

RP Infrastructure

Stage 1 and Stage 2 Site Contamination Assessment

Tamworth Health Service Redevelopment: Carpark B Works

Dean Street, Tamworth

Report No. RGS32576.1-AO

5 September 2022



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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**

Prepared by



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Reviewed by



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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.

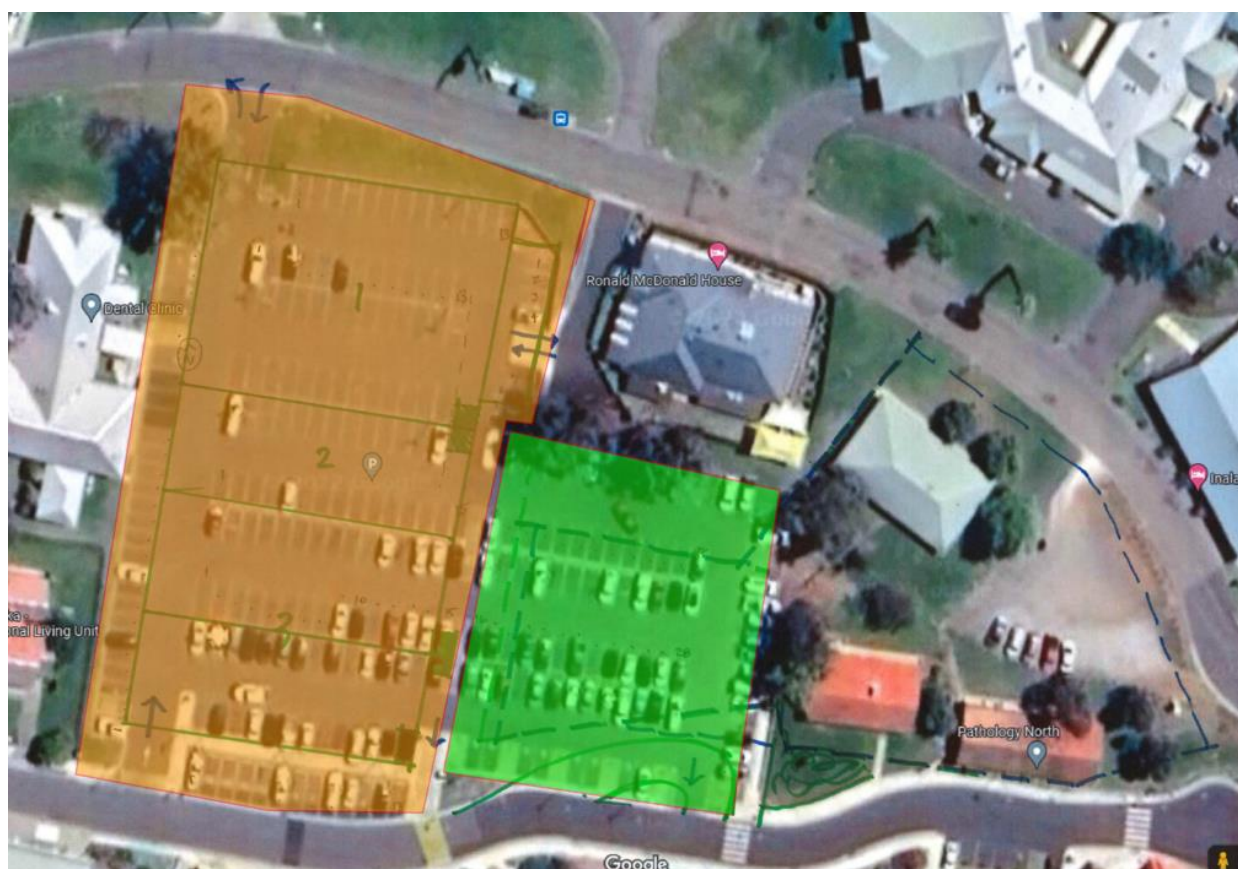


Diagram 1: Proposed development over existing sealed carpark. The proposed multistorey carpark is shaded orange. The proposed clinic floor is shaded green.

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 7,500m². The layout of the subject area is illustrated above and in the attached figures.



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.



Table 1: Summary of Site Details

Site location:	Dean Street, Tamworth
Approximate site area:	20 Hectares (total site) 7,500m ² (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 style="list-style-type: none">• Within hospital:<ul style="list-style-type: none">◦ North, Aged Care Assessment Team◦ Northeast, Ronald McDonald House accommodation◦ East, staff accommodation, to be redeveloped as A2 Banksia Mental Health Unit◦ South, rehabilitation ward◦ West, dental clinic• Surrounding area:<ul style="list-style-type: none">◦ Vacant land to the north◦ South of Johnston Street, Tamwell Medical Centre and residential properties◦ East of Smith Street, vacant land/carparks◦ West of Dean Street, Tamworth Correctional Centre
Government Area:	Tamworth Regional Council

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, <http://waterinfo.nsw.gov.au/gw/> 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.

Table 2 - Aerial Photograph Summary

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.



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 similar 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.



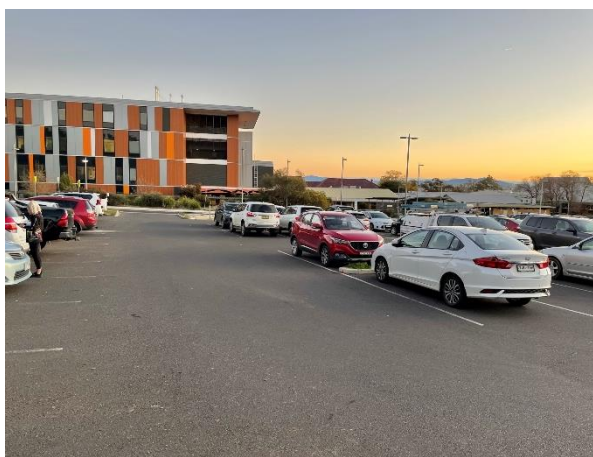
Looking east over the northern portion of the existing carpark.



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.



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 (www.environment.nsw.gov.au) 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 (7,500m²).

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.

Table 3 – Data Quality Objectives

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	The principal study questions that are: <ul style="list-style-type: none">• What is the nature and extent of soil contamination on the subject land (if any)?; and• Is the land suitable for the proposed hospital redevelopment from a contamination viewpoint?
Identify Inputs to the Decision	The primary inputs are: <ul style="list-style-type: none">• Site history study;• Site walkover assessment;• Chemical analysis of selected soil samples; and• Results summary.
Define the Boundary of the Assessment	<ul style="list-style-type: none">• The spatial boundaries are limited to the Carpark B boundaries as shown on Figure 2;• The investigation and screening levels for a Residential B land use scenario (limited access to soil) as a conservative measure.



Develop a Decision Rule	<p>The decision rules for the investigation are:</p> <ul style="list-style-type: none"> 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; <p>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:</p> <ul style="list-style-type: none"> Precision: NATA registered laboratories were used following NATA endorsed methods. An appropriate number of intra-laboratory samples were collected and analysed (following ASC NEPM guidance), the results of which are considered to be satisfactory; Accuracy: The laboratory limit or reporting (LOR) was appropriate for the screening criteria utilised. NATA registered laboratories were used following NATA endorsed methods including appropriate method blanks, laboratory control samples, laboratory spikes and duplicates the results of which are considered to be satisfactory. 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; 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 Comparability – Sample holding times were met and samples were properly and adequately preserved. Field sampling and handling procedures were followed. The data collected is considered to be comparable.
Specify Acceptable Limits on Decision Errors	<ul style="list-style-type: none"> Acceptable limits for QA/QC measures are defined in Section 5; Acceptable investigation and screening levels are those for a Residential B land use scenario; and Specific limits are in accordance with the appropriate NSW EPA guidelines including indicators of data quality and standard procedures for field sampling and handling.
Optimise the Design for Obtaining Data	<p>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.</p>



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.



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 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	Fill (Pavement Gravel): Sandy Clayey GRAVEL, fine to medium grained angular gravel, fine to medium grained sand
BH-CB1 0.4-0.5 BH-CB1 0.5-0.6 BH-CB2 0.5-0.6	Residual/Colluvial Soil: CLAY and Silty CLAY, medium to high plasticity, with some fine grained angular gravel



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 0.5-0.6	
BH-CB8 0.5-0.6	
BH-CB9 0.45-0.5	
BH-CB9 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 C₃₄-C₄₀ fraction, sample BH-CB16 0.05-0.1 that had elevated levels of TRH C₁₆-C₃₄ fraction and TRH C₃₄-C₄₀ fraction, and sample BH-CB18 0.05-0.1 that had elevated levels of TRH C₃₄-C₄₀ 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.

Table 5: Potential AECs and COCs

AEC	Mode of Potential Contamination	Potential COCs	Likelihood of Contamination
AEC1: 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
<i>Heavy Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc</i> <i>BTEX - Benzene, Toluene, Ethylbenzene and Xylene</i> <i>TPH - Total Petroleum Hydrocarbons</i> <i>PAH - Polycyclic Aromatic Hydrocarbons</i> <i>PCB - Polychlorinated Biphenyls</i> <i>OC/OPP - Organochlorine and Organophosphorus Pesticides</i>			

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.



Table 6: Potential Exposure Pathways and Receptors

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
<i>Heavy Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc</i> <i>BTEX - Benzene, Toluene, Ethylbenzene and Xylene</i> <i>TPH - Total Petroleum Hydrocarbons</i> <i>PAH - Polycyclic Aromatic Hydrocarbons</i> <i>PCB - Polychlorinated Biphenyls</i> <i>OC/OPP - Organochlorine and Organophosphorus Pesticides</i>		

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 (C₃₄-C₄₀ fraction), BH-CB16 0.05-0.1m (C₁₆-C₃₄ fraction and TRH C₃₄-C₄₀ fraction), and BH-CB18 0.05-0.1m (C₃₄-C₄₀ 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

Andrew Hills


Senior Environmental Engineer



Figures




Site location


 REGIONAL GEOTECHNICAL SOLUTIONS	Client:	RP Infrastructure	Job No.	RGS32576.1
	Project:	Tamworth Health Service Redevelopment: Carpark B Works	Drawn By:	LD
		Dean Street, Tamworth	Scale:	NTS
	Title:	Site Location Plan	Date:	7-Sep-22
			Drawing No.	Figure 1



Legend	
	Site Boundary

 REGIONAL GEOTECHNICAL SOLUTIONS	Client:	RP Infrastructure	Job No.	RGS32576.1
	Project:	Tamworth Health Service Redevelopment: Carpark B Works	Drawn By:	LD
		Dean Street, Tamworth	Scale:	NTS
	Title:	Site Layout Plan	Date:	7-Sep-22
			Drawing No.	Figure 2

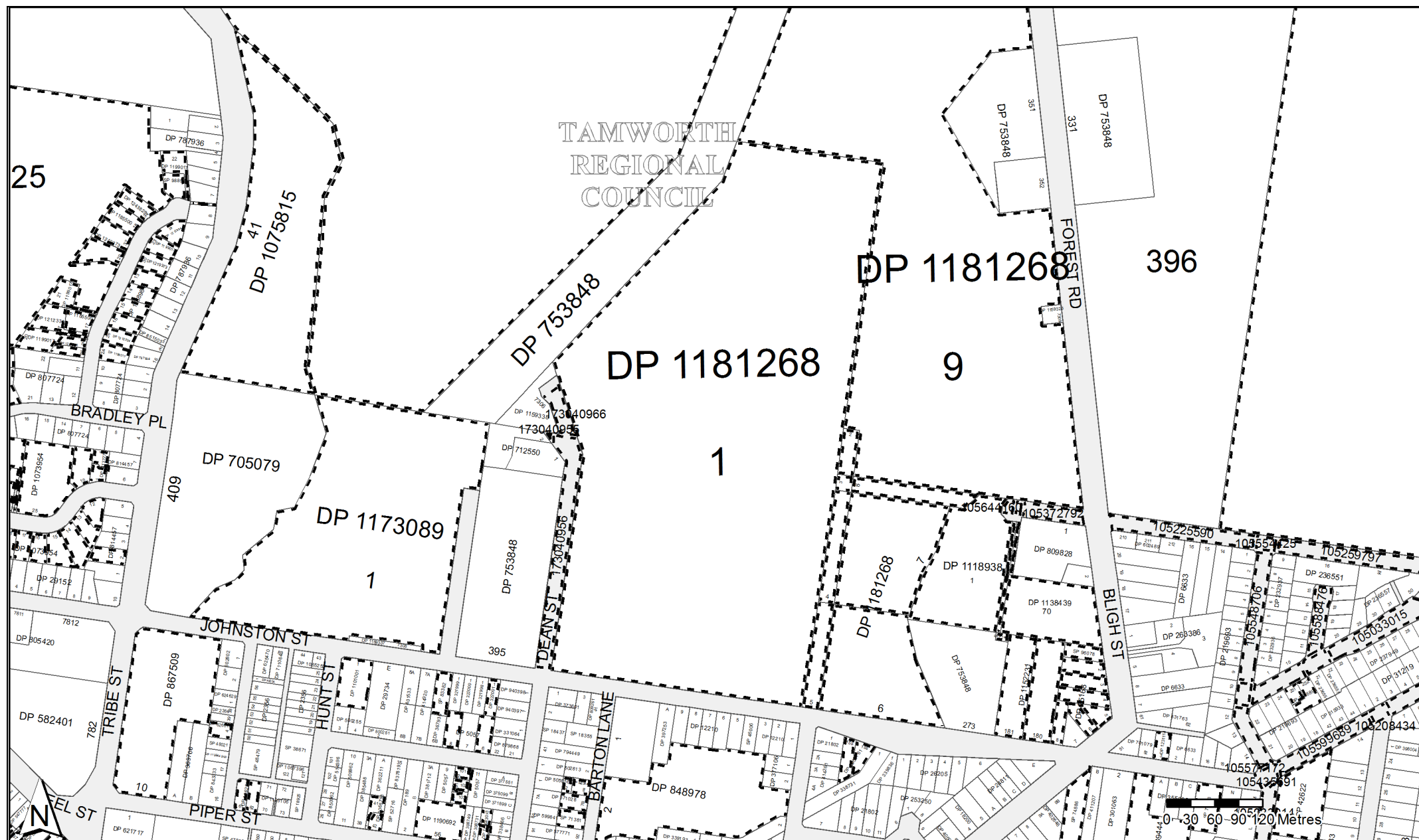



 REGIONAL GEOTECHNICAL SOLUTIONS	Client:	RP Infrastructure	Job No.	RGS32576.1
	Project:	Tamworth Health Service Redevelopment: Carpark B Works	Drawn By:	LD
		Dean Street, Tamworth	Scale:	NTS
	Title:	Sample Location Plan	Date:	7-Sep-22
			Drawing No.	Figure 3

























Appendix A

Site History Documentation




























	Status	Surv/Comp	Purpose
DP5057 Lot(s): 6			
 DP1251197	WITHDRAWN	UNAVAILABLE	EASEMENT
Lot(s): 8			
 DP1139570	REGISTERED	SURVEY	REDEFINITION
DP25168 Lot(s): 2, 3, 4, 5, 6, 8			
 DP1152231	REGISTERED	SURVEY	SUBDIVISION
DP322001 Lot(s): 1			
 DP1251197	WITHDRAWN	UNAVAILABLE	EASEMENT
DP371028 Lot(s): 7B			
 DP1167165	WITHDRAWN	UNAVAILABLE	CONSOLIDATION
DP392344 Lot(s): 6B			
 DP1167165	WITHDRAWN	UNAVAILABLE	CONSOLIDATION
DP505056 Lot(s): 2			
 DP1167165	WITHDRAWN	UNAVAILABLE	CONSOLIDATION
DP626018 Lot(s): 4			
 DP1167052	PRE-ALLOCATED	UNAVAILABLE	REDEFINITION
DP710383 Lot(s): 2			
 DP1127918	REGISTERED	SURVEY	SUBDIVISION
DP814457 Lot(s): 2			
 DP1073954	REGISTERED	SURVEY	SUBDIVISION
DP848978 Lot(s): 2			
 RETIREMENT VILLAGE. VILLAS 1-36 SHOWN IN PLAN WITH MEMORANDUM AB21496			
DP867509 Lot(s): 10			
 DP1134688	REGISTERED	SURVEY	EASEMENT
DP1026894 Lot(s): 251, 252			
 DP219693	HISTORICAL	SURVEY	SUBDIVISION
DP1062507 Lot(s): 61, 62			
 DP587549	HISTORICAL	COMPILATION	SUBDIVISION
Lot(s): 62			
 DP2356	HISTORICAL	COMPILATION	UNRESEARCHED
DP1065791 Lot(s): 41, 42			
 DP362211	HISTORICAL	SURVEY	UNRESEARCHED
DP1073954 Lot(s): 24			
 DP1140190	REGISTERED	SURVEY	SUBDIVISION
Lot(s): 10, 12, 13, 14, 15, 16, 17, 18, 23, 24, 25			
 DP814457	HISTORICAL	SURVEY	SUBDIVISION
Lot(s): 25			
 DP778289	HISTORICAL	SURVEY	SUBDIVISION
DP1075815 Lot(s): 41			
 DP705079	HISTORICAL	SURVEY	CROWN FOLIO CREATION
DP1081866 Lot(s): 101, 102, 103			
 DP5057	HISTORICAL	SURVEY	UNRESEARCHED

































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	Status	Surv/Comp	Purpose
DP1101001			
Lot(s): 1			
 DP29734	HISTORICAL	SURVEY	UNRESEARCHED
DP1113727			
Lot(s): 111, 112			
 DP814457	HISTORICAL	SURVEY	SUBDIVISION
 DP1073954	HISTORICAL	SURVEY	SUBDIVISION
DP1114638			
Lot(s): 51			
 DP602465	HISTORICAL	COMPILATION	SUBDIVISION
 DP1026417	HISTORICAL	SURVEY	SUBDIVISION
 DP1031338	HISTORICAL	SURVEY	SUBDIVISION
DP1118938			
Lot(s): 1			
 DP753848	HISTORICAL	COMPILATION	CROWN ADMIN NO.
 DP1099608	HISTORICAL	SURVEY	ROADS ACT, 1993
 NSW GAZ.		21-09-2007	Folio : 7235
LOT 1 DP1099608 - SEE AD462184			
Lot(s): 1, 3			
 NSW GAZ.		11-07-2008	Folio : 6941
CLOSED ROAD AD790097 - LOT 3 DP1118938			
Lot(s): 2			
 NSW GAZ.		08-02-2008	Folio : 672
CLOSED ROAD LOT 2 DP1118938			
DP1119787			
Lot(s): 2			
 NSW GAZ.		22-02-2008	Folio : 1160
CLOSED ROAD LOT 2 DP1119787			
DP1127918			
Lot(s): 97, 98			
 DP534738	HISTORICAL	SURVEY	SUBDIVISION
DP1138439			
Lot(s): 70			
 DP753848	HISTORICAL	COMPILATION	CROWN ADMIN NO.
 DP1118603	HISTORICAL	COMPILATION	CROWN FOLIO CREATION
 NSW GAZ.		28-12-2007	Folio : 10758
CLOSED ROAD LOT 1 DP1118603			
DP1140190			
Lot(s): 221, 222			
 DP814457	HISTORICAL	SURVEY	SUBDIVISION
 DP1073954	HISTORICAL	SURVEY	SUBDIVISION
DP1152231			
Lot(s): 181			
 DP1119787	HISTORICAL	COMPILATION	ROADS ACT, 1993
 NSW GAZ.		21-12-2007	Folio : 9993
CLOSED ROAD LOT 1 DP1119787			
Lot(s): 180, 181			
 DP753848	HISTORICAL	COMPILATION	CROWN ADMIN NO.
Lot(s): 180			
 NSW GAZ.		16-08-2013	Folio : 3777
LOT 180 DP1152231 VESTED BY THE NEW SOUTH WALES LAND AND HOUSING CORPORATION IN HOMES NORTH COMMUNITY HOUSING COMPANY LTD			












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	Status	Surv/Comp	Purpose
DP1158146 Lot(s): 7304			
	NSW GAZ.	22-07-2016	Folio : 2048
REVOCATION OF RESERVATION OF CROWN LAND RESERVE NO. 96144 - LOTS 435-436 DP1054103 AND LOT 7304 DP1158146			
DP1168984 Lot(s): 11, 13, 14, 15, 16			
	DP787936	HISTORICAL	SURVEY
SUBDIVISION			
DP1173089 Lot(s): 1			
	DP47171	HISTORICAL	SURVEY
CROWN FOLIO CREATION			
	DP753848	HISTORICAL	COMPILATION
CROWN ADMIN NO.			
	DP1055791	HISTORICAL	SURVEY
CROWN FOLIO CREATION			
	DP1165492	HISTORICAL	SURVEY
REDEFINITION			
	NSW GAZ.	01-07-2011	Folio : 4697
REVOCATION OF RESERVATION OF CROWN LAND RESERVE NO. 753848 - PART BEING LOTS 405-408 DP47171, LOT 431 DP1055791, LOTS 265, 330 AND 363 DP753848 AND LOT 1 DP1165492			
DP1176430 Lot(s): 11, 12			
	DP356648	HISTORICAL	SURVEY
UNRESEARCHED			
DP1181268 Lot(s): 1			
	DP533835	HISTORICAL	SURVEY
RESUMPTION OR ACQUISITION			
	DP1195542	REGISTERED	SURVEY
EASEMENT			
Lot(s): 6			
	DP1188571	REGISTERED	SURVEY
RESUMPTION OR ACQUISITION			
	NSW GAZ.	11-10-2013	Folio : 4470
ACQUIRED FOR THE PURPOSES OF THE HEALTH ADMINISTRATION ACT 1982 LOT 61 DP1188571 AND EASEMENTS DESIGNATED (A) AND (B) SHOWN IN DP1188571			
Lot(s): 3, 8			
	DP1175412	HISTORICAL	COMPILATION
CROWN ROAD ENCLOSURE			
Lot(s): 2, 9			
	DP1076546	HISTORICAL	COMPILATION
DEPARTMENTAL			
Lot(s): 1, 4, 5, 6, 7			
	DP753848	HISTORICAL	COMPILATION
CROWN ADMIN NO.			
Lot(s): 8			
	NSW GAZ.	11-05-2012	Folio : 1366
CLOSED ROAD LOT 1 DP1175412			
	NSW GAZ.	22-06-2012	Folio : 2514
ADDITION TO RESERVED CROWN LAND RESERVE NO. 14778 - LOT 1 DP1175412			
Lot(s): 1, 2, 3, 4, 5			
	NSW GAZ.	21-12-2012	Folio : 5244
ACQUIRED FOR THE PURPOSES OF THE HEALTH ADMINISTRATION ACT 1982 - LOTS 1-5 DP1181268			
DP1185500 Lot(s): 17, 18			
	DP787936	HISTORICAL	SURVEY
SUBDIVISION			
	DP1168984	HISTORICAL	SURVEY
SUBDIVISION			
DP1190692 Lot(s): 56			
	DP5057	HISTORICAL	SURVEY
UNRESEARCHED			
	DP408923	HISTORICAL	SURVEY
UNRESEARCHED			
	DP873857	HISTORICAL	COMPILATION
CONSOLIDATION			
DP1198311 Lot(s): 1			
	DP24858	HISTORICAL	SURVEY
UNRESEARCHED			
	DP534738	HISTORICAL	SURVEY
SUBDIVISION			

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	Status	Surv/Comp	Purpose
Lot(s): 1, 5			
 DP416035	HISTORICAL	SURVEY	UNRESEARCHED
DP1199017			
Lot(s): 20, 21, 22, 23, 24			
 DP787936	HISTORICAL	SURVEY	SUBDIVISION
 DP1168984	HISTORICAL	SURVEY	SUBDIVISION
 DP1185500	HISTORICAL	SURVEY	SUBDIVISION
DP1206794			
Lot(s): 251, 252			
 DP787936	HISTORICAL	SURVEY	SUBDIVISION
 DP1168984	HISTORICAL	SURVEY	SUBDIVISION
 DP1185500	HISTORICAL	SURVEY	SUBDIVISION
 DP1199017	HISTORICAL	SURVEY	SUBDIVISION
DP1212334			
Lot(s): 26, 27, 28			
 DP787936	HISTORICAL	SURVEY	SUBDIVISION
 DP1168984	HISTORICAL	SURVEY	SUBDIVISION
 DP1185500	HISTORICAL	SURVEY	SUBDIVISION
 DP1199017	HISTORICAL	SURVEY	SUBDIVISION
DP1219373			
Lot(s): 29, 30, 32			
 DP787936	HISTORICAL	SURVEY	SUBDIVISION
 DP1168984	HISTORICAL	SURVEY	SUBDIVISION
 DP1185500	HISTORICAL	SURVEY	SUBDIVISION
 DP1199017	HISTORICAL	SURVEY	SUBDIVISION
 DP1212334	HISTORICAL	SURVEY	SUBDIVISION
DP1231114			
Lot(s): 3			
 DP6633	HISTORICAL	SURVEY	UNRESEARCHED
DP1233761			
Lot(s): 155, 156			
 DP21802	HISTORICAL	SURVEY	UNRESEARCHED
DP1243825			
Lot(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
DP1248231			
Lot(s): 7, 10			
 DP728359	HISTORICAL	SURVEY	SUBDIVISION
 DP1078221	HISTORICAL	SURVEY	SUBDIVISION
 DP1239283	HISTORICAL	SURVEY	SUBDIVISION
Lot(s): 10			
 DP807724	HISTORICAL	SURVEY	SUBDIVISION
Lot(s): 7			
 NSW GAZ. 18-05-2001 Folio : 2604 CROWN LANDS ACT, 1989; LAND ACQUISITION (JUST TERMS COMPENSATION) ACT, 1991; DECLARATION PURSUANT TO SECTION 138 OF THE CROWN LANDS ACT, 1989 - AFFECTING LOT 411 DP728359. ERRATUM GOV. GAZ. 1-6-2001 FOLIO 3052			
 NSW GAZ. 04-07-2014 Folio : 2587 REVOCATION OF RESERVATION OF CROWN LAND RESERVE NO. 753848 - LOT 33 DP1078221			

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	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			
Polygon Id(s): 105033014			
 NSW GAZ. 07-06-2019 Folio : 1861			
TRANSFER OF CROWN ROAD TO COUNCIL AFFECTING THE LAND SHADED RED IN THE DIAGRAM ACCOMPANYING THIS GAZETTE NOTIFICATION			
Polygon Id(s): 105644160			
 DP1099608 HISTORICAL SURVEY ROADS ACT, 1993			
Polygon Id(s): 105010105, 105372792, 105644160			
 NSW GAZ. 05-05-2006 Folio : 2709			
TRANSFER OF CROWN ROAD TO COUNCIL			
Polygon Id(s): 173040955, 173040956, 173040966			
 NSW GAZ. 03-07-2015 Folio : 2042			
TRANSFER OF CROWN ROAD TO COUNCIL			
Polygon Id(s): 105033015, 105208434, 105225589, 105225590, 105259797, 105361269, 105435691, 105543025, 105548706, 105554425, 105577172, 105582842, 105588476, 105599689			
 EX-SUR 68/34 DP978236			

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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	SURVEY	UNRESEARCHED
DP25555	SURVEY	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
DP236557	SURVEY	SUBDIVISION
DP237949	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	SURVEY	UNRESEARCHED
DP321998	SURVEY	UNRESEARCHED
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	COMPILATION	UNRESEARCHED
DP355838	SURVEY	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	SURVEY	UNRESEARCHED
DP381712	SURVEY	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	UNRESEARCHED
DP500251	SURVEY	SUBDIVISION

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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	SUBDIVISION
DP582401	SURVEY	SUBDIVISION
DP599841	COMPILATION	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	SURVEY	SUBDIVISION
DP843333	SURVEY	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	COMPILATION	CONSOLIDATION
DP1140190	SURVEY	SUBDIVISION
DP1140190	UNRESEARCHED	SUBDIVISION
DP1152231	SURVEY	SUBDIVISION
DP1152231	UNRESEARCHED	SUBDIVISION
DP1158146	COMPILATION	CROWN LAND CONVERSION
DP1159323	COMPILATION	CROWN LAND CONVERSION

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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	COMPILATION	STRATA PLAN
SP74886	COMPILATION	STRATA PLAN
SP79603	COMPILATION	STRATA PLAN
SP83382	COMPILATION	STRATA PLAN
SP96078	COMPILATION	STRATA PLAN
SP96078	UNRESEARCHED	STRATA PLAN
SP98897	COMPILATION	STRATA PLAN
SP98897	UNRESEARCHED	STRATA PLAN

Caution: This information is provided as a searching aid only. Whilst every endeavour is made to 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.

NEW SOUTH WALES

CERTIFICATE OF TITLE
PROPERTY ACT, 1900, as amended.



1110035

Prior Title (Crown Grant)
Volume 4517 Folio 90

Vol. 11100 Fol. 35

Edition issued 22-7-1969



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.

Witness

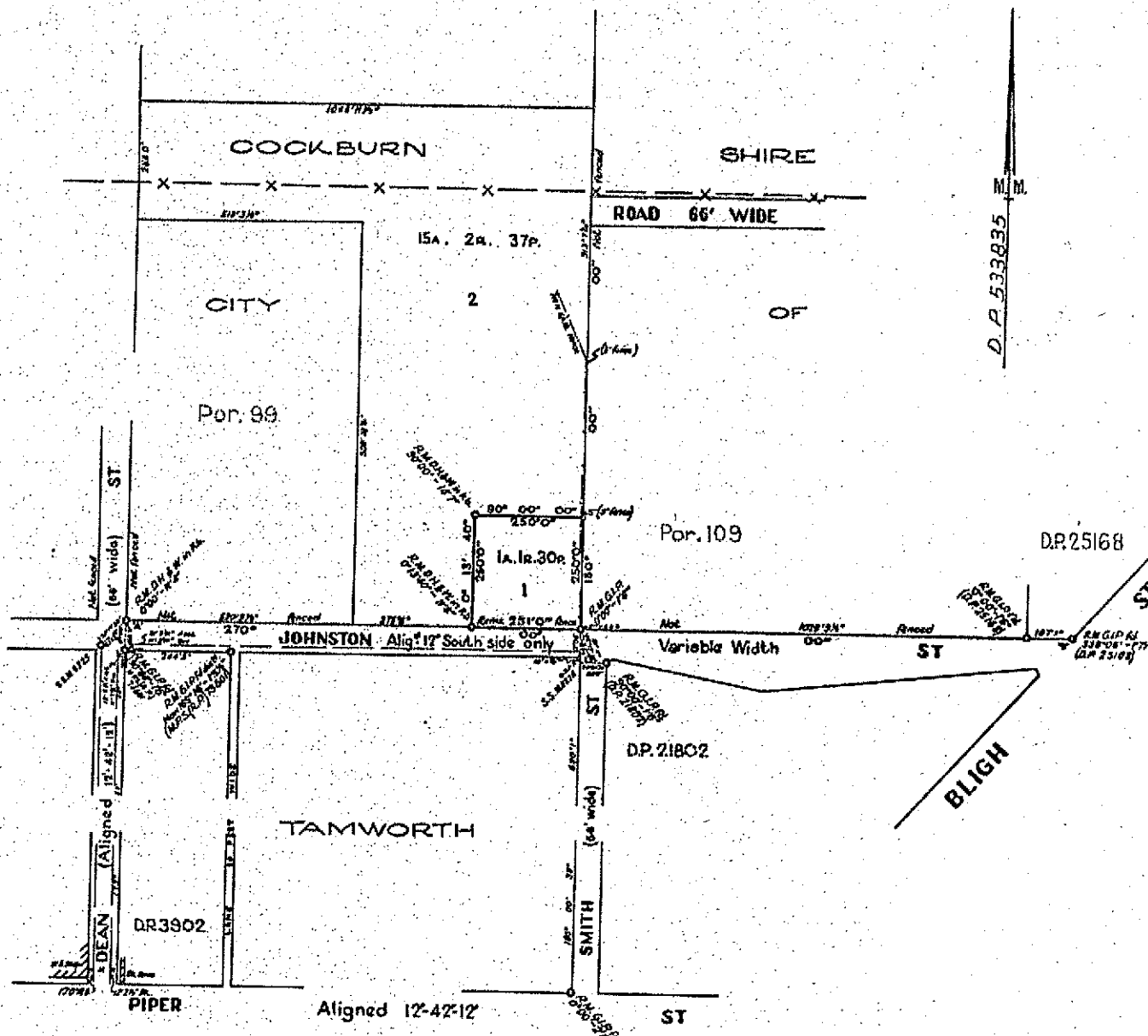
L. Balliver

CANCELLED
Jawatson
Registrar General.



PLAN SHOWING LOCATION OF LAND

SEE AUTO FOLIO



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in Deposited Plan 533835 in the City of Tamworth and Shire of Cockburn Parish of Tamworth and County of Inglis. EXCEPTING THEREOUT the minerals reserved by the Crown Grants.

1969M6414

FIRST SCHEDULE

THE TAMWORTH BASE HOSPITAL
THE TAMWORTH DISTRICT HOSPITAL.

SECOND SCHEDULE

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

Jawatson
Registrar General.

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

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

SEE AUTO FOLD

[illegible]

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



11118

NEW SOUTH WALES

CERTIFICATE OF TITLE
PROPERTY ACT, 1900, as amended.

Prior Title (Crown Grant)
Volume 4517 Folio 90

Vol. 11118 Fol. 235



Edition issued 12-8-1969
L319524

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.

Witness

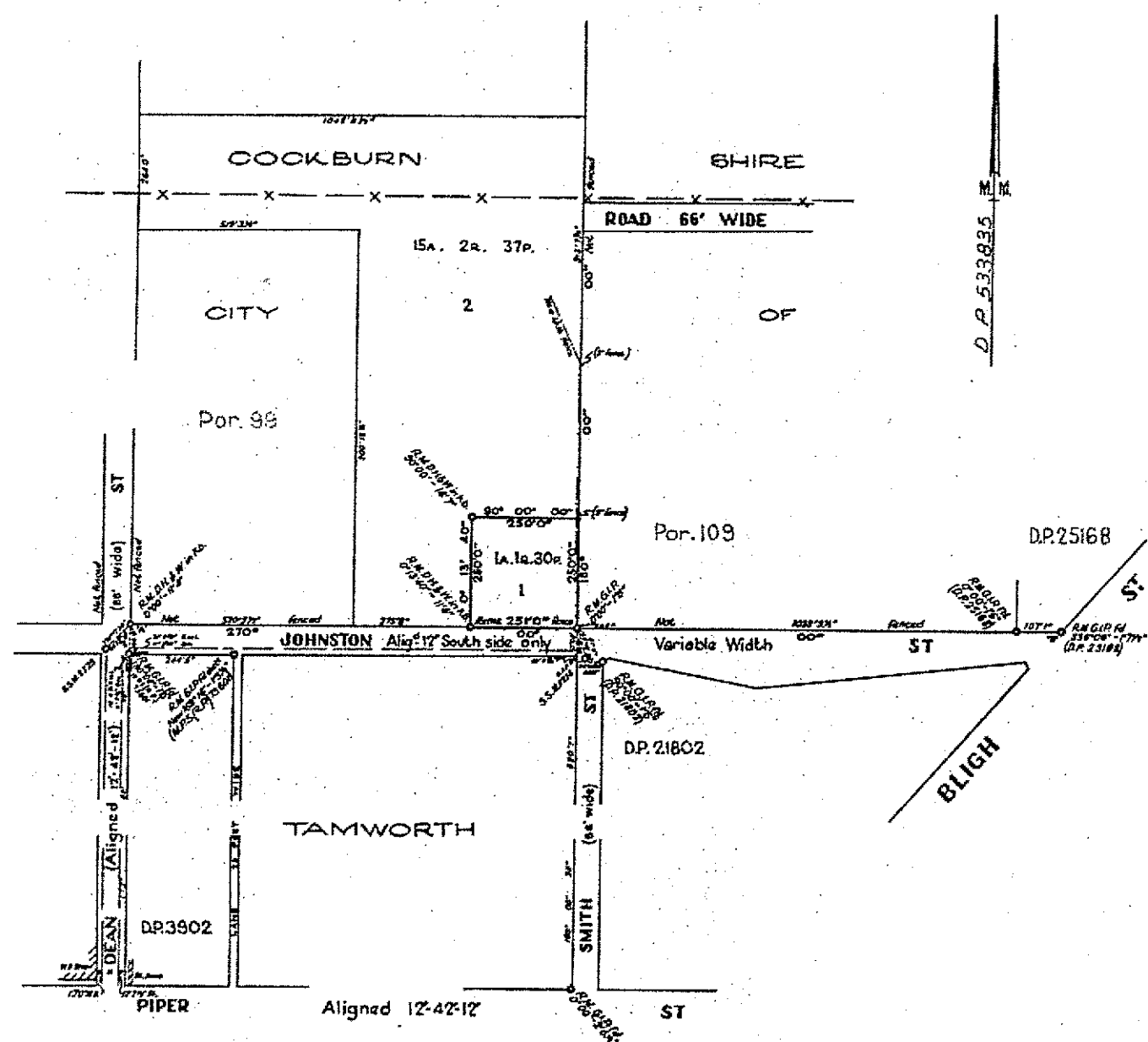
L. Belliver

CANCELLED
Jawatson
Registrar General.



PLAN SHOWING LOCATION OF LAND

SEE AUTO FOLIO



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 1 in Deposited Plan 533835 in the City of Tamworth Shire of Cockburn Parish of Tamworth and County of Inglis EXCEPTING THEREOUT the minerals reserved by the Crown Grant.

FIRST SCHEDULE

THE COMMONWEALTH OF AUSTRALIA.

SECOND SCHEDULE

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

Jawatson
Registrar General

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

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

(Page 1) Vol. 11118 Fol. 235

CT 27.10
(AMENDED)
CT 27.10
20.11.16

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT			ENTERED	Signature of Registrar General
	NATURE	NUMBER	DATE		
CANCELLED SEE AUTO FOLIO					

SECOND SCHEDULE (continued)

PARTICULARS	INSTRUMENT			ENTERED	Signature of Registrar General	CANCELLATION
	NATURE	NUMBER	DATE			

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

CLEROSSES 33(V) (19 & 012)									
MARK	M.G.A. CO-ORDINATES				ZONE	CLASS		METHOD	ORIGIN
	EASTING	NORTHING				ORDER			
SSM8223	302 541.660	6 560 096.508			56	C	3	F.d.	SCIMS
SSM8225	301 839.912	6 560 196.636			56	A	1	F.d.	SCIMS
SSM8242	302 584.570	6 560 154.964			56	C	3	F.d.	SCIMS
SSM153693	301 940.107	6 560 183.641			56	U	U	F.d.	Cadastral Traverse
PM77405	302 551.416	6 560 452.128			56	A	1	F.d.	SCIMS

SOURCE:	COMBINED SCALE FACTOR: 1.000012
M.G.A. CO-ORDINATES ADOPTED FROM S.C.I.M.S. AT 17.10.2012	

THE REGIONAL TAMWORTH	Registered: 15.1.2013	DP1181268
--------------------------	--------------------------	-----------


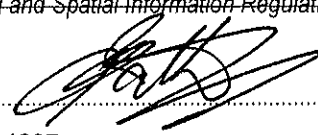
PLAN FORM 6 (2012)

WARNING: Creasing or folding will lead to rejection

ePlan

DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 1 of 2 Sheet(s)

<p style="text-align: right;">Office Use Only</p> <p>Registered:  15.1.2013</p> <p>Title System: TORRENS</p> <p>Purpose: ACQUISITION</p> <p>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</p> <p>Crown Lands NSW/Western Lands Office Approval</p> <p>I, (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given.</p> <p>Signature:</p> <p>Date:</p> <p>File Number:</p> <p>Office:</p>	<p style="text-align: right;">Office Use Only</p> <div style="text-align: center; font-size: 2em; font-weight: bold; margin-top: 20px;">DP1181268</div> <p>LGA: TAMWORTH REGIONAL</p> <p>Locality: North Tamworth</p> <p>Parish: Tamworth</p> <p>County: Inglis</p>																																			
<p style="text-align: center;">Subdivision Certificate</p> <p>I, *Authorised Person/*General Manager/*Accredited Certifier, certify that the provisions of s.109J of the <i>Environmental Planning and Assessment Act 1979</i> have been satisfied in relation to the proposed subdivision, new road or reserve set out herein.</p> <p>Signature:</p> <p>Accreditation number:</p> <p>Consent Authority: TAMWORTH REGIONAL COUNCIL</p> <p>Date of endorsement:</p> <p>Subdivision Certificate number:</p> <p>File number:</p> <p>*Strike through if inapplicable.</p>	<p style="text-align: center;">Survey Certificate</p> <p>I, DARYL JAMES BATH of BATH, STEWART ASSOCIATES Pty Ltd PO Box 403, Tamworth NSW 2340 (Tel: 02 6766-5966) a surveyor registered under the <i>Surveying and Spatial Information Act 2002</i>, certify that:</p> <p>*(a) The land shown in the plan was surveyed in accordance with the Surveying and Spatial Information Regulation 2012, is accurate and the survey was completed on</p> <p>*(b) The part of the land shown in the plan excluding part of Lot 9 was surveyed in accordance with the <i>Surveying and Spatial Information Regulation 2012</i>, is accurate and the survey was completed on, 20th November 2012. The part not surveyed was compiled in accordance with that Regulation.</p> <p>*(c) The land shown in this plan was compiled in accordance with the Surveying and Spatial Information Regulation 2012.</p> <p style="text-align: right;">Signature:  Dated: 22.11.2012 ...</p> <p>Surveyor ID: 1307</p> <p>Datum Line: SSM8225 – PM77405</p> <p>Type: Urban</p> <p>The terrain is *Level-Undulating / *Steep-Mountainous.</p> <p>*Strike through if inapplicable. ^Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.</p>																																			
<p>Statements of intention to dedicate public roads, public reserves and drainage reserves.</p> <p>IT IS INTENDED TO ACQUIRE LOTS 1 TO 5, INCLUSIVE, FOR THE PURPOSES OF THE HEALTH ADMINISTRATION ACT 1982, AS REFERRED TO BY NOTICE IN THE NSW GOVERNMENT GAZETTE No. 130 FOLIO 5244 DATED 21.12.2012.</p>	<p>Plans used in the preparation of survey/compilation.</p> <table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <tr> <td>DP12210</td> <td>DP533835</td> <td>DP1152231</td> <td>2861-1690</td> <td>46-1393</td> </tr> <tr> <td>DP21802</td> <td>DP602489</td> <td>DP1175412</td> <td>2134-1690</td> <td></td> </tr> <tr> <td>DP24811</td> <td>DP712550</td> <td>DP1180579</td> <td>2722-1690</td> <td></td> </tr> <tr> <td>DP25168</td> <td>DP809828</td> <td>1793-1690</td> <td>2724-1690</td> <td></td> </tr> <tr> <td>DP26205</td> <td>DP1076546</td> <td>2147-1690</td> <td>2596-1690</td> <td></td> </tr> <tr> <td>DP48401</td> <td>DP1099608</td> <td>2149-1690</td> <td>2796-1690</td> <td></td> </tr> <tr> <td>DP257195</td> <td>DP1118938</td> <td>2557-1690</td> <td>43-1393</td> <td></td> </tr> </table> <p style="text-align: center;">If space is insufficient continue on PLAN FORM 6A</p>	DP12210	DP533835	DP1152231	2861-1690	46-1393	DP21802	DP602489	DP1175412	2134-1690		DP24811	DP712550	DP1180579	2722-1690		DP25168	DP809828	1793-1690	2724-1690		DP26205	DP1076546	2147-1690	2596-1690		DP48401	DP1099608	2149-1690	2796-1690		DP257195	DP1118938	2557-1690	43-1393	
DP12210	DP533835	DP1152231	2861-1690	46-1393																																
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DP26205	DP1076546	2147-1690	2596-1690																																	
DP48401	DP1099608	2149-1690	2796-1690																																	
DP257195	DP1118938	2557-1690	43-1393																																	
<p>Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A</p>	<p>Surveyor's Reference: 12218V04</p>																																			

PLAN FORM 6A (2012)

WARNING: Creasing or folding will lead to rejection

ePlan

DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 2 of 2 Sheet(s)

Registered:



15.1.2013

Office Use Only

Office Use Only

**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**

Subdivision Certificate number:

Date of Endorsement:

DP1181268

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2012*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

Lot	Street Number	Street Name	Street Type	Locality
1	NA		Street	North Tamworth
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**



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

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 ***

advlegs

PRINTED ON 23/2/2021



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

23/2/2021 9:03AM

FOLIO: 1/1181268

First Title(s): VOL 5159 FOL 106 VOL 601 FOL 193
VOL 4517 FOL 90
Prior Title(s): 1-2/533835 99/753848
335/753848

Recorded	Number	Type of Instrument	C.T. Issue
15/1/2013	DP1181268	DEPOSITED PLAN	LOT RECORDED FOLIO NOT CREATED
24/6/2013	AH827345	DEPARTMENTAL DEALING	FOLIO CREATED EDITION 1
23/4/2014	DP1195542	DEPOSITED PLAN	
20/5/2015	AJ356883	TRANSFER GRANTING EASEMENT	EDITION 2
23/5/2017	AM412160	LEASE	EDITION 3
19/7/2018	AN471831	APPLICATION FOR RECORDING OF ACTION AFFECTING CROWN HOLDING	
4/8/2020	AQ294846	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

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PRINTED ON 23/2/2021



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

23/2/2021 9:03AM

FOLIO: 2/533835

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 ***

advlegs

PRINTED ON 23/2/2021



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

23/2/2021 9:03AM

FOLIO: 99/753848

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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PRINTED ON 23/2/2021



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

23/2/2021 9:03AM

FOLIO: 335/753848

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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PRINTED ON 23/2/2021



NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 1/1181268

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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PRINTED ON 23/2/2021

1976



1984



1989







Feb 2016

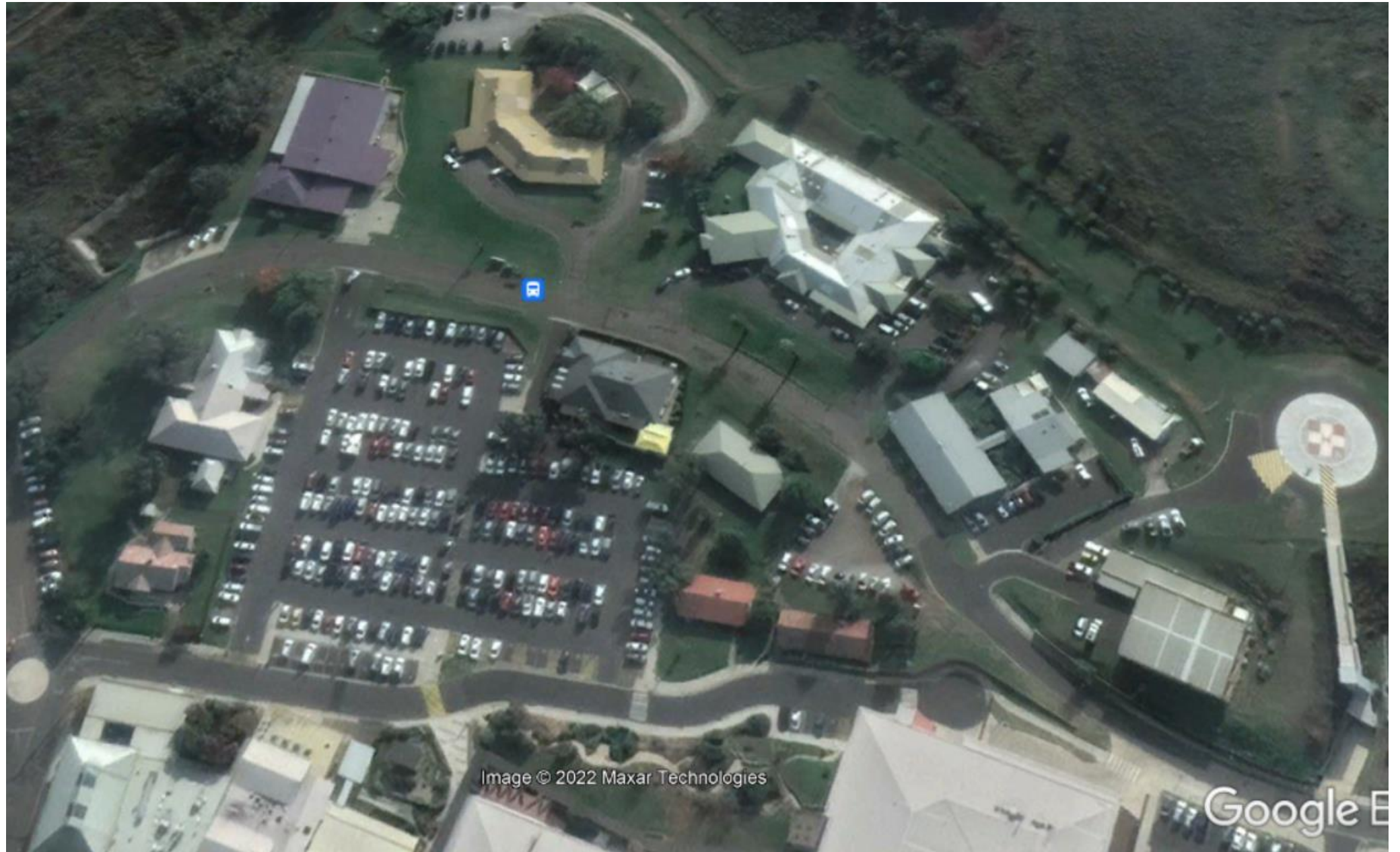


October 2016





2022





Appendix B

Results of Field Investigations



ENGINEERING LOG - BOREHOLE

BOREHOLE NO: **BH-CB1**

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 1
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 20/8/22

DRILL TYPE: Truck Mounted Drill Rig

EASTING: 301991 m



SURFACE RL:

BOREHOLE DIAMETER: 100 mm

INCLINATION: 90°

NORTHING: 6560578 m

DATUM: AHD

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations	
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
AD/T	Not Encountered	0.10m ES		<div><div></div><div>0.5</div><div>1.0</div><div>1.5</div><div>2.0</div><div>2.5</div><div>3.0</div><div>3.5</div><div>4.0</div><div>4.5</div></div>		GC	0.04m ASPHALT	D	D	HP	300 - 350	WEARING SURFACE FILL-PAVEMENT	
		0.40m			CH	0.30m FILL: Sandy Clayey GRAVEL, fine to medium grained, angular gravel, fine to medium grained sand	M > w _p	St - VSt	COLLUVIUM				
		0.50m ES											
		SPT 7,5,7 N=12											
		0.95m											
		2.00m											
		SPT 12,15,22 N=37											
		2.45m											
		3.50m											
		SPT 12,20,25 N=45											
3.95m			4.0			3.95m	Hole Terminated at 3.95 m						



ENGINEERING LOG - BOREHOLE

BOREHOLE NO: BH-CB2

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 1
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 20/8/22

DRILL TYPE: Truck Mounted Drill Rig**EASTING:** 301964 m**SURFACE RL:****BOREHOLE DIAMETER:** 100 mm**INCLINATION:** 90°**NORTHING:** 6560579 m**DATUM:** AHD

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
AD/T	Not Encountered	0.10m ES				GC	0.04m ASPHALT	D	D			WEARING SURFACE FILL-PAVEMENT
		0.50m		0.5		CI	0.40m FILL: Sandy GRAVEL, fine to medium grained, pale brown, with some clay, fine to medium grained sand, angular gravel					
		0.60m					CLAY: Medium plasticity, brown, with some gravel, fine to medium grained, angular	M < w _p	H			COLLUVIUM
		8,10,17 N=27										
		0.95m		1.0			1.00m Hole Terminated at 1.00 m					
				1.5								
				2.0								
				2.5								
				3.0								
				3.5								
				4.0								
				4.5								

LEGEND:**Water**

- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes

- Gradational or transitional strata
- Definitive or distinct strata change

Notes, Samples and Tests

- U₅₀ 50mm Diameter tube sample
- CBR Bulk sample for CBR testing
- E Environmental sample
- ASS Acid Sulfate Soil Sample
- B Bulk Sample

Field Tests

- PID Photoionisation detector reading (ppm)
- DCP(x-y) Dynamic penetrometer test (test depth interval shown)
- HP Hand Penetrometer test (UCS kPa)

Consistency

- VS Very Soft
- S Soft
- F Firm
- St Stiff
- VSt Very Stiff
- H Hard
- Fb Friable

UCS (kPa)

- <25
- 25 - 50
- 50 - 100
- 100 - 200
- 200 - 400
- >400

Moisture Condition

- D Dry
- M Moist
- W Wet
- W_p Plastic Limit
- W_L Liquid Limit

Density

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









- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%

BOREHOLE NO: **BH-CB3**

PAGE: 1 of 3
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 20/8/22




SURFACE RL:

DATUM: AHD

Drilling and Sampling				Material description and profile information						Field Test		Structure and additional observations	
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
AD/T	Not Encountered	0.10m ES				GC	0.04m ASPHALT FILL: Sandy Clayey GRAVEL, fine to medium grained, pale brown, fine to coarse grained sand, angular gravel					WEARING SURFACE FILL-PAVEMENT	
		0.50m 0.60m SPT 5,9,13 N=22		0.5		CI	0.40m CLAY: Medium plasticity, brown, with some gravel, fine grained, angular	M < w _p	VSt - H			COLLUVIUM	
		0.95m		1.0									
		2.00m SPT 9,13,13 N=26		2.0									
		2.45m		2.5								High moisture at 2.2m	
		3.50m SPT 9,18,25 N=43		3.0								High drilling resistance at 2.6m, possible boulder	
		3.95m		3.5									
		5.00m		4.0									
						3.10m	CI	Silty CLAY: Medium plasticity, brown, pale brown, grey, with some fine to medium grained angular gravel		H / Fr			RESIDUAL

LEGEND:

Water

-  Water Level
 (Date and time shown)
 Water Inflow
 Water Outflow

Strata Changes

- — Gradational or transitional strata
—— Definitive or distinct strata change

		X		
Notes, Samples and Tests				

- | | |
|-----------------|-----------------------------|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample |
| ASS | Acid Sulfate Soil Sample |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

Consistency

- | | |
|-----|------------|
| VS | Very Soft |
| S | Soft |
| F | Firm |
| St | Stiff |
| VSt | Very Stiff |
| H | Hard |
| Fb | Friable |

UCS (kPa)

- <25
25 - 50
50 - 100
100 - 200
200 - 400
>400

Moisture Condition

- | | |
|-------|---------------|
| D | Dry |
| M | Moist |
| W | Wet |
| W_p | Plastic Limit |
| W_L | Liquid Limit |

Density

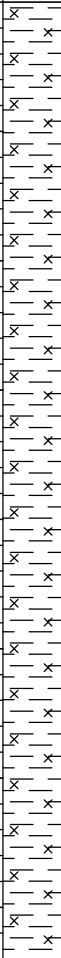
- | Density | | | |
|----------------|--------------|---------------|-----------|
| V | Very Loose | Density Index | <15% |
| L | Loose | Density Index | 15 - 35% |
| MD | Medium Dense | Density Index | 35 - 65% |
| D | Dense | Density Index | 65 - 85% |
| VD | Very Dense | Density Index | 85 - 100% |

BOREHOLE NO: **BH-CB3**

PAGE: 2 of 3
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 20/8/22




SURFACE RL:

DATUM: AHD

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
AD/T	Not Encountered	SPT 18,25/110mm N=R		<div><div>5.0</div><div>5.5</div><div>6.0</div><div>6.5</div><div>7.0</div><div>7.5</div><div>8.0</div><div>8.5</div></div>		CI	Silty CLAY: Medium plasticity, brown, pale brown, grey, with some fine to medium grained angular gravel (<i>continued</i>)	M < w _p	H / Fr	HP	>600	
		5.26m										
		6.50m										
		SPT 15,30 N=R										
		6.80m										
				8.70m			Continued as Cored Drill Hole					
				9.0								
				9.5								

LEGEND:

Water

-  Water Level
(Date and time shown)
-  Water Inflow
-  Water Outflow

Strata Changes

- — Gradational or transitional strata
—— Definitive or distinct strata change

Notes, Samples and Tests

- | | |
|-----------------|-----------------------------|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample |
| ASS | Acid Sulfate Soil Sample |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

Consistency

- | | | |
|-----|------------|-----------|
| VS | Very Soft | <25 |
| S | Soft | 25 - 50 |
| F | Firm | 50 - 100 |
| St | Stiff | 100 - 200 |
| VSt | Very Stiff | 200 - 400 |
| H | Hard | >400 |
| Fb | Friable | |

Density

- | Density | | | |
|---------|--------------|---------------|-----------|
| V | Very Loose | Density Index | <15% |
| L | Loose | Density Index | 15 - 35% |
| MD | Medium Dense | Density Index | 35 - 65% |
| D | Dense | Density Index | 65 - 85% |
| V | Very Dense | Density Index | 85 - 100% |

BOREHOLE NO **BH-CB3**

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: Page 3 of 3
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 20/8/22

DRILL TYPE: Truck Mounted Drill Rig

EASTING: 301948 m

SURFACE RL:

BOREHOLE DIAMETER: 100 mm

INCLINATION: 90°

NORTHING: 6560580 m

DATUM: AHD

[illegible]



ENGINEERING LOG - BOREHOLE

BOREHOLE NO: **BH-CB4**

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 1
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 20/8/22

DRILL TYPE: Truck Mounted Drill Rig
BOREHOLE DIAMETER: 100 mm
INCLINATION: 90°
EASTING: 301987 m
NORTHING: 6560543 m
SURFACE RL: AHD
DATUM: AHD

Drilling and Sampling				Material description and profile information				Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	
AD/T	Not Encountered	0.10m ES				GC	0.04m ASPHALT			WEARING SURFACE FILL-PAVEMENT
		0.50m 0.60m SPT 4,7,11 N=18		0.5		CI	0.45m Silty CLAY: Medium plasticity, mottled brown, grey, black, with some fine grained angular gravel and ironstone	M < w _p	St - VSt H / Fr	HP 550
		0.95m		1.0						
		2.00m		2.0						
		SPT 6,12,18 N=30		2.5						
		2.45m		3.0			3.00m			
				3.5			Hole Terminated at 3.00 m			
				4.0						
				4.5						
LEGEND: Water Water Level (Date and time shown) Water Inflow Water Outflow Strata Changes Gradational or transitional strata Definitive or distinct strata change				Notes, Samples and Tests U ₅₀ 50mm Diameter tube sample CBR Bulk sample for CBR testing E Environmental sample ASS Acid Sulfate Soil Sample B Bulk Sample Field Tests PID Photoionisation detector reading (ppm) DCP(x-y) Dynamic penetrometer test (test depth interval shown) HP Hand Penetrometer test (UCS kPa)				Consistency VS Very Soft <25 S Soft 25 - 50 F Firm 50 - 100 St Stiff 100 - 200 VSt Very Stiff 200 - 400 H Hard >400 Fb Friable Density V Very Loose L Loose MD Medium Dense D Dense VD Very Dense		UCS (kPa) Moisture Condition D Dry M Moist W Wet W _p Plastic Limit W _L Liquid Limit Density Index <15% Density Index 15 - 35% Density Index 35 - 65% Density Index 65 - 85% Density Index 85 - 100%



ENGINEERING LOG - BOREHOLE

BOREHOLE NO: BH-CB5

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 1
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 20/8/22

DRILL TYPE: Truck Mounted Drill Rig**EASTING:** 302006 m**SURFACE RL:****BOREHOLE DIAMETER:** 100 mm**INCLINATION:** 90°**NORTHING:** 6560541 m**DATUM:** AHD

Drilling and Sampling				Material description and profile information				Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	
AD/T	Not Encountered	0.10m ES				GC	0.04m ASPHALT	D	D	WEARING SURFACE FILL-PAVEMENT
		0.40m					FILL: Sandy Clayey GRAVEL, fine to medium grained, pale grey, fine to coarse grained sand, angular gravel			
		0.50m		0.5		CI	0.50m Gravelly CLAY: Medium plasticity, brown, grey	M < w _p	H / Fr	COLLUVIUM
		15.25/100mm N=R								
		0.75m		1.0			1.00m			
							Hole Terminated at 1.00 m			
				1.5						
				2.0						
				2.5						
				3.0						
				3.5						
				4.0						
				4.5						

LEGEND:**Water**

- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes

- Gradational or transitional strata
- Definitive or distinct strata change

Notes, Samples and Tests

- U₅₀ 50mm Diameter tube sample
- CBR Bulk sample for CBR testing
- E Environmental sample
- ASS Acid Sulfate Soil Sample
- B Bulk Sample

Field Tests

- PID Photoionisation detector reading (ppm)
- DCP(x-y) Dynamic penetrometer test (test depth interval shown)
- HP Hand Penetrometer test (UCS kPa)

Consistency

- VS Very Soft
- S Soft
- F Firm
- St Stiff
- VSt Very Stiff
- H Hard
- Fb Friable

UCS (kPa)

- <25
- 25 - 50
- 50 - 100
- 100 - 200
- 200 - 400
- >400

Moisture Condition

- D Dry
- M Moist
- W Wet
- W_p Plastic Limit
- W_L Liquid Limit

Density

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

- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%

BOREHOLE NO: **BH-CB6**

PAGE: 1 of 1
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 20/8/22




SURFACE RL:

DATUM: AHD

[illegible]

LEGEND:

Water

-  Water Level
 (Date and time shown)
-  Water Inflow
-  Water Outflow

Strata Changes

- — Gradational or transitional strata
- Definitive or distinct strata change

Notes, Samples and Tests

- | | |
|-----------------|-----------------------------|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample |
| ASS | Acid Sulfate Soil Sample |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

Consistency

- | | | |
|-----|------------|-----------|
| VS | Very Soft | <25 |
| S | Soft | 25 - 50 |
| F | Firm | 50 - 100 |
| St | Stiff | 100 - 200 |
| VSt | Very Stiff | 200 - 400 |
| H | Hard | >400 |
| Fb | Friable | |

Density

- | <u>Density</u> | | | |
|----------------|--------------|---------------|-----------|
| V | Very Loose | Density Index | <15% |
| L | Loose | Density Index | 15 - 35% |
| MD | Medium Dense | Density Index | 35 - 65% |
| D | Dense | Density Index | 65 - 85% |
| VD | Very Dense | Density Index | 85 - 100% |



ENGINEERING LOG - BOREHOLE

BOREHOLE NO: **BH-CB7**

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 1
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 20/8/22

DRILL TYPE: Truck Mounted Drill Rig

EASTING: 302023 m

SURFACE RL:

BOREHOLE DIAMETER: 100 mm

INCLINATION: 90°

NORTHING: 6560509 m

DATUM: AHD

Drilling and Sampling				Material description and profile information				Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	
AD/T	Not Encountered	0.10m ES				GC	0.06m ASPHALT	D	D	WEARING SURFACE
		0.50m		0.5		CI	0.45m FILL: Sandy Clayey GRAVEL, fine to medium grained, pale grey, fine to medium grained sand, angular gravel			FILL-PAVEMENT
		SPT 24,25 N=R					CLAY: Medium plasticity, red-brown, with some gravel, fine grained, angular	M < w _p	H / Fr	COLLUVIUM
		0.80m		1.0						
				1.5						
				2.0		CI	1.70m Gravelly CLAY: Medium plasticity, grey, brown, fine to medium grained, angular gravel			
				2.5						
				3.0			3.00m			
		2.60m								
		SPT 16 25,25/100mm N=R								
		3.00m					Hole Terminated at 3.00 m			
				3.5						
				4.0						
				4.5						

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
Water		U ₅₀ 50mm Diameter tube sample		VS	Very Soft	<25	D	Dry
Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S	Soft	25 - 50	M	Moist
Water Inflow		E Environmental sample		F	Firm	50 - 100	W	Wet
Water Outflow		ASS Acid Sulfate Soil Sample		St	Stiff	100 - 200	W _p	Plastic Limit
Strata Changes		B Bulk Sample		VSt	Very Stiff	200 - 400	W _L	Liquid Limit
Gradational or transitional strata		Field Tests		H	Hard	>400		
Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb	Friable			
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density	V	Very Loose	Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)			L	Loose	Density Index 15 - 35%	
					MD	Medium Dense	Density Index 35 - 65%	
					D	Dense	Density Index 65 - 85%	
					VD	Very Dense	Density Index 85 - 100%	



ENGINEERING LOG - BOREHOLE

BOREHOLE NO: BH-CB8

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 1
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 20/8/22

DRILL TYPE: Truck Mounted Drill Rig**EASTING:** 302008 m**SURFACE RL:****BOREHOLE DIAMETER:** 100 mm**INCLINATION:** 90°**NORTHING:** 6560513 m**DATUM:** AHD

Drilling and Sampling				Material description and profile information				Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	
AD/T	Not Encountered	0.60m SPT 10,20,25 N=45		0.5		GC	0.04m ASPHALT FILL: Sandy Clayey GRAVEL, fine to medium grained, pale grey, fine to medium grained sand, angular gravel	D	D	WEARING SURFACE FILL-PAVEMENT
				1.0		CI	0.45m CLAY: Medium plasticity, red-brown, with some gravel, fine grained, angular	M < w _p	H	COLLUVIUM
		1.05m		1.0			Hole Terminated at 1.00 m			
				1.5						
				2.0						
				2.5						
				3.0						
				3.5						
				4.0						
				4.5						

LEGEND:**Water**

- Water Level
(Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes

- Gradational or transitional strata
- Definitive or distinct strata change

Notes, Samples and Tests

- U₅₀ 50mm Diameter tube sample
- CBR Bulk sample for CBR testing
- E Environmental sample
- ASS Acid Sulfate Soil Sample
- B Bulk Sample

Field Tests

- PID Photoionisation detector reading (ppm)
- DCP(x-y) Dynamic penetrometer test (test depth interval shown)
- HP Hand Penetrometer test (UCS kPa)

Consistency

- VS Very Soft
- S Soft
- F Firm
- St Stiff
- VSt Very Stiff
- H Hard
- Fb Friable

UCS (kPa)

- <25
- 25 - 50
- 50 - 100
- 100 - 200
- 200 - 400
- >400

Moisture Condition

- D Dry
- M Moist
- W Wet
- W_p Plastic Limit
- W_L Liquid Limit

Density

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

- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%



ENGINEERING LOG - BOREHOLE

BOREHOLE NO: **BH-CB9**

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 1
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 20/8/22

DRILL TYPE: Truck Mounted Drill Rig

EASTING: 301989 m

SURFACE RL:

BOREHOLE DIAMETER: 100 mm

INCLINATION: 90°

NORTHING: 6560515 m

DATUM: AHD

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
AD/T	Not Encountered					GC	0.05m ASPHALT	D	D			WEARING SURFACE
		0.50m		0.5		CH	0.45m FILL: Sandy Clayey GRAVEL, fine to medium grained, grey, fine to medium grained sand, angular gravel CLAY: Medium to high plasticity, red-brown, with some gravel, fine grained, angular			HP	450	FILL-PAVEMENT
		SPT 9,10,12 N=22		1.0			0.95m			HP	500	COLLUVIUM
		0.95m		1.0			Hole Terminated at 0.95 m					
				1.5								
				2.0								
				2.5								
				3.0								
				3.5								
				4.0								
				4.5								

LEGEND:

Water

- Water Level
(Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes

- Gradational or transitional strata
- Definitive or distinct strata change

Notes, Samples and Tests

- U₅₀ 50mm Diameter tube sample
- CBR Bulk sample for CBR testing
- E Environmental sample
- ASS Acid Sulfate Soil Sample
- B Bulk Sample

Field Tests

- PID Photoionisation detector reading (ppm)
- DCP(x-y) Dynamic penetrometer test (test depth interval shown)
- HP Hand Penetrometer test (UCS kPa)

Consistency

- VS Very Soft
- S Soft
- F Firm
- St Stiff
- VSt Very Stiff
- H Hard
- Fb Friable

UCS (kPa)

- <25
- 25 - 50
- 50 - 100
- 100 - 200
- 200 - 400
- >400

Moisture Condition

- D Dry
- M Moist
- W Wet
- W_p Plastic Limit
- W_L Liquid Limit

Density

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

- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%



ENGINEERING LOG - BOREHOLE

BOREHOLE NO **BH-CB11**

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 1
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 21/8/22

DRILL TYPE: Truck Mounted Drill Rig

EASTING: 301961 m

SURFACE RL:

BOREHOLE DIAMETER: 100 mm

INCLINATION: 90°

NORTHING: 6560516 m

DATUM: AHD

Drilling and Sampling				Material description and profile information				Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	
AD/T	Not Encountered	0.40m 0.50m 0.60m ES B		0.5		GC	ASPHALT FILL: Sandy Clayey GRAVEL, fine to medium grained, pale grey, fine to medium grained sand, angular gravel	D	D	WEARING SURFACE FILL-PAVEMENT
		1.00m		1.0		CI	Sandy CLAY: Medium plasticity, red-brown, with some gravel, fine grained, angular, fine to medium grained sand	M < w _p	H / Fr	COLLUVIUM
		1.50m SPT 23,25,30 N=55 1.95m 3.00m SPT 30/100mm N=R 3.10m		1.5 2.0 2.5 3.0 3.5 4.0 4.5			Hole Terminated at 1.00 m			

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
Water		U ₅₀ 50mm Diameter tube sample		VS	Very Soft	<25	D	Dry
Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S	Soft	25 - 50	M	Moist
Water Inflow		E Environmental sample		F	Firm	50 - 100	W	Wet
Water Outflow		ASS Acid Sulfate Soil Sample		St	Stiff	100 - 200	w _p	Plastic Limit
Strata Changes		B Bulk Sample		VSt	Very Stiff	200 - 400	w _L	Liquid Limit
Gradational or transitional strata		Field Tests		H	Hard	>400		
Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb	Friable			
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density	V	Very Loose	Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)			L	Loose	Density Index 15 - 35%	
					MD	Medium Dense	Density Index 35 - 65%	
					D	Dense	Density Index 65 - 85%	
					VD	Very Dense	Density Index 85 - 100%	





ENGINEERING LOG - BOREHOLE

BOREHOLE NO **BH-CB12**

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1




PAGE: 1 of 1
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 21/8/22

DRILL TYPE: Truck Mounted Drill Rig
BOREHOLE DIAMETER: 100 mm
INCLINATION: 90°
EASTING: 301936 m
NORTHING: 6560519 m
SURFACE RL: AHD
DATUM: AHD



Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
AD/T	Not Encountered					GC	0.03m ASPHALT	D	D			WEARING SURFACE FILL-PAVEMENT
		0.50m		0.5		CH	0.40m FILL: Sandy Clayey GRAVEL, fine to medium grained, pale grey, fine to medium grained sand, angular gravel Sandy CLAY: Medium to high plasticity, grey, with trace gravel, fine grained, angular	M > w _p	St	HP	110	COLLUVIUM
		SPT 4,2,3 N=5		1.0						HP	150	
		1.00m 0.95m U 1.30m		1.30		1.30m				HP	140	
				1.5			Hole Terminated at 1.30 m					
				2.0								
				2.5								
				3.0								
				3.5								
				4.0								
				4.5								

LEGEND:

Water

-  Water Level (Date and time shown)
-  Water Inflow
-  Water Outflow

Strata Changes

-  Gradational or transitional strata
-  Definitive or distinct strata change

Notes, Samples and Tests

U₅₀ 50mm Diameter tube sample
CBR Bulk sample for CBR testing
E Environmental sample
ASS Acid Sulfate Soil Sample
B Bulk Sample

Field Tests

PID Photoionisation detector reading (ppm)
DCP(x-y) Dynamic penetrometer test (test depth interval shown)
HP Hand Penetrometer test (UCS kPa)

Consistency

VS Very Soft
S Soft
F Firm
St Stiff
VSt Very Stiff
H Hard
Fb Friable

UCS (kPa)

<25
25 - 50
50 - 100
100 - 200
200 - 400
>400

Moisture Condition

D Dry
M Moist
W Wet
W_p Plastic Limit
W_L Liquid Limit

Density

V Very Loose
L Loose
MD Medium Dense
D Dense
VD Very Dense

Density Index <15%
Density Index 15 - 35%
Density Index 35 - 65%
Density Index 65 - 85%
Density Index 85 - 100%




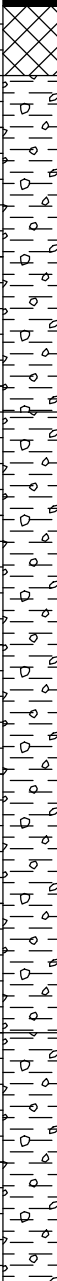
ENGINEERING LOG - BOREHOLE

BOREHOLE NO **BH-CB13**

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 3
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 21/8/22

DRILL TYPE: Truck Mounted Drill Rig
BOREHOLE DIAMETER: 100 mm
INCLINATION: 90°
EASTING: 301950 m
NORTHING: 6560338 m
SURFACE RL: AHD

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations				
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result					
AD/T	Not Encountered	0.05m ES				GC	0.03m ASPHALT	D	D		HP HP	350 350	WEARING SURFACE FILL-PAVEMENT			
		0.10m ES				0.30m FILL: Sandy Clayey GRAVEL , fine to medium grained, grey, fine to medium grained sand, angular gravel	M > w _p	VSt	COLLUVIUM							
		0.30m			0.40m ES									CI	1.60m Gravelly CLAY: Medium plasticity, mottled red-brown, pale brown	M < w _p
		0.40m ES				0.50m ES			CI				4.00m Gravelly CLAY: Medium plasticity, pale grey, brown, fine to medium grained, angular gravel			
		0.50m ES			SPT 5,10,4 N=14									CI		
		0.95m				SPT 10,12,13 N=25			CI							
		2.00m			SPT 12,17,22 N=39									CI		
		2.45m				SPT 12,17,22 N=39			CI							
		3.50m			SPT 12,17,22 N=39									CI		
		3.95m				SPT 12,17,22 N=39			CI							
5.00m			SPT 12,17,22 N=39				CI									

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
Water		U ₅₀ 50mm Diameter tube sample		VS	Very Soft	<25	D	Dry
Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S	Soft	25 - 50	M	Moist
Water Inflow		E Environmental sample		F	Firm	50 - 100	W	Wet
Water Outflow		ASS Acid Sulfate Soil Sample		St	Stiff	100 - 200	W _p	Plastic Limit
Strata Changes		B Bulk Sample		VSt	Very Stiff	200 - 400	W _L	Liquid Limit
Gradational or transitional strata		Field Tests		H	Hard	>400		
Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb	Friable			
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density		V	Very Loose	Density Index <15%
		HP Hand Penetrometer test (UCS kPa)		L		L	Loose	Density Index 15 - 35%
				MD		MD	Medium Dense	Density Index 35 - 65%
				D		D	Dense	Density Index 65 - 85%
				VD		VD	Very Dense	Density Index 85 - 100%



ENGINEERING LOG - BOREHOLE

BOREHOLE NO **BH-CB13**

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: 2 of 3
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 21/8/22

DRILL TYPE: Truck Mounted Drill Rig EASTING: 301950 m SURFACE RL:
BOREHOLE DIAMETER: 100 mm INCLINATION: 90° NORTHING: 6560338 m DATUM: AHD

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
AD/T	Not Encountered	SPT 25/50mm N=R 5.05m				CI	Gravelly CLAY: Medium plasticity, pale grey, brown, fine to medium grained, angular gravel (<i>continued</i>)	M < w _p	H / Fr			
				6.5			Continued as Cored Drill Hole					
				7.0								
				7.5								
				8.0								
				8.5								
				9.0								
				9.5								

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
Water		U ₅₀ 50mm Diameter tube sample		VS	Very Soft	<25	D	Dry
Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S	Soft	25 - 50	M	Moist
Water Inflow		E Environmental sample		F	Firm	50 - 100	W	Wet
Water Outflow		ASS Acid Sulfate Soil Sample		St	Stiff	100 - 200	W _p	Plastic Limit
Strata Changes		B Bulk Sample		VSt	Very Stiff	200 - 400	W _L	Liquid Limit
Gradational or transitional strata		Field Tests		H	Hard	>400		
Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb	Friable			
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density	V	Very Loose	Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)			L	Loose	Density Index 15 - 35%	
					MD	Medium Dense	Density Index 35 - 65%	
					D	Dense	Density Index 65 - 85%	
					VD	Very Dense	Density Index 85 - 100%	



ENGINEERING LOG - CORED BOREHOLE

BOREHOLE NO: **BH-CB13**

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: Page 3 of 3
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 21/8/22

DRILL TYPE: Truck Mounted Drill Rig
BOREHOLE DIAMETER: 100 mm INCLINATION: 90°
EASTING: 301950 m SURFACE RL:
NORTHING: 6560338 m DATUM: AHD

Drilling and Sampling				Material description and profile information				Testing		Rock Mass Defects		
METHOD	WATER	RL Not measured	DEPTH (m)	GRAPHIC LOG	Material Description: Rock type, particle characteristics, colour, minor components, structure	WEATHERING	ESTIMATED STRENGTH	$I_{s(50)}$ D/A	RQD %	Defect Spacing mm	Defect Description: Type, inclination, planarity, roughness, coating, thickness	
			5.5 <									

BOREHOLE NO **BH-CB14**

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 1
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 21/8/22

DRILL TYPE: Truck Mounted Drill Rig

EASTING: 301965 m

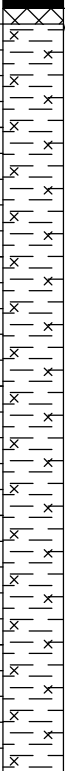
SURFACE RL:

BOREHOLE DIAMETER: 100 mm

INCLINATION: 90°




NORTHING: 6560528 m

DATUM: AHD

Drilling and Sampling					Material description and profile information						Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
AD/T	Not Encountered	0.10m ES				CI CI	0-0.04m 0.10m ASPHALT	$M < w_p$	H H / Fr			WEARING SURFACE	
		0.50m		FILL: CLAY, medium plasticity, brown, with some gravel, fine grained, angular	FILL								
		SPT 12,13,15 N=28		Silty CLAY: Medium plasticity, brown, pale brown, grey	COLLUVIUM								
		0.95m											
		2.60m											
		SPT 9,18,25/100mm N=R											
		3.00m											
		3.00m	Hole Terminated at 3.00 m										
		3.00m											
				3.5									
				4.0									
				4.5									

LEGEND:

Water

-  Water Level
 (Date and time shown)
 Water Inflow
 Water Outflow

Strata Changes

- — Gradational or transitional strata
—— Definitive or distinct strata change

Notes, Samples and Tests

- | | |
|-----------------|-----------------------------|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample |
| ASS | Acid Sulfate Soil Sample |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

Consistency

- | | |
|-----|------------|
| VS | Very Soft |
| S | Soft |
| F | Firm |
| St | Stiff |
| VSt | Very Stiff |
| H | Hard |
| Fb | Friable |

UCS (kPa)

- <25
25 - 50
50 - 100
100 - 200
200 - 400
>400

Moisture Condition

- | | |
|-------|---------------|
| D | Dry |
| M | Moist |
| W | Wet |
| W_p | Plastic Limit |
| W_l | Liquid Limit |

Density

- | <u>Density</u> | | | |
|----------------|--------------|-------------------------|--|
| V | Very Loose | Density Index <15% | |
| L | Loose | Density Index 15 - 35% | |
| MD | Medium Dense | Density Index 35 - 65% | |
| D | Dense | Density Index 65 - 85% | |
| VD | Very Dense | Density Index 85 - 100% | |

BOREHOLE NO **BH-CB15**

PAGE: 1 of 1
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 21/8/22




SURFACE RL:

DATUM: AHD

[illegible]

LEGEND:

Water

-  Water Level
(Date and time shown)
-  Water Inflow
-  Water Outflow

Strata Changes

- — Gradational or transitional strata
—— Definitive or distinct strata change

Notes, Samples and Tests

- | | |
|-----------------|-----------------------------|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample |
| ASS | Acid Sulfate Soil Sample |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

Consistency

- | | |
|-----|------------|
| VS | Very Soft |
| S | Soft |
| F | Firm |
| St | Stiff |
| VSt | Very Stiff |
| H | Hard |
| Fb | Friable |

UCS (kPa)

- <25
25 - 50
50 - 100
100 - 200
200 - 400
>400

Moisture Condition

- | | |
|-------|---------------|
| D | Dry |
| M | Moist |
| W | Wet |
| W_p | Plastic Limit |
| W_l | Liquid Limit |

Density

- | <u>Density</u> | | | |
|----------------|--------------|---------------|-----------|
| V | Very Loose | Density Index | <15% |
| L | Loose | Density Index | 15 - 35% |
| MD | Medium Dense | Density Index | 35 - 65% |
| D | Dense | Density Index | 65 - 85% |
| VD | Very Dense | Density Index | 85 - 100% |



ENGINEERING LOG - BOREHOLE

BOREHOLE NO **BH-CB16**

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 3
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 21/8/22

DRILL TYPE: Truck Mounted Drill Rig

EASTING: 301981 m



SURFACE RL:






BOREHOLE DIAMETER: 100 mm

INCLINATION: 90°

NORTHING: 6560551 m

DATUM: AHD

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
AD/T	Not Encountered	0.05m				GC	0.04m ASPHALT FILL: Sandy Clayey GRAVEL, fine to medium grained, pale brown					WEARING SURFACE Two layers of asphalt coating FILL-PAVEMENT COLLUVIUM
		0.50m		0.5		CH	0.30m CLAY: Medium to high plasticity, grey-brown, with some gravel, fine grained, angular	M < w _p	St - VSt	HP HP	350	
		ES									350	
		SPT 4,6,12 N=18										
		1.00m		1.0								
		0.95m										
		1.5		CI	1.50m Sandy CLAY: Medium plasticity, mottled red-brown, brown, grey, fine to medium grained sand, with some gravel, fine to medium grained, angular		H / Fr					
		2.00m		2.0						HP	>600	
		SPT 9,17,25/100mm N=R										
		2.40m		2.5								
				3.0			3.00m					
							Continued as Cored Drill Hole					
				3.5								
				4.0								
				4.5								

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
Water				VS	Very Soft	<25	D	Dry
	Water Level	U ₅₀	50mm Diameter tube sample	S	Soft	25 - 50	M	Moist
	(Date and time shown)	CBR	Bulk sample for CBR testing	F	Firm	50 - 100	W	Wet
	Water Inflow	E	Environmental sample	St	Stiff	100 - 200	W _p	Plastic Limit
	Water Outflow	ASS	Acid Sulfate Soil Sample	VSt	Very Stiff	200 - 400	W _L	Liquid Limit
		B	Bulk Sample	H	Hard	>400		
				Fb	Friable			
Strata Changes		Field Tests		Density				
	Gradational or transitional strata	PID	Photoionisation detector reading (ppm)	V	Very Loose		Density Index <15%	
	Definitive or distinct strata change	DCP(x-y)	Dynamic penetrometer test (test depth interval shown)	L	Loose		Density Index 15 - 35%	
		HP	Hand Penetrometer test (UCS kPa)	MD	Medium Dense		Density Index 35 - 65%	
				D	Dense		Density Index 65 - 85%	
				VD	Very Dense		Density Index 85 - 100%	



ENGINEERING LOG - CORED BOREHOLE

BOREHOLE NO: **BH-CB16**

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: Page 3 of 3
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 21/8/22

DRILL TYPE: Truck Mounted Drill Rig
BOREHOLE DIAMETER: 100 mm
INCLINATION: 90°
EASTING: 301981 m
NORTHING: 6560551 m
SURFACE RL: AHD
DATUM: AHD

Drilling and Sampling				Material description and profile information				Testing	Rock Mass Defects		
METHOD	WATER	RL Not measured	DEPTH (m)	GRAPHIC LOG	Material Description: Rock type, particle characteristics, colour, minor components, structure	WEATHERING	ESTIMATED STRENGTH	$I_{s(50)}$ D/A	RQD %	Defect Spacing mm	Defect Description: Type, inclination, planarity, roughness, coating, thickness
NMLC			5.5		COLLUVIAL SOIL: Gravelly CLAY, medium plasticity, red-brown, pale brown, fine to medium grained gravel, angular (<i>continued</i>)				100		
			6.0		Hole Terminated at 5.90 m						
			6.5								
			7.0								
			7.5								
			8.0								
			8.5								
			9.0								
			9.5								

LEGEND:
Method
WB Wash Bore
RR Rock Roller
CB Claw or Blad Bit
NMLC NMLC Core
NQ,HQ,PQ Wireline Coring

Bedding
Laminated <20mm
Thinly Bedded 20-200mm
Medium Bedded 200-600mm
Thickly Bedded 600-2000mm
Very Thickly Bedded 2000mm
Massive No Visible Bedding

Degree of Fracturing
Fragmented <20mm
Highly Fractured 20mm to 40mm
Fractured 40mm to 200mm
Slightly Fractured 200mm to 1000mm

Weathering
EW Extremely Weathered
HW Highly Weathered
MW Moderately Weathered
SW Slightly Weathered
FR Fresh

Strength
VL Very Low <0.1
L Low 0.1 - 0.3
M Medium 0.3 - 1
H High 1 - 3
VH Very High 3 - 10
EH Extremely High >10

Defect Type
JT Joint
PT Parting
SM Seam
SZ Shear Zone
CS Crushed Seam

Roughness
VR Very Rough
RO Rough
SO Smooth
SL Slickensided

Coating
CN Clean
SN Stained
VN Veneer(<1mm)
CO Coating(1-5mm)

Planarity
PL Planar
CU Curved
ST Stepped
IR Irregular



ENGINEERING LOG - BOREHOLE

BOREHOLE NO BH-CB17

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 1
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 21/8/22

DRILL TYPE: Truck Mounted Drill Rig**EASTING:** 301989 m**SURFACE RL:****BOREHOLE DIAMETER:** 100 mm**INCLINATION:** 90°**NORTHING:** 6560515 m**DATUM:** AHD

Drilling and Sampling				Material description and profile information				Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	
AD/T	Not Encountered	0.40m				GC	0.03m ASPHALT			WEARING SURFACE
		0.50m				CI	0.35m FILL: Sandy Clayey GRAVEL, fine to coarse grained, pale grey, fine to medium grained sand, angular gravel Silty CLAY: Medium plasticity, mottled grey, brown, with some gravel, fine grained, angular			FILL-PAVEMENT
		ES SPT 4,4,6 N=10		0.5			0.95m	M > w _p	St	COLLUVIUM
		0.95m		1.0			Hole Terminated at 0.95 m			
				1.5						
				2.0						
				2.5						
				3.0						
				3.5						
				4.0						
				4.5						

LEGEND:**Water**

- Water Level
(Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes

- Gradational or transitional strata
- Definitive or distinct strata change

Notes, Samples and Tests

- U₅₀ 50mm Diameter tube sample
- CBR Bulk sample for CBR testing
- E Environmental sample
- ASS Acid Sulfate Soil Sample
- B Bulk Sample

Field Tests

- PID Photoionisation detector reading (ppm)
- DCP(x-y) Dynamic penetrometer test (test depth interval shown)
- HP Hand Penetrometer test (UCS kPa)

Consistency

- VS Very Soft
- S Soft
- F Firm
- St Stiff
- VSt Very Stiff
- H Hard
- Fb Friable

UCS (kPa)

- <25
- 25 - 50
- 50 - 100
- 100 - 200
- 200 - 400
- >400

Moisture Condition

- D Dry
- M Moist
- W Wet
- W_p Plastic Limit
- W_L Liquid Limit

Density

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

- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%



ENGINEERING LOG - BOREHOLE

BOREHOLE NO BH-CB18

CLIENT: RP Infrastructure
PROJECT NAME: Car Park B Works
SITE LOCATION: Tamworth Hospital
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 1
JOB NO: RGS32576.1
LOGGED BY: LD
DATE: 21/8/22

DRILL TYPE: Truck Mounted Drill Rig**EASTING:****SURFACE RL:****BOREHOLE DIAMETER:** 100 mm**INCLINATION:** 90°**NORTHING:****DATUM:** AHD

Drilling and Sampling				Material description and profile information				Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (Not measured)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	
AD/T	Not Encountered	0.05m				GC	0.05m ASPHALT	D	D	WEARING SURFACE
		0.10m ES					FILL: Sandy Clayey GRAVEL, fine to medium grained, pale grey, fine to medium grained sand, angular gravel			FILL-PAVEMENT
		0.50m		0.5		CH	0.40m Gravelly CLAY: Medium to high plasticity, mottled red-brown, pale brown, gravel, fine grained, angular	M < w _p	VSt	COLLUVIUM
		SPT 18,18,18 N=36		1.0			1.00m			
		0.95m					Hole Terminated at 1.00 m			
				1.5						
				2.0						
				2.5						
				3.0						
				3.5						
				4.0						
				4.5						

LEGEND:**Water**

- Water Level (Date and time shown)
- Water Inflow
- Water Outflow

Strata Changes

- Gradational or transitional strata
- Definitive or distinct strata change

Notes, Samples and Tests

- U₅₀ 50mm Diameter tube sample
- CBR Bulk sample for CBR testing
- E Environmental sample
- ASS Acid Sulfate Soil Sample
- B Bulk Sample

Field Tests

- PID Photoionisation detector reading (ppm)
- DCP(x-y) Dynamic penetrometer test (test depth interval shown)
- HP Hand Penetrometer test (UCS kPa)

Consistency

- VS Very Soft
- S Soft
- F Firm
- St Stiff
- VSt Very Stiff
- H Hard
- Fb Friable

UCS (kPa)

- <25
- 25 - 50
- 50 - 100
- 100 - 200
- 200 - 400
- >400

Moisture Condition

- D Dry
- M Moist
- W Wet
- w_p Plastic Limit
- w_L Liquid Limit

Density

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

- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%



Appendix C

Laboratory Test Result Sheets

Location	DEPTH (m)	MATERIAL	TOTAL RECOVERABLE HYDROCARBONS					PAH		BTX	PCB	Pesticides		HEAVY METALS							
			C6-C10	C10-C16	C16-C34	C34-C40	TOTAL 10-40	Total	b-a-p			OC	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	<1	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	<1	11	21	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	<1	<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	<1	8	15	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 BH-CB17 0.4 – 0.5m)	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 investigation Level (HIL)*:								400	4	NL	1	10	10	500	150	500#	30000	1200	1200	60000	120
Health Screening Level (HSL)**:			F1=45(0-<1m) F1=70 (1-<2m) F1=110 (2-<4m)	F2=110 (0-<1m) F2=240 (1-<2m) F2=440 (2-<4m)																	
Ecological Investigation Level (EIL)***:			800	1000	3500	10000								100		190	190	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							
			800	1000	3500	10000								Fine grained soil in mg/kg							

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

NL No Limit available
LOR Limit of Reporting

* Health Based Investigation Levels for Residential 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



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

Location	DEPTH (m)	MATERIAL	ASBESTOS
			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
Client	: REGIONAL GEOTECHNICAL SOLUTION
Contact	: MR ADAM HOLZHAUSER
Address	: Unit 14 25-27 Hurley Drive COFFS HARBOUR NSW, AUSTRALIA 2450
Telephone	: +61 02 6553 5641
Project	: RGS32576.1 PROPOSED CARPARK B Upgrades
Order number	: ----
C-O-C number	: ----
Sampler	: ----
Site	: Tamworth Hospital
Quote number	: EN/222
No. of samples received	: 38
No. of samples analysed	: 38

Page : 1 of 23
Laboratory : Environmental Division Sydney
Contact : Customer Services ES
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61-2-8784 8555
Date Samples Received : 22-Aug-2022 16:27
Date Analysis Commenced : 24-Aug-2022
Issue Date : 29-Aug-2022 15:02



Accreditation No. 825
Accredited for compliance with
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.



Analytical Results

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
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		ES2229960-001	ES2229960-002	ES2229960-003	ES2229960-004	ES2229960-005
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		10.1	1.9	15.5	14.6	7.6
EG005(ED093)T: Total Metals by ICP-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 Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
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



Analytical Results

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
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		ES2229960-001	ES2229960-002	ES2229960-003	ES2229960-004	ES2229960-005
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (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 Pesticides (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 Aromatic 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



Analytical Results

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
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		ES2229960-001	ES2229960-002	ES2229960-003	ES2229960-004	ES2229960-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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 hydrocarbons	----	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 Hydrocarbons									
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 Hydrocarbons - NEPM 2013 Fractions									
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		<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



Analytical Results

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
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		ES2229960-001	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 Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		130	93.1	89.4	100	93.9
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		136	100	101	93.8	94.0
EP075(SIM)S: Phenolic Compound 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 Surrogates									
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



Analytical Results

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
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		ES2229960-006	ES2229960-007	ES2229960-008	ES2229960-009	ES2229960-010
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		4.0	10.7	8.7	12.5	16.8
EG005(ED093)T: Total Metals by ICP-AES									
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 by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH-CB6 0.04-0.1	BH-CB7 0.5-0.6	BH-CB8 0.5-0.6	BH-CB9 0.45-0.5	BH-CB10 0.3-0.4
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		ES2229960-006	ES2229960-007	ES2229960-008	ES2229960-009	ES2229960-010
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (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 Pesticides (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 Aromatic 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



Analytical Results

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
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		ES2229960-006	ES2229960-007	ES2229960-008	ES2229960-009	ES2229960-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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 hydrocarbons	----	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 Hydrocarbons									
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 Hydrocarbons - NEPM 2013 Fractions									
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		<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



Analytical Results

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
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		ES2229960-006	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 Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		104	91.7	102	98.4	85.2
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		108	93.1	101	99.7	86.5
EP075(SIM)S: Phenolic Compound 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									
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 Surrogates									
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



Analytical Results

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
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		ES2229960-011	ES2229960-012	ES2229960-013	ES2229960-014	ES2229960-015
				Result	Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		10.0	2.9	14.8	6.0	15.9
EG005(ED093)T: Total Metals by ICP-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 Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
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



Analytical Results

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
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		ES2229960-011	ES2229960-012	ES2229960-013	ES2229960-014	ES2229960-015
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (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 Pesticides (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 Aromatic 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



Analytical Results

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
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	ES2229960-011	ES2229960-012	ES2229960-013	ES2229960-014	ES2229960-015
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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 hydrocarbons	----	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 Hydrocarbons								
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 Hydrocarbons - NEPM 2013 Fractions								
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	<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



Analytical Results

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
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		ES2229960-011	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 Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		91.1	102	100	100.0	94.3
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		90.3	105	102	101	93.7
EP075(SIM)S: Phenolic Compound 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									
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 Surrogates									
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



Analytical Results

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
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
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		2.7	10.0	3.3	14.0	15.4
EG005(ED093)T: Total Metals by ICP-AES									
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 Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
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



Analytical Results

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
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
EP068A: Organochlorine Pesticides (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 Pesticides (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 Aromatic 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



Analytical Results

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
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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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 hydrocarbons	----	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 Hydrocarbons								
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 Hydrocarbons - NEPM 2013 Fractions								
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
^ >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



Analytical Results

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
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 Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		104	99.4	119	96.0	94.6
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		100.0	92.2	111	86.9	79.0
EP075(SIM)S: Phenolic Compound Surrogates									
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									
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



Analytical Results

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
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	ES2229960-021	ES2229960-022	ES2229960-023	ES2229960-024	ES2229960-025
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification 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



Analytical Results

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
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	ES2229960-026	ES2229960-027	ES2229960-028	ES2229960-029	ES2229960-030
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification 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



Analytical Results

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
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	ES2229960-031	ES2229960-032	ES2229960-033	ES2229960-034	ES2229960-035
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification 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



Analytical Results

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	----	----
Sampling 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 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 Identification of Asbestos in Soils	
EA200: Description	BH-CB1 0.5-0.6 - 22-Aug-2022 00:00
EA200: Description	BH-CB2 0.5-0.6 - 22-Aug-2022 00:00
EA200: Description	BH-CB3 0.5-0.6 - 22-Aug-2022 00:00
EA200: Description	BH-CB4 0.04-0.1 - 22-Aug-2022 00:00
EA200: Description	BH-CB5 0.5-0.95 - 22-Aug-2022 00:00
EA200: Description	BH-CB6 0.5-0.6 - 22-Aug-2022 00:00
EA200: Description	BH-CB7 0.06-0.1 - 22-Aug-2022 00:00
EA200: Description	BH-CB8 0.5-0.6 - 22-Aug-2022 00:00
EA200: Description	BH-CB9 0.5-0.6 - 22-Aug-2022 00:00
EA200: Description	BH-CB10 0.3-0.4 - 22-Aug-2022 00:00
EA200: Description	BH-CB11 0.5-0.6 - 22-Aug-2022 00:00
EA200: Description	BH-CB12 0.5-0.6 - 22-Aug-2022 00:00
EA200: Description	BH-CB13 0.3-0.4 - 22-Aug-2022 00:00
EA200: Description	BH-CB14 0.5-0.6 - 22-Aug-2022 00:00
EA200: Description	BH-CB15 0.1-0.2 - 22-Aug-2022 00:00
EA200: Description	BH-CB16 0.05-0.1 - 22-Aug-2022 00:00
EA200: Description	BH-CB17 0.5-0.6 - 22-Aug-2022 00:00
EA200: Description	BH-CB18 0.5-0.6 - 22-Aug-2022 00:00



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 Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
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

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 david.tully@contaminatedlandsolutions.com.au. 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



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