No
BH-CB14	0.5 - 0.6	Residual Soil	No
BH-CB15	0.1 - 0.2	Residual Soil	No
BH-CB16	0.05 - 0.1	Pavement Gravel	No
BH-CB17	0.5 - 0.6	Residual Soil	No
BH-CB18	0.5 - 0.6	Residual Soil	No



#### **CERTIFICATE OF ANALYSIS**

Work Order	ES2229960	Page	: 1 of 23	
Client	: REGIONAL GEOTECHNICAL SOLUTION	Laboratory	: Environmental Division Sy	/dney
Contact	: MR ADAM HOLZHAUSER	Contact	: Customer Services ES	-
Address	: Unit 14 25-27 Hurley Drive COFFS HARBOUR NSW, AUSTRALIA 2450	Address	: 277-289 Woodpark Road	Smithfield NSW Australia 2164
Telephone	: +61 02 6553 5641	Telephone	: +61-2-8784 8555	
Project	: RGS32576.1 PROPOSED CARPARK B Upgrades	Date Samples Received	: 22-Aug-2022 16:27	WIIII.
Order number	:	Date Analysis Commenced	: 24-Aug-2022	
C-O-C number	:	Issue Date	: 29-Aug-2022 15:02	
Sampler	:		0	Hac-MRA NATA
Site	: Tamworth Hospital			
Quote number	: EN/222			Accreditation No. 825
No. of samples received	: 38			Accredited for compliance with
No. of samples analysed	: 38			ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

#### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Jake Spooner	Laboratory Technician	Newcastle - Asbestos, Mayfield West, NSW



#### **General Comments**

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key: CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society. LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No\*' No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB1 0.4-0.5	BH-CB2 0.04-0.1	BH-CB3 0.5-0.6	BH-CB4 0.5-0.6	BH-CB5 0.4-0.5
· · ·		Samplii	ng date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-001	ES2229960-002	ES2229960-003	ES2229960-004	ES2229960-005
			-	Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ <sup>/</sup>	105-110°C)							
Moisture Content		1.0	%	10.1	1.9	15.5	14.6	7.6
EG005(ED093)T: Total Metals by ICI	P-AES							
Arsenic	7440-38-2	5	mg/kg	<5	<5	9	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	7	3	13	14	12
Copper	7440-50-8	5	mg/kg	15	7	25	27	22
Lead	7439-92-1	5	mg/kg	<5	<5	6	8	7
Nickel	7440-02-0	2	mg/kg	5	3	10	10	9
Zinc	7440-66-6	5	mg/kg	28	9	60	53	42
EG035T: Total Recoverable Mercur								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (			00					
Total Polychlorinated biphenyls		0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
		0.1			••••			0
EP068A: Organochlorine Pesticides alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
Total Chlordane (sum)	1024-07-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
`Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB1 0.4-0.5	BH-CB2 0.04-0.1	BH-CB3 0.5-0.6	BH-CB4 0.5-0.6	BH-CB5 0.4-0.5
		Samplii	ng date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-001	ES2229960-002	ES2229960-003	ES2229960-004	ES2229960-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pestici	des (OC) - Continued							
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
<sup>^</sup> Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pe								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Arom	atic Hydrocarbons							
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

# Page : 5 of 23 Work Order : ES2229960 Client : REGIONAL GEOTECHNICAL SOLUTION Project : RGS32576.1 PROPOSED CARPARK B Upgrades



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB1 0.4-0.5	BH-CB2 0.04-0.1	BH-CB3 0.5-0.6	BH-CB4 0.5-0.6	BH-CB5 0.4-0.5
		Sampli	ng date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-001	ES2229960-002	ES2229960-003	ES2229960-004	ES2229960-005
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic H	ydrocarbons - Cont	inued						
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbor	1S	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)		0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)		0.5	mg/kg	0.6	0.6	0.6	0.6	0.6
∖ Benzo(a)pyrene TEQ (LOR)		0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocar	bons							
C6 - C9 Fraction		10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction		50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction		100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction		100	mg/kg	<100	<100	<100	<100	<100
C10 - C36 Fraction (sum)		50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydroc	arbons - NEPM 201	3 Fractio	ns					
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
<sup>^</sup> C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction		50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction		100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction		100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)		50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)		50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB1 0.4-0.5	BH-CB2 0.04-0.1	BH-CB3 0.5-0.6	BH-CB4 0.5-0.6	BH-CB5 0.4-0.5
		Sampli	ing date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-001	ES2229960-002	ES2229960-003	ES2229960-004	ES2229960-005
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
^ Sum of BTEX		0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes		0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	116	91.5	89.6	98.0	92.0
EP068S: Organochlorine Pestici	de Surrogate							
Dibromo-DDE	21655-73-2	0.05	%	130	93.1	89.4	100	93.9
EP068T: Organophosphorus Pes	sticide Surrogate							
DEF	78-48-8	0.05	%	136	100	101	93.8	94.0
EP075(SIM)S: Phenolic Compour	nd Surrogates							
Phenol-d6	13127-88-3	0.5	%	74.2	75.1	74.1	76.4	73.9
2-Chlorophenol-D4	93951-73-6	0.5	%	80.8	82.5	81.8	89.5	87.4
2.4.6-Tribromophenol	118-79-6	0.5	%	53.7	51.2	58.5	70.7	67.7
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	84.3	87.5	85.7	102	97.5
Anthracene-d10	1719-06-8	0.5	%	87.8	91.2	89.9	90.5	86.5
4-Terphenyl-d14	1718-51-0	0.5	%	86.2	87.4	86.7	92.5	89.4
EP080S: TPH(V)/BTEX Surrogate	es							
1.2-Dichloroethane-D4	17060-07-0	0.2	%	91.4	104	94.1	97.2	102
Toluene-D8	2037-26-5	0.2	%	97.0	104	99.1	99.0	107
4-Bromofluorobenzene	460-00-4	0.2	%	91.6	95.3	92.7	92.4	97.4



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB6 0.04-0.1	BH-CB7 0.5-00.6	BH-CB8 0.5-0.6	BH-CB9 0.45-0.5	BH-CB10 0.3-0.4
		Samplii	ng date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-006	ES2229960-007	ES2229960-008	ES2229960-009	ES2229960-010
			-	Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 1	05-110°C)							
Moisture Content		1.0	%	4.0	10.7	8.7	12.5	16.8
EG005(ED093)T: Total Metals by ICP	-AFS							
Arsenic	7440-38-2	5	mg/kg	<5	5	<5	7	5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	10	11	10	13	16
Copper	7440-50-8	5	mg/kg	13	20	19	24	30
Lead	7439-92-1	5	mg/kg	<5	7	8	33	9
Nickel	7440-02-0	2	mg/kg	10	7	9	9	13
Zinc	7440-66-6	5	mg/kg	13	40	42	53	55
EG035T: Total Recoverable Mercury								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
-		0.1	mg/kg	-0.1	-0.1	-0.1	-0.1	-0.1
P066: Polychlorinated Biphenyls (F		0.1	malka	<0.1	<0.1	<0.1	<0.1	<0.1
Total Polychlorinated biphenyls		0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides		0.05	<b>a</b>	0.05	0.05	0.05	0.05	0.05
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Total Chlordane (sum)		0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
՝ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

# Page : 8 of 23 Work Order : ES2229960 Client : REGIONAL GEOTECHNICAL SOLUTION Project : RGS32576.1 PROPOSED CARPARK B Upgrades



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB6 0.04-0.1	BH-CB7 0.5-00.6	BH-CB8 0.5-0.6	BH-CB9 0.45-0.5	BH-CB10 0.3-0.4
		Samplii	ng date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-006	ES2229960-007	ES2229960-008	ES2229960-009	ES2229960-010
,				Result	Result	Result	Result	Result
EP068A: Organochlorine Pestici	des (OC) - Continued							
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pe	sticides (OP)							
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Arom	atic Hydrocarbons							
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

# Page : 9 of 23 Work Order : ES2229960 Client : REGIONAL GEOTECHNICAL SOLUTION Project : RGS32576.1 PROPOSED CARPARK B Upgrades



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB6 0.04-0.1	BH-CB7 0.5-00.6	BH-CB8 0.5-0.6	BH-CB9 0.45-0.5	BH-CB10 0.3-0.4
		Sampli	ng date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-006	ES2229960-007	ES2229960-008	ES2229960-009	ES2229960-010
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic H	lydrocarbons - Cont	inued						
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbor	IS	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)		0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)		0.5	mg/kg	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)		0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocar	bons							
C6 - C9 Fraction		10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction		50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction		100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction		100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)		50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydroc	arbons - NEPM 201	3 Fractio	ns					
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
<sup>^</sup> C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction		50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction		100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction		100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)		50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)		50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB6 0.04-0.1	BH-CB7 0.5-00.6	BH-CB8 0.5-0.6	BH-CB9 0.45-0.5	BH-CB10 0.3-0.4
		Sampl	ing date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-006	ES2229960-007	ES2229960-008	ES2229960-009	ES2229960-010
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
^ Sum of BTEX		0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes		0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	99.5	90.9	99.4	94.6	85.9
EP068S: Organochlorine Pesticio	de Surrogate							
Dibromo-DDE	21655-73-2	0.05	%	104	91.7	102	98.4	85.2
EP068T: Organophosphorus Pes	ticide Surrogate							
DEF	78-48-8	0.05	%	108	93.1	101	99.7	86.5
EP075(SIM)S: Phenolic Compour	nd Surrogates							
Phenol-d6	13127-88-3	0.5	%	74.2	75.5	78.8	74.6	76.2
2-Chlorophenol-D4	93951-73-6	0.5	%	89.2	89.8	92.8	89.1	89.4
2.4.6-Tribromophenol	118-79-6	0.5	%	42.1	69.1	68.2	70.4	70.3
EP075(SIM)T: PAH Surrogates			i i i i i i i i i i i i i i i i i i i					
2-Fluorobiphenyl	321-60-8	0.5	%	98.7	97.8	104	97.8	99.6
Anthracene-d10	1719-06-8	0.5	%	87.2	86.9	93.5	86.6	88.8
4-Terphenyl-d14	1718-51-0	0.5	%	89.3	89.2	95.0	88.6	90.1
EP080S: TPH(V)/BTEX Surrogate	S							
1.2-Dichloroethane-D4	17060-07-0	0.2	%	101	101	97.2	100	99.9
Toluene-D8	2037-26-5	0.2	%	101	106	96.6	103	102
4-Bromofluorobenzene	460-00-4	0.2	%	95.8	95.9	90.5	91.6	92.7



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB11 0.5-0.6	BH-CB12 0.05-0.1	BH-CB13 0.3-0.4	BH-CB14 0.5-0.1	BH-CB15 0.1-0.2
		Sampli	ng date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-011	ES2229960-012	ES2229960-013	ES2229960-014	ES2229960-015
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @	105-110°C)							1
Moisture Content		1.0	%	10.0	2.9	14.8	6.0	15.9
EG005(ED093)T: Total Metals by IC	P-AES							
Arsenic	7440-38-2	5	mg/kg	6	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	17	4	8	8	11
Copper	7440-50-8	5	mg/kg	22	7	12	14	21
Lead	7439-92-1	5	mg/kg	9	<5	5	11	6
Nickel	7440-02-0	2	mg/kg	9	4	5	7	8
Zinc	7440-66-6	5	mg/kg	44	11	24	42	44
EG035T: Total Recoverable Mercu								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls		-	3 3					
Total Polychlorinated biphenyls	(РСВ) 	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
		0.1	mg/ng		-0.1	-0.1	-0.1	-0.1
EP068A: Organochlorine Pesticide alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC		0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	319-85-7 58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	1024-57-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	959-98-8 5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD		0.05		<0.05	<0.05	<0.05	<0.05	<0.05
	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4		mg/kg					
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

# Page : 12 of 23 Work Order : ES2229960 Client : REGIONAL GEOTECHNICAL SOLUTION Project : RGS32576.1 PROPOSED CARPARK B Upgrades



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB11 0.5-0.6	BH-CB12 0.05-0.1	BH-CB13 0.3-0.4	BH-CB14 0.5-0.1	BH-CB15 0.1-0.2
		Samplii	ng date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-011	ES2229960-012	ES2229960-013	ES2229960-014	ES2229960-015
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pestici	des (OC) - Continued							
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
<sup>^</sup> Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pes	sticides (OP)							
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Arom	atic Hydrocarbons							
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

# Page : 13 of 23 Work Order : ES2229960 Client : REGIONAL GEOTECHNICAL SOLUTION Project : RGS32576.1 PROPOSED CARPARK B Upgrades



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB11 0.5-0.6	BH-CB12 0.05-0.1	BH-CB13 0.3-0.4	BH-CB14 0.5-0.1	BH-CB15 0.1-0.2
		Sampli	ng date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-011	ES2229960-012	ES2229960-013	ES2229960-014	ES2229960-015
			-	Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic H	ydrocarbons - Cont	inued						
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbon	IS	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)		0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)		0.5	mg/kg	0.6	0.6	0.6	0.6	0.6
` Benzo(a)pyrene TEQ (LOR)		0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarl	bons							
C6 - C9 Fraction		10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction		50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction		100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction		100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)		50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydroc	arbons - NEPM 201	3 Fractio	ns					
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
<sup>^</sup> C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction		50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction		100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction		100	mg/kg	<100	<100	<100	130	<100
>C10 - C40 Fraction (sum)		50	mg/kg	<50	<50	<50	130	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)		50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Sub-Matrix: SOIL (Matrix: SOIL)	Sample ID			BH-CB11 0.5-0.6	BH-CB12 0.05-0.1	BH-CB13 0.3-0.4	BH-CB14 0.5-0.1	BH-CB15 0.1-0.2
		Sampl	ing date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-011	ES2229960-012	ES2229960-013	ES2229960-014	ES2229960-015
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
^ Sum of BTEX		0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes		0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	90.4	94.8	97.1	89.0	90.3
EP068S: Organochlorine Pesticio	de Surrogate							
Dibromo-DDE	21655-73-2	0.05	%	91.1	102	100	100.0	94.3
EP068T: Organophosphorus Pes	ticide Surrogate							
DEF	78-48-8	0.05	%	90.3	105	102	101	93.7
EP075(SIM)S: Phenolic Compour	nd Surrogates							
Phenol-d6	13127-88-3	0.5	%	78.2	80.8	76.4	74.5	74.4
2-Chlorophenol-D4	93951-73-6	0.5	%	93.0	96.3	91.1	87.8	88.6
2.4.6-Tribromophenol	118-79-6	0.5	%	72.4	68.4	74.0	64.4	74.3
EP075(SIM)T: PAH Surrogates			i i i i i i i i i i i i i i i i i i i					
2-Fluorobiphenyl	321-60-8	0.5	%	103	107	100	97.1	98.0
Anthracene-d10	1719-06-8	0.5	%	91.0	94.3	89.7	86.1	88.2
4-Terphenyl-d14	1718-51-0	0.5	%	92.8	95.4	90.9	88.2	90.0
EP080S: TPH(V)/BTEX Surrogate	S							
1.2-Dichloroethane-D4	17060-07-0	0.2	%	98.2	98.4	91.1	103	97.7
Toluene-D8	2037-26-5	0.2	%	100	99.2	90.7	106	101
4-Bromofluorobenzene	460-00-4	0.2	%	91.8	88.5	83.9	92.8	88.7



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB16 0.05-0.1	BH-CB17 0.4-0.5	BH-CB18 0.05-0.1	CB-D2	CB-D3
(		Samplii	ng date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-016	ES2229960-017	ES2229960-018	ES2229960-019	ES2229960-020
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @	105-110°C)							1
Moisture Content		1.0	%	2.7	10.0	3.3	14.0	15.4
EG005(ED093)T: Total Metals by IC	P-AFS							
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	<2	8	3	12	12
Copper	7440-50-8	5	mg/kg	5	15	8	18	21
Lead	7439-92-1	5	mg/kg	<5	6	<5	9	8
Nickel	7440-02-0	2	mg/kg	2	6	3	8	9
Zinc	7440-66-6	5	mg/kg	7	30	10	38	45
EG035T: Total Recoverable Mercu								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
-		011			•			
EP066: Polychlorinated Biphenyls Total Polychlorinated biphenyls	(РСВ) 	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
		0.1	mg/kg	-0.1	-0.1	-0.1	50.1	-0.1
EP068A: Organochlorine Pesticide alpha-BHC		0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
Hexachlorobenzene (HCB)	319-84-6 118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC		0.05		<0.05	<0.05	<0.05	<0.05	<0.05
	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC delta-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
	319-86-8		mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05 0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2		mg/kg					
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	< 0.05	< 0.05	< 0.05
Total Chlordane (sum)		0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	< 0.05	< 0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05 <0.05	< 0.05	<0.05 <0.05
4.4'-DDE	72-55-9	0.05	mg/kg				<0.05	
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	< 0.05	< 0.05	< 0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	< 0.05	< 0.05	< 0.05
Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	< 0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

# Page : 16 of 23 Work Order : ES2229960 Client : REGIONAL GEOTECHNICAL SOLUTION Project : RGS32576.1 PROPOSED CARPARK B Upgrades



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB16 0.05-0.1	BH-CB17 0.4-0.5	BH-CB18 0.05-0.1	CB-D2	CB-D3
		Samplii	ng date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-016	ES2229960-017	ES2229960-018	ES2229960-019	ES2229960-020
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pestici	des (OC) - Continued							
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
`Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pe	sticides (OP)							
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Arom	atic Hydrocarbons							
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

# Page : 17 of 23 Work Order : ES2229960 Client : REGIONAL GEOTECHNICAL SOLUTION Project : RGS32576.1 PROPOSED CARPARK B Upgrades



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB16 0.05-0.1	BH-CB17 0.4-0.5	BH-CB18 0.05-0.1	CB-D2	CB-D3
		Sampli	ng date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-016	ES2229960-017	ES2229960-018	ES2229960-019	ES2229960-020
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic H	lydrocarbons - Cont	inued						
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbon	IS	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Senzo(a)pyrene TEQ (zero)		0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ (half LOR)		0.5	mg/kg	0.6	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (LOR)		0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocar	bons							
C6 - C9 Fraction		10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction		50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction		100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction		100	mg/kg	180	<100	<100	<100	<100
C10 - C36 Fraction (sum)		50	mg/kg	180	<50	<50	<50	<50
EP080/071: Total Recoverable Hydroc	arbons - NEPM 201	3 Fractio	ns					
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction		50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction		100	mg/kg	150	<100	<100	<100	<100
>C34 - C40 Fraction		100	mg/kg	240	<100	130	<100	<100
>C10 - C40 Fraction (sum)		50	mg/kg	390	<50	130	<50	<50
<ul> <li>&gt;C10 - C16 Fraction minus Naphthalene</li> <li>(F2)</li> </ul>		50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Sub-Matrix: <b>SOIL</b> (Matrix: <b>SOIL</b> )			Sample ID	BH-CB16 0.05-0.1	BH-CB17 0.4-0.5	BH-CB18 0.05-0.1	CB-D2	CB-D3
	Sampling date / time		22-Aug-2022 00:00	22-Aug-2022 00:00	22-Aug-2022 00:00	22-Aug-2022 00:00	22-Aug-2022 00:00	
Compound	CAS Number	LOR	Unit	ES2229960-016	ES2229960-017	ES2229960-018	ES2229960-019	ES2229960-020
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
^ Sum of BTEX		0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes		0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	97.1	83.0	99.1	81.6	79.0
EP068S: Organochlorine Pesticid	e Surrogate							
Dibromo-DDE	21655-73-2	0.05	%	104	99.4	119	96.0	94.6
EP068T: Organophosphorus Pest	ticide Surrogate							
DEF	78-48-8	0.05	%	100.0	92.2	111	86.9	79.0
EP075(SIM)S: Phenolic Compoun	d Surrogates		i i i i i i i i i i i i i i i i i i i					
Phenol-d6	13127-88-3	0.5	%	75.4	76.4	82.2	75.2	72.5
2-Chlorophenol-D4	93951-73-6	0.5	%	90.5	91.9	98.6	90.0	85.1
2.4.6-Tribromophenol	118-79-6	0.5	%	57.9	78.8	69.4	75.4	71.1
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	101	99.8	108	98.1	94.0
Anthracene-d10	1719-06-8	0.5	%	90.9	91.0	97.3	88.9	85.1
4-Terphenyl-d14	1718-51-0	0.5	%	91.9	93.2	99.3	90.2	85.8
EP080S: TPH(V)/BTEX Surrogates	3							
1.2-Dichloroethane-D4	17060-07-0	0.2	%	110	99.7	105	93.2	98.3
Toluene-D8	2037-26-5	0.2	%	115	105	108	96.1	104
4-Bromofluorobenzene	460-00-4	0.2	%	99.1	93.9	96.8	87.4	92.0

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Work Order	: ES2229960
Client	: REGIONAL GEOTECHNICAL SOLUTION
Project	<ul> <li>RGS32576.1 PROPOSED CARPARK B Upgrades</li> </ul>



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB1 0.5-0.6	BH-CB2 0.5-0.6	BH-CB3 0.5-0.6	BH-CB4 0.04-0.1	BH-CB5 0.5-0.95
		Samplii	ng date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-021	ES2229960-022	ES2229960-023	ES2229960-024	ES2229960-025
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identificat	tion of Asbestos in Soils	;						
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-		-	-	-	-	-
Synthetic Mineral Fibre		0.1	g/kg	No	No	No	No	No
Organic Fibre		0.1	g/kg	No	No	No	No	No
Sample weight (dry)		0.01	g	140	110	79.5	235	168
APPROVED IDENTIFIER:		-		J.SPOONER	J.SPOONER	J.SPOONER	J.SPOONER	J.SPOONER

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Work Order	: ES2229960
Client	: REGIONAL GEOTECHNICAL SOLUTION
Project	<ul> <li>RGS32576.1 PROPOSED CARPARK B Upgrades</li> </ul>



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB6 0.5-0.6	BH-CB7 0.06-0.1	BH-CB8 0.5-0.6	BH-CB9 0.5-0.6	BH-CB10 0.3-0.4
		Sampli	ng date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-026	ES2229960-027	ES2229960-028	ES2229960-029	ES2229960-030
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identifica	tion of Asbestos in Soils	;						
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-		-	-	-	-	-
Synthetic Mineral Fibre		0.1	g/kg	No	No	No	No	No
Organic Fibre		0.1	g/kg	No	No	No	No	No
Sample weight (dry)		0.01	g	85.4	259	132	167	138
APPROVED IDENTIFIER:		-		J.SPOONER	J.SPOONER	J.SPOONER	J.SPOONER	J.SPOONER

Page	: 21 of 23
Work Order	: ES2229960
Client	: REGIONAL GEOTECHNICAL SOLUTION
Project	<ul> <li>RGS32576.1 PROPOSED CARPARK B Upgrades</li> </ul>



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB11 0.5-0.6	BH-CB12 0.5-0.6	BH-CB13 0.3-0.4	BH-CB14 0.5-0.6	BH-CB15 0.1-0.2
		Sampli	ng date / time	22-Aug-2022 00:00				
Compound	CAS Number	LOR	Unit	ES2229960-031	ES2229960-032	ES2229960-033	ES2229960-034	ES2229960-035
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identifica	tion of Asbestos in Soils							
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-		-	-	-	-	-
Synthetic Mineral Fibre		0.1	g/kg	No	No	No	No	No
Organic Fibre		0.1	g/kg	No	No	No	No	No
Sample weight (dry)		0.01	g	68.4	62.2	119	143	179
APPROVED IDENTIFIER:		-		J.SPOONER	J.SPOONER	J.SPOONER	J.SPOONER	J.SPOONER



Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH-CB16 0.05-0.1	BH-CB17 0.5-0.6	BH-CB18 0.5-0.6	 
		Samplii	ng date / time	22-Aug-2022 00:00	22-Aug-2022 00:00	22-Aug-2022 00:00	 
Compound	CAS Number	LOR	Unit	ES2229960-036	ES2229960-037	ES2229960-038	 
				Result	Result	Result	 
EA200: AS 4964 - 2004 Identification	on of Asbestos in Soils	;					
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	 
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	 
Asbestos Type	1332-21-4	-		-	-	-	 
Synthetic Mineral Fibre		0.1	g/kg	No	No	No	 
Organic Fibre		0.1	g/kg	No	No	No	 
Sample weight (dry)		0.01	g	367	70.1	221	 
APPROVED IDENTIFIER:		-		J.SPOONER	J.SPOONER	J.SPOONER	 

#### Analytical Results

#### Descriptive Results

#### Sub-Matrix: SOIL

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identificatio	n of Asbestos in Soils	
EA200: Description	BH-CB1 0.5-0.6 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB2 0.5-0.6 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB3 0.5-0.6 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB4 0.04-0.1 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB5 0.5-0.95 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB6 0.5-0.6 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB7 0.06-0.1 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB8 0.5-0.6 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB9 0.5-0.6 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB10 0.3-0.4 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB11 0.5-0.6 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB12 0.5-0.6 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB13 0.3-0.4 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB14 0.5-0.6 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB15 0.1-0.2 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB16 0.05-0.1 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB17 0.5-0.6 - 22-Aug-2022 00:00	Soil sample.
EA200: Description	BH-CB18 0.5-0.6 - 22-Aug-2022 00:00	Soil sample.



#### Surrogate Control Limits

Sub-Matrix: SOIL		Recovery	Limits (%)
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Si	urrogate		
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticid	e Surrogate		
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound S	urrogates		
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

#### Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils



### Appendix D

Letter from Dr David Tully CEnvP SC

Regional Geotechnical Solutions RGS32576.1-AO 5 September 2022

### **Contaminated Land Solutions**

13 September 2022

Ref: 0177.L03

Regional Geotechnical Solutions Pty Ltd Unit 4 25-27 Hurley Drive Coffs Harbour NSW 2450

For the attention of Louis Davidson

Dear Louis,

### RE: Report Review Stage 1 & Stage 2 Site Contamination Assessment –Tamworth Health Service Redevelopment: Carpark B Works, Dean Street, Tamworth

I, Dr David Tully of Contaminated Land Solutions Pty Ltd, am a Certified Environmental Practitioner Site Contamination Specialist (General Certified Environmental Practitioner certification no. 1138 and Site Contamination Specialist certification no. SC40084).

I confirm I have reviewed the Regional Geotechnical Solutions report entitled "Stage 1 & Stage 2 Site Contamination Assessment – *Tamworth Health Service Redevelopment: Carpark B Works, Dean Street, Tamworth*" (Ref: RGS32576.1-AO), dated 5 September 2022 and a copy of which I have retained.

I can confirm that on the basis of the information contained within the report, I support the conclusions and recommendations provided therein.

Should the client, regulator or local authority have any queries regarding the report review, I can be contacted by e-mail via <u>david.tully@contaminatedlandsolutions.com.au</u>. Specific queries regarding the content of the report should be addressed to Louis Davidson at Regional Geotechnical Solutions.

For and on behalf of Contaminated Land Solutions Pty Ltd

Dr David Tully CEnvP SC Director Contaminated Land Solutions Pty Ltd





Contaminated Land Solutions Pty Ltd 10 Heath Road Crafers West SA 5152 0410 012 292 david.tully@contaminatedlandsolutions.com.au