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Preliminary and Detailed  
Contamination  
Assessment – Proposed  
Stables Development

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Cnr Darling and Chatham  
Street, Broadmeadow  
NSW.

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NEW20P-0194-ABv1  
21 April 2022

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# Document control record

Document prepared for:

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Document Control						
Report Title		Contamination Assessment				
Document ID		NEW20P-0194-AB				
Project		Contamination Assessment Cnr Darling and Chatham Street, Broadmeadow NSW				
Rev	Date	Revision details/status	Prepared by	Author	Project Manager	Reviewer
0	15/06/2021	Original	Qualtest	B. Snow	E. Coleman	L. Fox
1	21/04/2022	Revised	Qualtest	E. Coleman		

## Executive Summary

Qualtest Laboratory NSW Pty Ltd (Qualtest) has carried out a Contamination Assessment (CA) on behalf of Newcastle Jockey Club Ltd (NJC) c/- Avid Project Management Pty Ltd (Avid PM), for the proposed development located at the corner of Darling and Chatham Street, Broadmeadow, NSW (the site).

The site is located within Lot 13 DP227704 and currently comprises part of the Newcastle Jockey Club facility, approximately 2.5ha in size. The site contains multiple horse stables, grassed fields used for car parking, horse unloading and loading area, parading area, pavilions, an equine centre, and sheds used for storage of maintenance equipment including pesticides, fertilisers, fuels and oils.

Based on information provided by Avid PM, the site is proposed to be redeveloped for stables, offices, equipment, goods and maintenance sheds, access roads and carparks, ticket booth and landscaped courtyard areas.

The objectives of the CA were to:

- Assess former and current site uses or activities, that have the potential cause contamination;
- Assess the location and extent of potential soil contamination on the site (if any); and,
- Provide recommendations on the need for further assessment, management and/or remediation.

In order to achieve the above objective, Qualtest carried out the following scope:

- Desktop study and site history assessment, including incorporation of relevant information from a preliminary geotechnical assessment by Qualtest (ref: NEW20P-0194-AA, dated 12 January 2021);
- Site walkover;
- Drilling of 13 boreholes for collection of soil samples;
- Collection of 10 surface soil samples;
- Laboratory analysis of soil samples from a suite of common contaminants; and,
- Data assessment and preparation of a Contamination Assessment Report.

The site history review showed the site has been owned and occupied by the Newcastle Jockey Club since 1915. Available information indicates the site has been used for horse racing since the 1840s. Aerial photographs from 1954 to the present day show that the site has been used as a racecourse facility with associated buildings, viewing pavilions, storage sheds and horse stables being constructed and/or renovated over the past 67 years.

Today the site is still used as a racecourse and includes horse stables, grassed fields used for car parking, horse unloading and loading area, parading area, pavilions, an equine centre and building used for storage of maintenance equipment including pesticides, fertilisers, fuels and oils.

The desktop and site history assessment identified four Areas of Environmental Concern (AECs), relating to hazardous materials in current and former buildings; imported fill materials, storage of pesticides, fuels and oils; and application of fertilisers and pesticides. The risk of soil contamination being present was assessed to be low to medium.

The field investigations identified fill across the site to depths between 0.0m bgs and 1.0m bgs. The fill was relatively consistent across the site, comprising of soils mixed with coal chitter, with the exception of surface soils which varied depending on location (i.e. gravel in roads and carparks, and topsoil in grassed areas).

The sampling and analysis targeted the AECs and COPC identified. The results showed concentrations below the adopted criteria, taking into account the 95% UCL calculations, with the exception of zinc above the EIL in sample BH15 0.0-0.1m. BH15 was located in a grassed "median strip" in the horse loading and unloading area, which is asphalt paved. Based on this, the extent of the elevated zinc concentrations was considered small and localised. Therefore, it is considered that further investigation or remediation is not warranted.

It is considered that groundwater is unlikely to be contaminated by site activities, based on the following: The soil assessment did not identify gross or widespread contamination; The contamination identified comprised localised impacts of metals in surface soils; and, Groundwater inflows were observed beneath sandy clay alluvial soils. The clayey subsoils would inhibit migration of contamination from surface soils or fill materials, to groundwater

Based on the results of the Preliminary and Detailed Contamination Assessment, it is considered the site is suitable for the proposed redevelopment, from a contamination perspective, in accordance with SEPP Resilience and Hazards (which consolidates former SEPP 55 – Remediation of Land, SEPP 33 – Hazardous and Offensive Development and SEPP (Coastal Management) 2018).

An Unexpected Finds Procedure must be included in the Construction Environmental Management Plan, and implemented during demolition of buildings and earthworks.

If buildings onsite are proposed to be demolished or refurbished as part of the development, it is recommended that a hazardous materials survey is completed by a suitably qualified consultant/hygienist. Following the survey, the hazardous materials (if any) will require appropriate demolition and disposal to a licensed waste facility.

Any soils proposed to be removed from the site, will require waste classification in accordance with the NSW EPA (2014) Waste Classification Guideline. Alternatively, soils may be able to be assessed in accordance with a relevant resource recovery order/exemption under Part 9, Clause 91 to 93 of the Protection of The Environmental Operations (Waste) Regulation 2014.

The report comprises a preliminary and detailed contamination assessment, in accordance with State Environmental Planning Policy Resilience and Hazards (which consolidates former SEPP 55 – Remediation of Land, SEPP 33 – Hazardous and Offensive Development and SEPP (Coastal Management) 2018). This report was prepared in general accordance with the relevant sections of the NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Land and the National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), NEPC 2013, Canberra (referred to as ASC NEPM 2013).



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## **Attachments:**

Appendix A - Figures: Figure 1 - Site Location Plan

Figure 2 - Site Features Plan

Figure 3 – Soil Sampling Locations

Figure 4 – Newcastle Jockey Club Master Plan

Appendix B: Tables: Table 1 – Soil Analytical Results – TRH, BTEX, PAH, Metals

Table 2 – Soil Analytical Results – OCP

Table 3 – Soil Analytical Results - Asbestos

Table 4 – Quality Control Results

Appendix C: Groundwater Bore Search

Appendix D: Historical Titles

Appendix E: Aerial Photographs

Appendix F: Site Photographs

Appendix G: NSW EPA Records

Appendix H: Section 10.7 Certificates

Appendix I: Borehole Logs

Appendix J: Data Validation Report

Appendix K: Laboratory Reports

## 1.0 Introduction

Qualtest Laboratory NSW Pty Ltd (Qualtest) has carried out a Preliminary and Detailed Contamination Assessment on behalf of Newcastle Jockey Club Ltd (NJC) c/- Avid Project Management Pty Ltd (Avid PM), for the proposed development located at the corner of Darling and Chatham Street, Broadmeadow, NSW (the site). Figure 1, Appendix A, shows the site location.

The site is located within Lot 13 DP227704 and currently comprises part of the Newcastle Jockey Club facility, approximately 2.5ha in size. The site contains multiple horse stables, grassed fields currently used for car parking, horse unloading and loading area, parading area, pavilions, an equine centre, and sheds used for storage of maintenance equipment including pesticides, fertilisers, fuels and oils.

Based on information provided by Avid PM, it is understood the following developments are proposed for the site:

- Seven horse stables 'Blocks' (approx. 1278m<sup>2</sup> each);
- Site office (approx. 135m<sup>2</sup>);
- Equipment shed (approx. 262m<sup>2</sup>);
- Goods storage shed (approx. 570m<sup>2</sup>);
- Maintenance amenities (approx. 160m<sup>2</sup>);
- Maintenance shed (approx. 508m<sup>2</sup>);
- Three basins (125m<sup>2</sup>, 180m<sup>2</sup> and 304m<sup>2</sup>);
- Seven horse walkers (unknown area);
- Paved access roads;
- Thirty six space car park;
- Wash bay and sand roll areas;
- New ticket booth; and
- Court yard areas with plants and trees.

The Masterplan is shown on Figure 4, Appendix A.

The purpose of the assessment was to support the DA submission to the City of Newcastle Council.

The report comprises a preliminary and detailed contamination assessment, in accordance with State Environmental Planning Policy Resilience and Hazards (which consolidates former SEPP 55 – Remediation of Land, SEPP 33 – Hazardous and Offensive Development and SEPP (Coastal Management) 2018). This report was prepared in general accordance with the relevant sections of the NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Land and the National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), NEPC 2013, Canberra (referred to as ASC NEPM 2013).

## 1.1 Objectives

The objectives of the Preliminary and Detailed Contamination Assessment were to:

- Assess former and current site uses or activities, that have the potential to cause contamination;
- Assess the location and extent of potential soil contamination on the site (if any); and,
- Provide recommendations on the need for further assessment, management and/or remediation.

The report comprises a preliminary and detailed contamination assessment, as required by State Environmental Planning Policy Resilience and Hazards. The report has been prepared in general accordance with, or with reference to, contaminated land planning guidelines, guidelines in force under the Contaminated Land Management Act 1997, legislation and standards, including:

- State Environmental Planning Policy Resilience and Hazards.
- Environmental Planning & Assessment Act 1979 (EP&A Act).
- Contaminated Land Management (CLM) Act 1997 (CLM Act).
- Protection of the Environment Operations Act 1997 (POEO Act).
- Protection of the Environment Operations (Waste) Regulation 2014 (POEO Regulation).
- Newcastle Local Environmental Plan 2012 (NLEP).
- Newcastle Development Control Plan 2012 (NDCP), in particular Section 5.02 Land Contamination.
- Newcastle Contaminated Land Management Policy.
- NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Sites.
- NSW EPA (2014) Waste Classification Guidelines Part 1: Classifying Waste.
- NSW EPA (2017) Guidelines for the NSW Site Auditor Scheme (3rd edition).
- WA DoH (2009) Guidelines of the assessment and management of asbestos contaminated sites in Western Australia, WA Department of Health and Department of Environment and Conservation.
- National Environment Protection (Assessment of Site Contamination) Measure 1999 (Amended April 2013) NEPC 2013 (ASC NEPM 2013).
- AS/NZS 4482.1 – 2005, Guide to the Sampling and Investigation of potentially contaminated soil – Non-volatile and semi-volatile compounds.
- AS/NZS 4482.2 – 1999, Guide to the Sampling and Investigation of potentially contaminated soil – Volatile compounds.

## 1.2 Scope of Works

In order to achieve the above objective, Qualtest carried out the following scope:

- Desktop study and site history assessment, including incorporation of relevant information from a preliminary geotechnical assessment by Qualtest (ref: NEW20P-0194-AA, dated 12 January 2021);
- Site walkover;
- Drilling of 13 boreholes for collection of soil samples;
- Collection of 10 surface soil samples;
- Laboratory analysis of soil samples from a suite of common contaminants; and,
- Data assessment and preparation of a Preliminary and Detailed Contamination Assessment Report.

## 2.0 Site Description

### 2.1 Site Identification

General site information is provided below in Table 2.1. The site location is shown in Figure 1, Appendix A.

**Table 2.1: Summary of Site Details**

<b>Site Address:</b>	Cnr Darling and Chatham Street, Broadmeadow NSW
<b>Approximate site area and dimensions:</b>	Approx. 2.5 ha. Approx. 125m wide by 2500m long at its widest and longest points.
<b>Title Identification Details:</b>	Part Lot 13 DP227704 within the City of Newcastle local government area, Parish of Newcastle, County of Northumberland.
<b>Current Zoning</b>	RE2 Private Recreation
<b>Current Ownership:</b>	Newcastle Jockey Club Limited
<b>Current Occupier:</b>	Newcastle Jockey Club Limited
<b>Previous and Current Landuse:</b>	Newcastle Jockey Club The Australian Agricultural Company (Prior to 1915)
<b>Proposed Landuse:</b>	RE2 Private Recreation
<b>Adjoining Site Uses:</b>	North – Newcastle Jockey Club race track; East – Newcastle Jockey Club; South – Chatham Street, followed by residential dwellings; West – Darling Street, followed by residential dwellings.
<b>Site Coordinates for approx. centre of site:</b>	32°55'52.13 S 151°44'13.96 E



## 2.2 Topography and Drainage

Reference to the NSW Land and Property Information Spatial Information Exchange website (<https://six.nsw.gov.au/wps/portal/>) indicated the elevation of the site was less than 10m AHD.

During the site walkover, the site was observed to be relatively level with no discernible slopes.

Rain falling on the site would be expected to infiltrate into the site surface. Excess surface water is expected to flow off site, following on-site drainage systems and low points. Surface water is anticipated to then flow into municipal storm water drains located along Chatham and Darling Streets, which are likely to discharge into the Hunter River, located about 2.5km north-east of the site.

## 2.3 Regional Geology

Reference to the 1:100,000 Newcastle-Hunter Area Coastal Quaternary Geology Map indicates that the site is underlain by an Estuarine Plain System comprising of clay, silt, fluvial sand, marine sand, shell.

Qualtest previously carried out a geotechnical assessment for the site, ref: NEW20P-0194-AA, dated 12 January 2021. As part of the assessment, 12 boreholes were drilled across the site. These boreholes identified fill materials to depths of between 0.2m and 1.0m, overlying alluvial soils comprising sandy clay / clayey sand, and sand to the depth of investigation of 2.8m

The borehole logs are included in Appendix I, and the soil profile is included in the description provided in Section 8.1.

## 2.4 Hydrogeology

Groundwater beneath the site is anticipated to be present in a semi-confined aquifer in alluvial soils. Groundwater is expected to occur between 2m and 4m below ground surface (bgs). Groundwater flow direction is anticipated to follow the regional topography and discharge into the Hunter River, located approximately 2.5km to the north-east of the site.

It should be noted that groundwater conditions can vary due to rainfall and other influences including regional groundwater flow, temperature, permeability, recharge areas, surface condition, and subsoil drainage.

A search of the NSW Department of Primary Industries (Office of Water) registered groundwater bores located within a 500m radius of the site was undertaken. The search revealed that there was one bore within this radius. A copy of the search is provided in Appendix C.

Bore ID	Installation Date	Purpose	Approx. Distance and Gradient from Site	Water Bearing Zones (mbgs)
GW058191	1/12/1982	General Use	370m E, Cross-gradient	Not Provided

Notes: NK – not known; N – North, E – East, S – South, W – West

## 2.5 Acid Sulfate Soils

Reference to the Acid Sulfate Soil Risk Mapping for the Wallsend (1:25,000 scale, December 1997 Edition 2, supplied by the Department of Land and Water Conservation) indicates that the site is located within an aeolian sandplain at greater than 4m AHD, with a low probability of acid sulfate soils at greater than 3m depth.

Reference to the Newcastle Local Environmental Plan (LEP) 2012 Acid Sulfate Map soils on the site are classified as “Class 4” Acid Sulfate Soils. Class 4 ASS are works more than 2 metres below the natural ground surface and/or works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.

The previous geotechnical assessment for the site included an ASS assessment. The assessment found that ASS were present below about 1.6m depth. An ASS Management Plan would be required if excavations greater than 1.5m depth are proposed.

### 3.0 Site History Review

A site history review was undertaken as part of the CA, and included:

- A review of historical ownership of the site (Lot 13 DP227704);
- A review of aerial photography from the past 66 years;
- A review of Section 10.7 Certificate from City of Newcastle Council;
- An interview with a long-term employee of the Jockey Club;
- Search of the NSW EPA's list of contaminated sites applying to the site and nearby properties; and
- A site walkover to help identify current and previous activities carried out on the site, identify surrounding land uses, and assess Areas of Environmental Concern (AECs) and Chemicals of Potential Concern (COPCs).

The information provided from the above reviews is summarised in the sections below.

#### 3.1 Historical Titles Search

A search of historical titles for Lot 13 DP 227704 was undertaken by Advanced Legal Searchers Pty Ltd. A list of past registered proprietors for Lot 13, dating back to 1906, was obtained. The results of the search are included in Appendix D and a summary is presented below in Table 3.1.

**Table 3.1: Summary of Historical Titles - Lot 13 DP 227704**

Date	Owner
1915 – To date	The Newcastle Jockey Club Limited
Prior – 1915	The Australian Agricultural Company

The historical title search indicated that the site was owned by the Australian Agricultural Company prior to 1915. From 1915 to present day the site has been owned by the Newcastle Jockey Club Limited.

Prior to 1915, Australian Agricultural Company (AACo) were granted land by the British Government for the purposes of establishing agriculture in the Port Stephens area and coal mining in the Newcastle area. Based on the site's location, it is inferred that AACo held Lot 13 DP227704 for purposes associated with coal mining. (references: [https://en.wikipedia.org/wiki/Australian\\_Agricultural\\_Company](https://en.wikipedia.org/wiki/Australian_Agricultural_Company), and [https://web.archive.org/web/20110930030430/http://www.newcastle.nsw.gov.au/\\_data/assets/pdf\\_file/0005/115988/Chapter\\_2.pdf](https://web.archive.org/web/20110930030430/http://www.newcastle.nsw.gov.au/_data/assets/pdf_file/0005/115988/Chapter_2.pdf)).

#### 3.2 Aerial Photograph Review

Aerial photographs of the site from 1954, 1964, 1976, 1987 and 1993 were obtained from the NSW Government Spatial Portal (<https://portal.spatial.nsw.gov.au>), and satellite images from Google Earth for 2010 and 2021, were assessed by a Qualtest Environmental Scientist. The

results of the aerial photograph review are summarised below in Table 3.2. The aerial photographs are presented in Appendix E.

**Table 3.2: Aerial Photograph Review**

Year	Site	Surrounding Land
1954	<p>The photo is black and white, and of moderate quality.</p> <p>The site appears to comprise the Newcastle Jockey Club.</p> <p>Horse stables and a mounting yard are observed in the central portion of the site.</p> <p>A small building is also observed in the central southern portion of the site (currently tickets sales/entry and groundsman shed).</p> <p>Another building can also be observed in the central-western portion of the site.</p> <p>A fence or hedge appears to be present across the southern portion of the site.</p> <p>There may be a building/structures in the centre of the site, and in the north-west corner of the site, however the photo is not clear.</p>	<p>The surrounding land is observed to be a horse racing track to the north and north-east. A dam appears to be situated in the middle of the race track.</p> <p>Additional buildings/pavilions associated with the Newcastle Jockey Club are located to the east. Residential dwellings to the south and west followed by vacant land.</p>
1964	<p>The photo is black and white, and of moderate quality.</p> <p>The site appears to be relatively unchanged from the previous aerial photograph. Two small buildings are present in the central-southern portion of the site.</p> <p>There are structures in the north-west corner of the site.</p> <p>A circular structure has also been developed along the north-western boundary of the site.</p> <p>The fence or hedge in the southern part of the site is no longer present.</p>	<p>The surrounding land appears similar to the previous aerial photograph, some additional road infrastructure has been developed to the south of the site.</p>
1976	<p>The photo is colour, and of good quality.</p> <p>The site is similar to the 1964 photo.</p> <p>Two additional buildings have been constructed to the west of the stables.</p> <p>An area in the north-eastern portion of the site appears to have been cleared of vegetation.</p>	<p>The surrounding land appear similar to the previous aerial photograph. Additional residential dwellings have been developed to the south-east of the site.</p>

Year	Site	Surrounding Land
1987	<p>The photo is black and white, and of poor quality.</p> <p>The site appears similar to the 1976 photo.</p> <p>A building in the north-western portion appears to have been removed. It appears that more trees have been planted in the central portion of the site.</p> <p>No other changes could be distinguished due to the poor quality of photo.</p>	<p>The surrounding land appear similar to the previous aerial photograph. Additional residential dwellings have been developed to the south of the site.</p>
1993	<p>The photo is colour, and of good quality.</p> <p>The site is similar to the 1987 photo.</p> <p>A horse swimming pool has been constructed in the centre of the site. Cars are parked adjacent to the pool and the entry/groundsmen building. These may be associated with construction of the pool.</p> <p>Additional circular structures have been developed on the site, in the north-western corner. A road/ roundabout, possibly asphalt paved, has appears to have been constructed along the western boundary of the site.</p>	<p>The site appears relatively unchanged from the previous aerial photograph.</p> <p>The roof of the viewing pavilion to the east of the site has changed colour.</p>
2010	<p>The photo is colour, and of good quality.</p> <p>The site appears similar to the previous aerial photograph.</p> <p>A small structure has been developed along the central-western boundary.</p> <p>A new building is present on the north-western boundary of the site, and a new small building in the north-western corner of the site.</p> <p>The horse swimming pool has been fenced off, and a few sheds are present to the north of the pool.</p> <p>The roof of the entry/groundsmen building has changed from grey to green in colour.</p>	<p>The surrounding land appears relatively unchanged, there appears to be minor disturbed land to the north-east of the site in the middle of the race track.</p> <p>A new pavilion building has been constructed immediately to the east of the north-east corner of the site.</p>
2021	<p>The photo is colour, and of good quality.</p> <p>The site appears similar to the previous aerial photograph, and appears to be consistent with the current site layout.</p>	<p>The surrounding area appears relatively unchanged. Additional dams have been constructed in the middle of the race track.</p>

### 3.3 Site Observations

A Qualtest Environmental Scientist visited the site on 6 May 2021. Selected site photographs are presented in Appendix F. The location of site features is shown on Figure 2, Appendix A. A summary of the site features is outlined below:

- The southern and central portion of the site was mostly observed to comprise open space and well-maintained grass. Two access roads comprising some asphalt and gravel materials were observed on the site running north-south from the southern boundary in the central portion of the site and approximately east-west along the southern boundary of the site. Pooled water was observed on the surface following recent rain (see photographs 1 and 2);
- An equine centre and the entry building and gates to the NJC were observed in the central southern portion of the site. The equine centre comprised concrete paved floors, hydrotherapy pools containing chlorinated water, steel fencing, a small building constructed of wood and a steel roof, and a small shed constructed of steel. The NJC entry building and gates were located in the central eastern portion of the site, were observed to be constructed with concrete with steel roofing and guttering (see photographs 3 to 5);
- A shed was observed connected on the northern side of the entry gates to NJC. The shed stored a variety of fertilisers including liquid seaweed, rooster booster, BorMax, Growrite Seaweed Master, and Florafert SRF. Two lockers containing pesticides were also observed in the shed. These lockers were locked during the site visit so the types of pesticides are not known. Several other containers comprising engine oil, hydraulic oil, degreaser and surface cleaner were also observed. Five jerry cans were observed and were thought to contain diesel or petroleum. Wheel mounted, generator powered, weed sprayers were also observed. All containers, bags and buckets of fertilisers appeared to be in good condition. The floor of the shed was constructed of concrete and was observed to be in a good condition (see photographs 6 to 8);
- A car park area was observed to the north of the NJC entry gates, in the central portion of the site and appears to be mostly grass with two gravel and asphalt paved access roads intersecting the car park running approximately east-west (see photograph 9);
- A Marquee was observed in the north-east portion of the site, and was used as a function/spectating facility. The Marquee is constructed of PVC covers and plastic (see photograph 10);
- One large horse stable and three smaller horse stables were observed in the central portion of the site. Each stable was made up of numerous smaller stables. The stables appeared to be constructed of concrete blocks for walls, concrete floors with rubber mats, both in good condition, wooden and steel frames and steel rooves (see photographs 11 to 12);
- A mounting yard/parading ring was observed to the east of the stables, and comprised well-maintained grass coverage and mulch which then became asphalt paved as the path travelled north-east then east towards the racing track (see photograph 13);
- An access roundabout road area, used for loading and unloading horses for track work and race meets was observed along the western boundary of the site. The road was constructed of asphalt of varying quality (mostly good with some poor quality areas). Asphalt patching works were observed particularly along the far western boundary. The central portion of the access round about appeared to be filled due to the raised elevation of the area (see photograph 14);
- To the north and north-east of the access roundabout road area was a concrete viewing tower and a raised wood and steel constructed viewing room. The floor surrounding the two buildings comprised of manufactured sand fill.

- Two circular structures, thought to be used to hold horses or used to work horses, was observed in the north-western portion of the site. These two structures were constructed of brick walls, sand floors and a steel gate (see photograph 15);
- A locked shed was observed along the western boundary of the site and was observed to be relatively new, constructed of steel with a concrete floor (see photograph 16);
- Two fuel storage cells/pumps constructed of steel were observed along the western boundary of the site. Anecdotal information indicated that the fuel storage cells/pumps were new and were delivered to site on the 27 April 2021. Qualtest was also informed that the storage cells were empty at the time of the site walkover (see photograph 17);
- Fork lift forks, a roller, a grass cutting attachment, two tyres, PVC piping, aluminium guttering and a trailer were observed along the western boundary in the north-western corner of the site;
- Two new shipping containers on concrete footings were observed along the Western boundary of the site;
- The site is fenced by mostly wire and steel fencing with brick walls observed around the entries to the site; and,
- Several small to medium sized trees and landscaped gardens were observed around the site (see photograph 18).

### 3.4 NSW EPA Records & Environment Protection Licenses

#### Contaminated Land Records

A search of the NSW EPA database of notices issued under the Contaminated Land Management Act, 1997 (CLM Act) revealed there were no properties listed as having current and/or former notices within the Broadmeadow suburb.

A search of sites that have been notified to NSW EPA as contaminated (as of 6 May 2021) was also carried out. The search identified three properties within the Broadmeadow suburb which have been notified to the NSW EPA as being contaminated. These properties were:

- Service Station, 16 Broadmeadow Road – Located approximately 2km north-east of the site (Regulation under the CLM not required);
- Coles Express Service Station, Corner Brunner Road and Lambton Road – Located approximately 560m north of the site (Regulation under the CLM not required);
- Metal industry, 2 Georgetown Road, Broadmeadow – Located approximately 2km located north-east of the site (Under Assessment);

Based on the distance of these properties from the site, it is considered that contamination on the properties would not impact the site.

A copy of the above searches is provided in Appendix G.

#### Penalty Notices

The Protection of the Environment Operations (POEO) register under Section 308 of the POEO Act 1997, was searched for Penalty Notices for the suburb of Broadmeadow NSW. The search revealed no Penalty Notices for the suburb of Broadmeadow.



### Environment Protection Licenses (EPLs)

The Protection of the Environment Operations (POEO) register under Section 308 of the POEO Act 1997, was searched for Environment Protection Licenses (EPLs) and notices for the suburb of Broadmeadow NSW. The search revealed there were three properties within the Broadmeadow suburb.

Company Name	Address	Approx. Distance & Direction from Site	Licensed Activity
UGL Rail Services Pty Ltd	16 Broadmeadow Road, Broadmeadow	1.9km north-west from the northern boundary of the site	Hazardous, Industrial or Group A Waste Generations or Storage
Berendsen fluid Power Pty Ltd	9-11 Broadmeadow Road, Broadmeadow	1.95km north-west from the northern boundary of the site	Hazardous, Industrial or Group A Waste Generations or Storage
Railcorp	Brown Road, Broadmeadow	880m west north-west from western boundary of the site	Hazardous, Industrial or Group A Waste Generations or Storage

Based on the distance of these properties from the site, it is considered that contamination on the properties would not impact the site.

A copy of the above searches is provided in Appendix G.

### NSW EPA PFAS Investigation Program

Based on a review of the NSW EPA Government PFAS Investigation Program ([ref: https://www.epa.nsw.gov.au/your-environment/contaminated-land/pfas-investigation-program](https://www.epa.nsw.gov.au/your-environment/contaminated-land/pfas-investigation-program)), there are no properties in the suburb of Broadmeadow that have been identified as a site that is likely to have used large quantities of PFAS.

### NSW EPA Former Gasworks Sites

Based on a review of the NSW EPA website ([ref: https://www.epa.nsw.gov.au/your-environment/contaminated-land/other-contamination-issues/former-gasworks-sites](https://www.epa.nsw.gov.au/your-environment/contaminated-land/other-contamination-issues/former-gasworks-sites)), no former gasworks have been identified in the suburb of Broadmeadow.

## 3.5 Anecdotal Information

Mr Dave Nugent responded to site questions provided by Qualtest on 9 June 2021. Mr Nugent is a member of the track staff and has been associated with the NJC since 1982. Information obtained from Mr Nugent is summarised below:

- According to Mr Nugent the site has been used as tie up stalls. The stables used to be positioned along the perimeter fence, with a barn positioned where the existing car park is now.
- Mr Nugent is not aware of any chemicals stored on the site (note, Qualtest observed chemicals stored in the groundsmen building).
- The only waste Mr Nugent is aware of on the site is horse waste.
- NJC has owned the land as long as Mr Nugent can remember.
- Mr Nugent is unaware of any past uses that may have affected the site from a contamination perspective.
- As far as Mr Nugent is aware, the surrounding land uses have been private housing.

The Newcastle Jockey Club website (<https://www.newcastle-acecourse.com.au/newcastle-jockey-club/>) also provides information on the history of the site:

- Organised racing began in the region in 1848. *“The first race meeting was held in 1848 on a track cleared through bush and scrub in an area known as Wallaby Flat. Wallaby Flat was an area taking in most of Hamilton, a portion of Broadmeadow and Merewether.”*
- *“The starting point of the races was at the city’s first smelting works, located on the site once known as Beaumont Park, the junction of the Sydney rail line, not far from the Nine Ways, Broadmeadow was the finishing point, and therefore it is fair to say that parts of the Broadmeadow course have known the hoof-beats of fleet horses since the 1840’s.”*
- *“The future of Newcastle was made secure when the first meeting of racegoers and enthusiasts of the Sport of Kings met to form the Newcastle Jockey Club in 1907.”*

### 3.6 Section 10.7 Certificate

A Section 10.7 Certificate for the site was obtained from Newcastle City Council, and is presented in Appendix H. Relevant information is summarised below.

**Table 3.3 - Summary of Section 10.7 Certificate for Lot 13 DP227704**

<b>Zoning</b>	Zone RE2 Private Recreation
<b>Critical Habitat</b>	The Newcastle Local Environmental plan 2012 does not identify the land as including or comprising critical habitat.
<b>Heritage</b>	The land is NOT within a heritage conservation area under the Newcastle Local Environmental Plan 2012.
<b>Mine Subsidence</b>	The land IS WITHIN a declared Mine Subsidence District under section 20 of the Coal Mine Subsidence Compensation Act 2017.
<b>Bushfire</b>	Information currently available indicates the land is not affected by a policy referred to in Item 7 of Schedule 4 of the Environmental Planning and Assessment Regulation 2000 that restricts the development of the land because of the likelihood of bushfire.
<b>Loose-fill Asbestos Insulation</b>	City of Newcastle HAS NOT been notified that the land includes any residential premises (within the meaning of Division 1A of Part 8 of the Home Building Act 1989) that are listed on the register of loose-fill asbestos insulation, that is required to be maintained under that division.

<b>Contaminated Land Information</b>	<p><i>Council is in possession of the following contaminated land documents(s) which relate the land. Persons relying on the certificate are advised to examine and consider the contents of each document:</i></p> <ol style="list-style-type: none"> <li><i>1. Report: Dr John Lucas (11 November 2013) Environmental Site Assessment DW 4543036</i></li> <li><i>2. Report: ESP Environmental and Safety Professionals (November 2014) Detailed Site Investigation</i></li> <li><i>3. Report: ESP Environmental and Safety Professionals (17 February 2015) Validation Report</i></li> </ol> <p><i>Persons relying on the certificate are advised to make their own investigations as to whether the land is affected by elevated concentrations of soil or groundwater contaminants in relation to proposed purchase or use of the land.</i></p> <p><i>It is noted that the above reports relate to portions of the Newcastle Racecourse that are not located within or adjacent to the current site.</i></p>
<b>Potential acid sulfate soils</b>	<p>Yes, the site is located within an area of Class 4 Acid Sulfate Soils.</p>

### 3.7 Previous Reports

Qualtest completed a Preliminary Geotechnical Assessment for the site in January 2021. (ref: NEW20P-0194-AA, dated 12 January 2021). The geotechnical assessment was carried out to provide information on subsurface conditions (soil profile) and preliminary geotechnical parameters for foundations, pavements, and retaining walls.

As part of the geotechnical assessment, 12 boreholes (BH01 to BH12) were drilled across the site using a mini-excavator with an auger attachment. The boreholes were drilled to 2.8m depth across the site. The borehole logs are included in Appendix I, and the soil profile is included in the description provided in Section 8.1.

Qualtest has not been provided with or been made aware of any previous contamination assessments being conducted on the site. The reports noted on the Section 10.7 certificate were not located within or adjacent to the current site. These reports related to facilities (including re-fuelling) located on the eastern side of Newcastle Racecourse property, greater than 400m from the current site.

### 3.8 Summary of Site History

- The site history review showed the site has been owned and occupied by the Newcastle Jockey Club since 1915. Prior to 1915 the site was owned by the Australian Agricultural Company. Based on available information, it appears the site has been used for horse racing since the 1840s, and it is unlikely that coal mining pit top activities occurred on the site.
- Aerial photographs from 1954 to the present day show that the site has been used as a racecourse with associated pavilions, storage sheds and horse stables being progressively constructed and/or renovated over the past 67 years.
- Today the site is still used as a racecourse with multipurpose buildings, horse stables, viewing pavilions, an equine centre (including hydrotherapy pool), and sheds which are used for storing chemicals, fuels, pesticides and maintenance equipment.

### 3.9 Potential Offsite Sources of Contamination

Based on the surrounding land use, no potential offsite sources of contamination have been identified adjacent to and/or upgradient of the site.

### 3.10 Gaps in the Site History

Whilst the site history is reasonably comprehensive there are some gaps identified in the review as follows:

- The origin of the fill materials observed during sampling of boreholes across the site is not known;
- The process used to treat water from the equine centre hydrotherapy pool is not known; and
- Historic use and application rate of fertilisers/herbicides/pesticides/fuels is not known.

### 3.11 Areas of Environmental Concern

Table 3.11 (below) shows the areas of environmental concern (AECs) and associated Chemicals of Potential Concern (COPCs) identified for the site.

**Table 3.11 – Areas of Environmental Concern and Chemicals of Potential Concern**

AEC	Potentially Contaminating Activity	Potential COCs	Likelihood of Contamination
1. Current and former buildings across the site.	Weathering and/or demolition of potentially hazardous materials (asbestos, lead paint, galvanised metals)	Metals, Asbestos	Low
2. Imported Fill.	Potential use of imported fill of unknown quality and origin.	TRH, BTEX, PAH, OCPs, Metals, Asbestos	Medium
3. Storage and use of pesticides and fuels/oils in groundsman building.	Potential for pesticide and hydrocarbon contamination.	Metals, OCPs, BTEX, PAHs, TRH	Low
4. Application of fertilisers, pesticides across the site.	Potential for pesticides and fertiliser contamination.	Metals, OCP	Low

## 4.0 Data Quality Objectives

### 4.1 Step 1 – State the Problem

There is a potential for soil contamination to exist from past and current practices. Should contamination exist the site may not be suitable for the intended use without remediation and or management.

Four AECs have been identified for the site:

1. Current and former buildings across the site;
2. Imported fill;
3. Storage of pesticides and fuels/oils in groundsmen building; and,
4. Application of fertilisers and pesticides across site.

### 4.2 Step 2 – Identify the Decisions

The decisions to be made based on the Contamination Assessment (site history review, site observations, and sampling & analysis) are:

- Is the site suitable for the proposed development? Is the site contaminated and requires remediation and or management, and if so, what level and type of remediation will be required to make the site suitable for the proposed land use, from a contamination perspective?

### 4.3 Step 3 – Identify the Inputs to the Decisions

Inputs into the decision are:

- Have samples been collected in the required areas of the site (the identified AECs)?
- Have samples been collected at the required frequencies and adequately represent the conditions on site?
- Have samples been collected in the required media?
- Is the data set adequate to perform statistical analysis, if required (i.e. calculate 95% UCL)?
- Have the samples been analysed for the COPCs identified?
- Have concentrations exceeding the adopted criteria been reported in the samples?
- If concentrations exceeding adopted criteria have been reported, will these areas require remediation and/or management?

The informational inputs into the decision area:

- Field observations and field screening results (PID);
- Laboratory results (concentrations of contaminants in soil);
- QA/QC documentation and data;
- Adopted assessment criteria (see Section 6); and,
- Relevant NSW EPA endorsed Guidelines.

Based on the preliminary nature of the investigation, the media to be sample and analysed is:

- Soil.

## 4.4 Step 4 – Define the Study Boundaries

The study boundary is defined laterally as the site boundary, part Lot 13 DP227704 within the City of Newcastle local government area. The site is located at the Cnr of Darling and Chatham Street, Broadmeadow NSW and covers an area of approximately 2.5ha (refer to Figure 1 and Figure 2, Appendix A). Vertically, the study boundary will be defined by the depth of soil contamination and/or depth to groundwater. It is anticipated the vertical boundary would be a maximum of 5m bgs.

## 4.5 Step 5 – Develop a Decision Rule

Chemicals of Potential Concern (COPCs) are identified in Section 3.11, above. The COPCs and the associated assessment criteria are listed in Section 6 below.

The decision rules can be defined as: -

- If the laboratory quality assurance/ quality control data are within the acceptable ranges, the data will be considered suitable for use;
- If the COPCs are reported above the adopted criteria and/or at elevated levels (where no criteria are available) then it will be considered whether further assessment, remediation and/or management measures are required; and
- Where concentrations are below the assessment criteria, then no further assessment, remediation and/or management of that contaminant, in that area, in that media, is required. This is provided samples have been collected at the required frequencies (as per NSW EPA guidelines) and adequately represent the conditions on site, if not, additional sampling may be required.

## 4.6 Step 6 – Specify Acceptable Limits on Decision Errors

There are two types of errors:

- Type 1 – finding that the site is contaminated, when it is not;
- Type 2 – finding that the site is uncontaminated, when it is.

To reduce the potential for errors, the following will be applied:

- Appropriate field sampling methodologies and collection of field data (including sampling frequency);
- Robust QA/QC assessment of field procedures and laboratory data;
- Appropriate sampling and analytical density;
- Use of statistics (i.e. 95% UCL) to assess arithmetic average of COPCs. Use of statistics will also take into account:
  - No sample should report a concentration more than 250% of the adopted criteria; and,
  - The standard deviation of a sample population should not exceed 50% of the adopted criteria.



## 4.7 Step 7 – Optimise the Design for Obtaining Data

The methodologies presented in this report are designed to meet the nominated DQOs. Optimisation of the data collection process will be achieved by:

- Working closely with the analytical laboratories and sampling equipment suppliers so that appropriate procedures and processes are developed and implemented prior to and during the field work and that sampling, handling, and transport to, and processing by, the analytical laboratories is appropriate.
- Conduct sampling in accordance with industry best practice and Standard Operating Procedures (SOPs) for the type of sampling being conducted.

## 5.0 Field and Laboratory Investigations

### 5.1 Sampling Plan

The site is approximately 2.5ha in area. The NSW EPA (1995) Sampling Design Guidelines recommend a minimum of 35 sample locations to characterise a site of 2.5ha.

The previous geotechnical assessment comprised drilling of 12 boreholes on the site, providing assessment of the soil profile, and observations for odours, stains, anthropogenic materials, or other indications of potential contamination. Therefore, an additional 23 sampling locations were required to meet the sampling density recommended by NSW EPA (1995).

Thirteen (13) boreholes (BH13 to BH18, BH20 to BH23, and BH25 to BH27) and 10 surface soil samples (SS1 to SS8, BH19 and BH24) were collected from across the site. Two proposed borehole locations BH19 and BH24) were converted to surface samples, due to access constraints. The sampling locations were selected on an approximately grid-based system, taking into account the previous borehole locations and buildings/structures.

The sampling locations are shown on Figure 3, Appendix A. The sampling locations in relation to the identified AECs is shown in Table 5.1 below.

**Table 5.1 AECs and Sampling Locations**

AEC	Sampling Locations	Previous Borehole Locations
1. Current and former buildings across the site.	BH13, BH17, BH18, BH19, BH21, SS2, SS3, SS4, SS6, SS7	BH07 to BH11
2. Imported Fill.	BH13 to BH27 and SS1 to SS8	BH01 to BH12
3. Storage and use of pesticides and fuels/oils in groundsmen building.	SS6 and SS7	Nil

AEC	Sampling Locations	Previous Borehole Locations
4. Application of fertilisers, pesticides across the site.	BH13 to BH27 and SS1 to SS8	BH01 to BH12

## 5.2 Sampling

Thirteen (13) boreholes (BH13 to BH18, BH120 to BH23, and BH25 to BH27) were drilled using a 4WD truck mounted drill rig across the site. The boreholes were drilled to approximately 1.5m below ground surface (bgs). Soil samples were collected directly from the auger using a pair of clean disposable nitrile gloves.

Ten surface soil samples (SS1 to SS8, BH19 and BH24) were collected using hand tools. Two locations, BH19 and BH24, were changed from borehole locations to surface sample locations due to access constraints.

The soil samples were placed into 250mL laboratory supplied glass jars, and two zip locked bags PID screening and laboratory analysis. Each soil sample was placed directly into an ice-chilled esky and remained chilled during fieldwork and transportation to the laboratory.

## 5.3 Laboratory Analysis

23 primary soil samples were selected for analysis based on field observations and dispatched to the NATA-accredited Eurofins MGT laboratory under chain of custody conditions. The samples were analysed for the following:

- Total Recoverable Hydrocarbons (TRH) - 23 primary samples;
- Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) - 23 primary samples;
- Polycyclic Aromatic Hydrocarbons (PAHs) – 23 primary samples;
- Metals (arsenic, cadmium, chromium, copper, lead, nickel, zinc and mercury) – 15 primary samples;
- Organochlorine pesticides (OCPs) – 5 primary samples;
- pH & CEC – 1 primary samples; and
- Asbestos (NEPM % w/w) – 15 primary samples.

## 6.0 Investigation Criteria

### 6.1 Health and Ecological Levels (Soil)

To assess whether the material is suitable for re-use on-site, the laboratory results were compared to the health and ecological investigation levels for soil, presented in the *National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)*, NEPC 2013, Canberra (referred to as ASC NEPM 2013).

ASC NEPM (2013) provides health and ecological investigation and screening levels for different exposure scenarios based on a proposed land use. They are adopted as concentrations of a contaminant above which either further appropriate investigation and/or evaluation will be required, or development of an appropriate management strategy (including remediation).

Health Investigation Levels (HILs) and Health Screening levels (HSLs) are applicable for assessing human health risk via relevant exposure pathways. The HILs were developed for a broad range of metals and organic substances. These are generic to all soil types. The HSLs have been developed for selected petroleum compounds and fractions and are applicable to assessing human health risk via inhalation and direct contact with soil and groundwater. The HSLs depend on specific soil physicochemical properties, building configurations, land use scenarios and the depth that groundwater is encountered. Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) are applicable for assessing risk to terrestrial ecosystems under residential, open space and commercial/industrial land use scenarios. They apply to the top 2m of soil, which corresponds to the root zone and habitation zone of many species. The EILs are associated with selected metals and organic compounds. The EILs are site specific and are determined by calculating an Ambient Background Concentration (ABC) and an Added Contaminant Limit (ACL) for the site, which are added together to get the EIL. The EIL's for the site have been calculated using an ABC and site specific pH, Cation Exchange Capacity (CEC) and clay content values. The ABC obtained from Trace element concentrations in soils from rural and urban areas of Australia.

It is noted the ESLs for benzo(a)pyrene (ASC NEPM, 2013) were adopted from Canadian Soil Quality Guidelines (SQGs) presented in Environment Canada (2004), and were noted to have a low-reliability. The ESLs for benzo(a)pyrene in ASC NEPM (2013) were based on a review of Canadian SQGs by Dr Michael Warne, who completed the review in February 2010. Since the completion of Warne (2010) (which are included in the publication of ASC NEPM, 2013), the Canadian SQGs for benzo(a)pyrene were revised later in 2010 (CCME 2010a,b). Therefore, CRC Care Technical Note 39 assesses the benzo(a)pyrene ESL derivation, and derives a higher reliability ESL for benzo(a)pyrene in the Australian setting. The ESLs for benzo(a)pyrene derived by CRC Care (2017) are 33mg/kg for residential and open space land uses, and 172mg/kg for commercial/industrial land uses. These have been considered where benzo(a)pyrene concentrations exceed the ESL, but do not exceed the HIL, to mitigate against unwarranted remediation that is driven by low-reliability ESLs.

Based on the current and proposed site use (RE2 private recreation with horse stables, buildings, equine centre, grassed and hard stand paved surfaces) the following investigation levels have been adopted:

- HIL C & HSL C - Public open space (parks, playgrounds, playing fields, secondary schools and footpaths) and;
- EIL C, ESL C – urban residential / public open space.

## 6.2 Asbestos Materials in Soil

The assessment of known and suspected asbestos contamination in soil is based on:

- ASC NEPM (2013); and
- WA DoH (2009) *Guidelines of the assessment and management of asbestos contaminated sites in Western Australia*, WA Department of Health and Department of Environment and Conservation.

Schedule B1, Section 4 ASC NEPM (2013) provides guidance on the assessment of both friable and non-friable forms of asbestos in soil. This guidance is based on the WA DoH (2009) Guidelines that presented risk based screening levels for asbestos in soil under various landuse scenarios.

For the purpose of assessing asbestos impacts in soil, three groups are recognised:

- Asbestos Containing Material (ACM) - *which is in sound condition although possibly broken or fragmented and the asbestos is bound in a matrix. This is restricted to material that cannot pass through a 7mm x 7mm sieve;*
- Fibrous asbestos (FA) - *friable asbestos material, such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products;*
- Asbestos fines (AF) - *includes free fibres of asbestos, small fibre bundles and also ACM fragments that pass through a 7mm x 7mm sieve.*

The health screening levels for asbestos in soil for public open space have been adopted:

Form of Asbestos	HSL C
Bonded ACM %	0.02
FA and AF %	0.001
All forms of asbestos	No visible evidence for surface soil (top 10cm)

## 7.0 Quality Assurance/Quality Control

Sampling activities were undertaken in accordance with normal, industry accepted practices and standards. The assessment of field and laboratory quality assurance / quality control (QA / QC) procedures is provided below, and a data validation report is presented in Appendix J.

In order to assess field quality assurance / quality control (QA/QC) procedures, the following quality control samples were collected and analysed:

QC Sample	Type	Lab	Analysis
D.12.5.21	Duplicate of BH22 0.0-0.1	Eurofins mgt	TRH, BTEX, PAH
T.12.5.21	Triplicate of BH22 0.0-0.1	ALS	TRH, BTEX, PAH, Metals
D1.12.5.21	Duplicate of BH14 0.0-0.1	Eurofins mgt	TRH, BTEX, PAH, Metals
T1.12.5.21	Triplicate of BH14 0.0-0.1	ALS	Not Analysed

Primary and intra lab duplicate samples were analysed by the NATA-accredited Eurofins mgt laboratory. Inter-lab duplicate samples were analysed by the NATA accredited ALS laboratory.

Table 4, Appendix B, presents the relative percentage differences (RPDs) between the primary and duplicate samples. A review of the Qualtest QA / QC results indicates that RPDs were within the acceptable range. It is noted that low concentrations can exaggerate the percentage differences with respect to small total concentrations, therefore where results for primary and duplicate sample were less than 10 times the LOR, the RPDs have been disregarded.

The laboratory internal QA/QC reports indicated that the appropriate laboratory QA / QC procedures and rates were undertaken for contamination studies, and that:

- Laboratory blank samples were free of contamination;
- Laboratory matrix spike recoveries were within the control limits;
- Laboratory duplicate RPDs were recorded within the control limits; and
- Surrogates and laboratory control samples were within the laboratories acceptable range.

Based on the above, and the data validation report in Appendix J, it is considered that the field and laboratory methods for soil sampling are appropriate and that the data obtained is usable and considered to reasonably represent the concentrations at the sampling points at the time of sampling.

## 8.0 Results

### 8.1 Subsurface Conditions

Table 8.1 presents a summary of the typical soil types encountered at borehole locations during the field investigation, divided into representative geotechnical units. Table 8.2 contains a summary of the distribution of the above geotechnical units at the borehole locations. The borehole logs are presented in Appendix I.

**Table 8.1 – Summary of Geotechnical Units and Soil Types**

Unit	Soil Type	Description
1	FILL	<p>SAND - fine to medium grained, pale brown to white and grey to dark grey and orange-brown, root affected.</p> <p>Sandy Clayey GRAVEL / Clayey GRAVEL - fine to coarse grained, sub-rounded to rounded and sub-angular, grey to grey-brown, pale brown to orange-brown, with some black fine to coarse grained sand, fines of low to medium plasticity, with some slag, coal chitter with some roots and rootlets.</p> <p>Sandy Gravelly CLAY / Sandy CLAY / Clayey Gravelly SAND – low plasticity clay, fine to coarse grained sand, black and grey-brown to grey, fine to medium grained angular to sub-angular gravel.</p> <p>Sandy GRAVEL (crusher dust and road base) - fine to medium grained, sub-rounded to sub-angular, grey-brown to brown and dark grey, and pale brown and grey-brown, fine to coarse grained sand, trace fines of low plasticity.</p> <p>Sandy GRAVEL (Coal Chitter) - fine to medium grained, sub-angular to angular, dark grey to black, fine to medium grained sand.</p> <p>Silty Sandy GRAVEL / Gravelly Silty SAND – fine to medium grained gravel, sub-rounded to sub-angular, fine to coarse grained sand, pale orange-brown, and dark brown / brown to grey, fine to coarse grained sand, fines of low plasticity.</p>
2	TOPSOIL	<p>Silty SAND – fine to medium grained, brown, fines of low plasticity, root affected.</p>

Unit	Soil Type	Description
3	ALLUVIUM	<p>CLAY - medium to high plasticity, dark grey to grey with some pale brown and orange-brown, with some fine to medium grained sand, with organic inclusion.</p> <p>Sandy CLAY - medium to high plasticity, dark grey, grey, pale grey and orange-brown and brown, fine grained sand.</p> <p>Clayey SAND - fine to medium grained, grey with some white and orange-brown, fines of low to medium plasticity.</p> <p>SAND – fine to medium grained, pale grey to white / grey /orange-brown, becoming dark grey to dark brown / black at increasing depth, fines of low plasticity. Weakly cemented layers in places.</p>

**Table 8.2 – Summary of Geotechnical Units Encountered at Each Borehole Location**

Location	Unit 1 Fill	Unit 2 Topsoil	Unit 3 Alluvium
	Depth in metres (m)		
BH01	0.00 – 0.70	-	0.70 – 2.80
BH02	0.00 – 0.40	-	0.40 – 2.80
BH03	0.00 – 0.45	-	0.45 – 2.80
BH04	-	0.00 – 0.20	0.20 – 2.80
BH05	0.00 – 0.20	-	0.20 – 2.80
BH06	0.00 – 0.60	-	0.60 – 2.80
BH07	0.00 – 1.00	-	1.00 – 2.80
BH08	0.00 – 0.70	-	0.70 – 2.80
BH09	0.00 – 0.80	-	0.80 – 2.80
BH10	0.00 – 0.80	-	0.80 – 2.80
BH11	0.00 – 0.50	-	0.50 – 2.80
BH12	0.00 – 0.80	-	0.80 – 2.80
BH13	0.00 – 0.90	-	0.90 – 1.50
BH14	0.00 – 0.90	-	0.90 – 1.50
BH15	0.00 – 1.00	-	1.00 – 1.50
BH16	0.00 – 0.70	-	0.70 – 1.50
BH17	0.00 – 1.00	-	1.00 – 1.50
BH18	0.00 – 0.60	-	0.60 – 1.50
BH20	0.00 – 1.00	-	1.00 – 1.50
BH21	0.00 – 0.70	-	0.70 – 1.50

Location	Unit 1 Fill	Unit 2 Topsoil	Unit 3 Alluvium
	Depth in metres (m)		
BH22	0.00 – 0.40	-	0.40 – 1.50
BH23	0.00 – 0.50	-	0.50 – 1.50
BH25	-	-	0.20 – 1.50
BH26	0.00 – 0.50	-	0.50 – 1.50
BH27	0.00 – 0.30	-	0.30 – 1.50

Slow groundwater inflows were observed at depths of approximately 2.40m beneath existing ground level at borehole locations BH02 to BH05, BH10, and BH12, during the geotechnical assessment in November 2020. No groundwater levels or inflows were observed in the remaining boreholes during the limited time that they remained open on the day of field work.

It should be noted that groundwater conditions can vary due to rainfall and other influences including regional groundwater flow, temperature, permeability, recharge areas, surface condition, and subsoil drainage

Coal chitter was observed in the fill in each borehole, and slag was occasionally observed in fill materials. No other anthropogenic materials, staining or odours were observed during sampling.

## 8.2 PID Results

Headspace screening using a Photo-Ionisation Detector (PID) was undertaken on the soil samples collected. PID headspace screening can provide a field indication of whether volatile contaminants are present.

The PID headspace screening recorded results between 0.0 and 3.5ppmv, which indicates a negligible to low potential for volatile contaminants.

## 8.3 Laboratory Results

Soil analytical results for the contamination assessment are summarised in Table 1 to Table 3, Appendix B. The laboratory analytical reports are also included in Appendix K.

The soil laboratory results were compared to the investigation levels described in Sections 6. The analytical results indicated that concentrations of contaminants were reported below the adopted criteria, with the exception of the following:

- Concentrations of Zinc exceeded the EIL (700mg/kg) in samples BH15 0.0-0.1 (2,900mg/kg), and SS7 (820mg/kg);
- Concentrations of Copper exceeded the EIL (290mg/kg) in sample BH15 0.0-0.1 (350mg/kg);
- Concentrations of Benzo(a)pyrene exceeded the ESL (0.7mg/kg) in samples BH22 0.0-0.1 (2.2mg/kg), BH24 0.0-0.1 (1.2mg/kg), BH26 0.0-0.1 (1.0mg/kg) and BH27 0.0-0.1 (1.5mg/kg). These concentrations are below the CRC Care (2017) ESL for benzo(a)pyrene (33mg/kg);
- Concentrations of Benzo(a)pyrene TEQ slightly exceeded the HIL (3mg/kg) in sample BH22 0.0-0.1 (3.1mg/kg).

For concentrations of benzo(a)pyrene, benzo(a)pyrene TEQ, and zinc exceeding the adopted investigation levels the 95% Upper Confidence Limits (UCLs) of the average concentrations for the sample results were calculated using ProUCL in accordance with the procedures discussed in NEPM (2013) Schedule B2 Section 13 and NSW EPA (1995) Sampling Design Guidelines.

NEPM (2013) Schedule B1, Section 3.2.1 states that:

- *“At the very least, the maximum and 95%UCL of the arithmetic mean contaminant concentration should be compared to the relevant Tier 1 screening criteria”*
- *“The implications of localised elevated values (hotspots) should also be considered. The results should also meet the following criteria:*
  - *The standard deviation of the results should be less than 50% of the relevant investigation or screening level, and*
  - *No single value should exceed 250% of the relevant investigation or screening level.”*

Calculation sheets for data statistics, including average, standard deviation and 95%UCL of the average, are attached in Appendix K. ProUCL calculates the UCL comparing a number of different methods, including normal distribution, lognormal distribution, gamma distribution and nonparametric. ProUCL then recommends an appropriate method for the data set.

The UCL was calculated for:

- Zinc in surface soils. It is noted that BH15 0.0-0.1 was not included in the calculation as the concentration of zinc in BH15 0.0-0.1 was considered a hotspot (concentrations greater 250% of screening level);
- Copper in surface soils;
- Benzo(a)pyrene TEQ in surface soils;

The calculations showed:

<b>Parameter</b>	<b>Benzo(a)pyrene</b>	<b>Copper</b>	<b>Zinc</b>
No. of samples	19	12	11
Average	0.932	57.73	200.3
Standard Deviation	0.716	93.24	231.3
95% UCL	1.647	111.7	428
EIL (mg/kg)	3.0	290	700

The 95% UCL calculation shows the average and 95% UCL concentrations for benzo(a)pyrene TEQ, copper, and zinc were below the adopted criteria.



## 9.0 Discussion

The site history review showed the site has been owned and occupied by the Newcastle Jockey Club since 1915. Available information indicates the site has been used for horse racing since the 1840s. Aerial photographs from 1954 to the present day show that the site has been used as a racecourse facility with associated buildings, viewing pavilions, storage sheds and horse stables being constructed and/or renovated over the past 67 years.

Today the site is still used as a racecourse and includes horse stables, grassed fields used for car parking, horse unloading and loading area, parading area, pavilions, an equine centre and building used for storage of maintenance equipment including pesticides, fertilisers, fuels and oils.

The desktop and site history assessment identified four Areas of Environmental Concern (AECs), relating to hazardous materials in current and former buildings; imported fill materials, storage of pesticides, fuels and oils; and application of fertilisers and pesticides. The risk of soil contamination being present was assessed to be low to medium.

The field investigations identified fill across the site to depths between 0.0m bgs and 1.0m bgs. The fill was relatively consistent across the site, comprising of soils mixed with coal chitter, with the exception of surface soils which varied depending on location (i.e. gravel in roads and carparks, and topsoil in grassed areas).

The sampling and analysis targeted the AECs and COPC identified. The results showed concentrations below the adopted criteria, taking into account the 95% UCL calculations, with the exception of zinc above the EIL in sample BH15 0.0-0.1m. BH15 was located in a grassed "median strip" in the horse loading and unloading area, which is asphalt paved. Based on this, the extent of the elevated zinc concentrations was considered small and localised. Therefore, it is considered that further investigation or remediation is not warranted.

It is considered that groundwater is unlikely to be contaminated by site activities, based on the following:

- The soil assessment did not identify gross or widespread contamination. The contamination identified comprised localised impacts of metals in surface soils;
- Groundwater inflows were observed beneath sandy clay alluvial soils. The clayey subsoils would inhibit migration of contamination from surface soils or fill materials, to groundwater.

## 10.0 Conceptual Site Model

Based on the results of the contamination assessment carried out on the site, a Conceptual Site Model (CSM) has been developed.

**Table 10.0 – Preliminary Conceptual Site Model**

AEC	COPC	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential mechanisms of exposure	Potential & Complete Exposure Pathways	Comments
1. Current and former buildings across the site. <ul style="list-style-type: none"> <li>Weathering of potentially hazardous materials (asbestos, lead paint, galvanised metals)</li> </ul>	Metals, Asbestos	<ul style="list-style-type: none"> <li>Top-down leaks/spills, flakes/fibres onto soil.</li> <li>Leaching of soil contaminants to surface water and groundwater.</li> </ul>	<ul style="list-style-type: none"> <li>Aesthetics</li> <li>Underlying soils</li> <li>Surface water</li> <li>Groundwater</li> </ul>	<ul style="list-style-type: none"> <li>Current site visitors</li> <li>Future construction workers &amp; site users</li> <li>Soil biota/plants and transitory wildlife</li> <li>Offsite surface water – Unnamed dam located 230m to the north-east of the site.</li> <li>Offsite groundwater discharge point – Hunter River located approximately 2.5km to the north-east of the site.</li> </ul>	<ul style="list-style-type: none"> <li>Direct dermal contact with contaminated soil</li> <li>Ingestion of contaminated soil</li> <li>Inhalation of asbestos fibres, or contaminated soil (as dust)</li> <li>Leaching of soil contaminants to surface water and/or groundwater</li> <li>Groundwater discharge from onsite to offsite Hunter River located 2.5km to the north-east of the site.</li> </ul>	<ul style="list-style-type: none"> <li>Incomplete exposure pathway for current site visitors, future construction workers and site users as no contamination above human health criteria identified.</li> <li>Incomplete exposure pathway for ecological receptors, as no contamination above ecological criteria identified, except one localised area for zinc.</li> <li>Likely incomplete exposure pathway for offsite surface water, due to the relatively level topography and nearest surface water body &gt;200m from the site.</li> <li>Likely incomplete exposure pathway for groundwater, due to localised impacts in surface soils, and groundwater beneath sandy clay subsoils.</li> </ul>	It is recommended that s Hazardous material survey be carried out on building proposed to be demolished as part of the proposed development.
2. Imported Fill <ul style="list-style-type: none"> <li>Potential use of imported fill of unknown quality and origin.</li> </ul>	TRH, BTEX, PAH, OCP, Metals, Asbestos	<ul style="list-style-type: none"> <li>Top-down and to depth of fill</li> <li>Leaching of contaminants from fill into underlying soils</li> <li>Leaching of soil contaminants to surface water and groundwater</li> </ul>	<ul style="list-style-type: none"> <li>Fill soils</li> <li>Underlying soils</li> <li>Surface water</li> <li>Groundwater</li> </ul>	<ul style="list-style-type: none"> <li>Current site visitors</li> <li>Future construction workers &amp; site users</li> <li>Soil biota/plants and transitory wildlife</li> <li>Offsite surface water – Unnamed dam located 230m to the north-east of the site.</li> <li>Offsite groundwater discharge point – Hunter River located approximately 2.5km to the north-east of the site.</li> </ul>	<ul style="list-style-type: none"> <li>Direct dermal contact with contaminated soil</li> <li>Ingestion of contaminated soil</li> <li>Inhalation of asbestos fibres, or contaminated soil (as dust)</li> <li>Inhalation of petroleum hydrocarbon vapours</li> <li>Leaching of soil contaminants to surface water and/or groundwater</li> <li>Groundwater discharge from onsite to offsite Hunter River located 2.5km to the north-east of the site.</li> </ul>	<ul style="list-style-type: none"> <li>Incomplete exposure pathway for current site visitors, future construction workers and site users as no contamination above human health criteria identified.</li> <li>Incomplete exposure pathway for ecological receptors, as no contamination above ecological criteria identified, except one localised area for zinc.</li> <li>Likely incomplete exposure pathway for offsite surface water, due to the relatively level topography and nearest surface water body &gt;200m from the site.</li> <li>Likely incomplete exposure pathway for groundwater, due to localised impacts in surface soils, and groundwater beneath sandy clay subsoils.</li> </ul>	

AEC	COPC	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential mechanisms of exposure	Potential & Complete Exposure Pathways	Comments
3. Storage of fertilisers, pesticides and fuels/oils in groundsman building <ul style="list-style-type: none"> <li>Potential for fertiliser, pesticide and hydrocarbon contamination</li> </ul>	Metals, OCPs, BTEX, PAHs, TRH	<ul style="list-style-type: none"> <li>Top-down</li> <li>Leaching of soil contaminants to surface water and groundwater</li> </ul>	<ul style="list-style-type: none"> <li>Soils</li> <li>Groundwater</li> <li>Surface water</li> </ul>	<ul style="list-style-type: none"> <li>Current site visitors</li> <li>Future construction workers &amp; site users</li> <li>Soil biota/plants and transitory wildlife</li> <li>Onsite surface water – municipal stormwater drains</li> <li>Offsite surface water – Unnamed dam located 230m to the north-east of the site.</li> <li>Offsite groundwater discharge point – Hunter River located approximately 2.5km to the north-east of the site.</li> </ul>	<ul style="list-style-type: none"> <li>Direct dermal contact with contaminated soil and/or surface water</li> <li>Ingestion of contaminated soil</li> <li>Inhalation of contaminated soil (as dust)</li> <li>Inhalation of petroleum hydrocarbon vapours</li> <li>Leaching of soil contaminants to surface water and/or groundwater</li> <li>Surface water and groundwater discharge from onsite to offsite Unnamed dam and Hunter River located 230m and 2.5km to the north-east of the site.</li> </ul>	<ul style="list-style-type: none"> <li>Incomplete exposure pathway for current site visitors, future construction workers and site users as no contamination above human health criteria identified.</li> <li>Incomplete exposure pathway for ecological receptors, as no contamination above ecological criteria identified, except one localised area for zinc.</li> <li>Likely incomplete exposure pathway for offsite surface water, due to the relatively level topography and nearest surface water body &gt;200m from the site.</li> <li>Likely incomplete exposure pathway for groundwater, due to localised impacts in surface soils, and groundwater beneath sandy clay subsoils.</li> </ul>	
4. Application of fertilisers, and pesticides <ul style="list-style-type: none"> <li>Potential for fertiliser and pesticide contamination</li> </ul>	Metals, OCP	<ul style="list-style-type: none"> <li>Top-down</li> <li>Leaching of soil contaminants to surface water and groundwater</li> </ul>	<ul style="list-style-type: none"> <li>Soils</li> <li>Groundwater</li> <li>Surface water</li> </ul>	<ul style="list-style-type: none"> <li>Current site visitors</li> <li>Future construction workers &amp; site users</li> <li>Soil biota/plants and transitory wildlife</li> <li>Onsite surface water – municipal stormwater drains</li> <li>Offsite surface water – Unnamed dam located 230m to the north-east of the site.</li> <li>Offsite groundwater discharge point – Hunter River located approximately 2.5km to the north-east of the site.</li> </ul>	<ul style="list-style-type: none"> <li>Direct dermal contact with contaminated soil and/or surface water</li> <li>Ingestion of contaminated soil</li> <li>Inhalation of contaminated soil (as dust)</li> <li>Leaching of soil contaminants to surface water and/or groundwater</li> <li>Surface water and groundwater discharge from onsite to offsite Unnamed dam and Hunter River located 230m and 2.5km to the north-east of the site.</li> </ul>	<ul style="list-style-type: none"> <li>Incomplete exposure pathway for current site visitors, future construction workers and site users as no contamination above human health criteria identified.</li> <li>Incomplete exposure pathway for ecological receptors, as no contamination above ecological criteria identified, except one localised area for zinc.</li> <li>Likely incomplete exposure pathway for offsite surface water, due to the relatively level topography and nearest surface water body &gt;200m from the site.</li> <li>Likely incomplete exposure pathway for groundwater, due to localised impacts in surface soils, and groundwater beneath sandy clay subsoils</li> </ul>	

## 11.0 Conclusions and Recommendations

Based on the results of the Preliminary and Detailed Contamination Assessment, it is considered the site is suitable for the proposed redevelopment, from a contamination perspective, in accordance with SEPP Resilience and Hazards (which consolidates former SEPP 55 – Remediation of Land, SEPP 33 – Hazardous and Offensive Development and SEPP (Coastal Management) 2018).

An Unexpected Finds Procedure must be included in the Construction Environmental Management Plan, and implemented during demolition of buildings and earthworks.

If buildings onsite are proposed to be demolished or refurbished as part of the development, it is recommended that a hazardous materials survey is completed by a suitably qualified consultant/hygienist. Following the survey, the hazardous materials (if any) will require appropriate demolition and disposal to a licensed waste facility.

Any soils proposed to be removed from the site, will require waste classification in accordance with the NSW EPA (2014) Waste Classification Guideline. Alternatively, soils may be able to be assessed in accordance with a relevant resource recovery order/exemption under Part 9, Clause 91 to 93 of the Protection of The Environmental Operations (Waste) Regulation 2014.

This report was prepared in general accordance with the relevant sections of the NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Land and the National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), NEPC 2013, Canberra (referred to as ASC NEPM 2013).

## 12.0 Limitations

The findings presented in the report and used as the basis for recommendations presented herein were obtained using normal, industry accepted practices and standards. To our knowledge, they represent a reasonable interpretation of the general site history of the site relevant to potential contamination.

This report has been prepared by Qualtest for Newcastle Jockey Club c/o Avid Project Management, based on the objectives and scope of work listed in Sections 1.1 and 1.2. No warranty, expressed or implied, is made as to the information and professional advice included in this report. Anyone using this document does so at their own risk and should satisfy themselves concerning its applicability and, where necessary, should seek expert advice in relation to their particular situation.

The opinions, conclusions and recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. Qualtest has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

In preparing this report Qualtest has relied on information contained in searches of government websites and has not independently verified or checked the data contained on these websites.

In preparing this report, current guidelines for assessment and management of contaminated land were followed. The conclusions reached in this report are dependent on the limitations inherent in all subsurface investigations where horizontal and vertical variation in contaminant concentrations can occur. No subsurface assessment can accurately predict the contaminant concentration at all points.

Site conditions may change after the date of this report. Qualtest does not accept responsibility arising from, or in connection with, any change to the site conditions.

Data and opinions contained within the report may not be used in other contexts or for any other purposes without prior review and agreement by Qualtest. If this report is reproduced, it must be in full.

## 13.0 References

**NSW Department of Primary Industries (Office of Water)** Registered Groundwater Bore Map, accessed from <http://allwaterdata.water.nsw.gov.au/water.stm>, accessed on 21 May 2021.

**NSW Land and Property Information**, Spatial Information eXchange (SIX) Maps - Topographic Map, accessed from <https://maps.six.nsw.gov.au/>, accessed on 6 May 2021.

**Department of Land and Water Conservation (1997)** Wallsend Acid Sulfate Soil Risk Map, 1:25,000 scale, Edition 2.

**NSW EPA (2020)** Guidelines for Consultants Reporting on Contaminated Land.

**NSW EPA (2014)** Waste Classification Guidelines Part 1: Classifying Waste.

**NSW EPA (2017)** Guidelines for the NSW Site Auditor Scheme (3rd edition).

**WA DoH (2009)** Guidelines of the assessment and management of asbestos contaminated sites in Western Australia, WA Department of Health and Department of Environment and Conservation.

**NEPC (2013)** National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), Canberra (ASC NEPM 2013).

State Environmental Planning Policy Resilience and Hazards.

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Contaminated Land Management (CLM) Act 1997 (CLM Act).

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Newcastle Local Environmental Plan 2012 (NLEP).

Newcastle Development Control Plan 2012 (NDCP), in particular Section 5.02 Land Contamination.

Newcastle Contaminated Land Management Policy.

AS/NZS 4482.1 – 2005, Guide to the Sampling and Investigation of potentially contaminated soil – Non-volatile and semi-volatile compounds.

AS/NZS 4482.2 – 1999, Guide to the Sampling and Investigation of potentially contaminated soil – Volatile compounds.

# **APPENDIX A:**

## **Figures**





# **LEGEND:**

Site Boundary

Image obtained from Nearmaps (<https://www.nearmaps.com/au/en>) 21 May 2021



Client:	NEWCASTLE JOCKEY CLUB C/O AVID PROJECT MANAGEMENT	Drawing No:	FIGURE 1
Project:	CONTAMINATION ASSESSMENT	Project No:	NEW20P-0194-AA
Location:	CNR DARLING AND CHATHAM STREET, BROADMEADOW, NSW	Scale:	N.T.S.
Title:	SITE LOCATION PLAN	Date:	28/05/2021



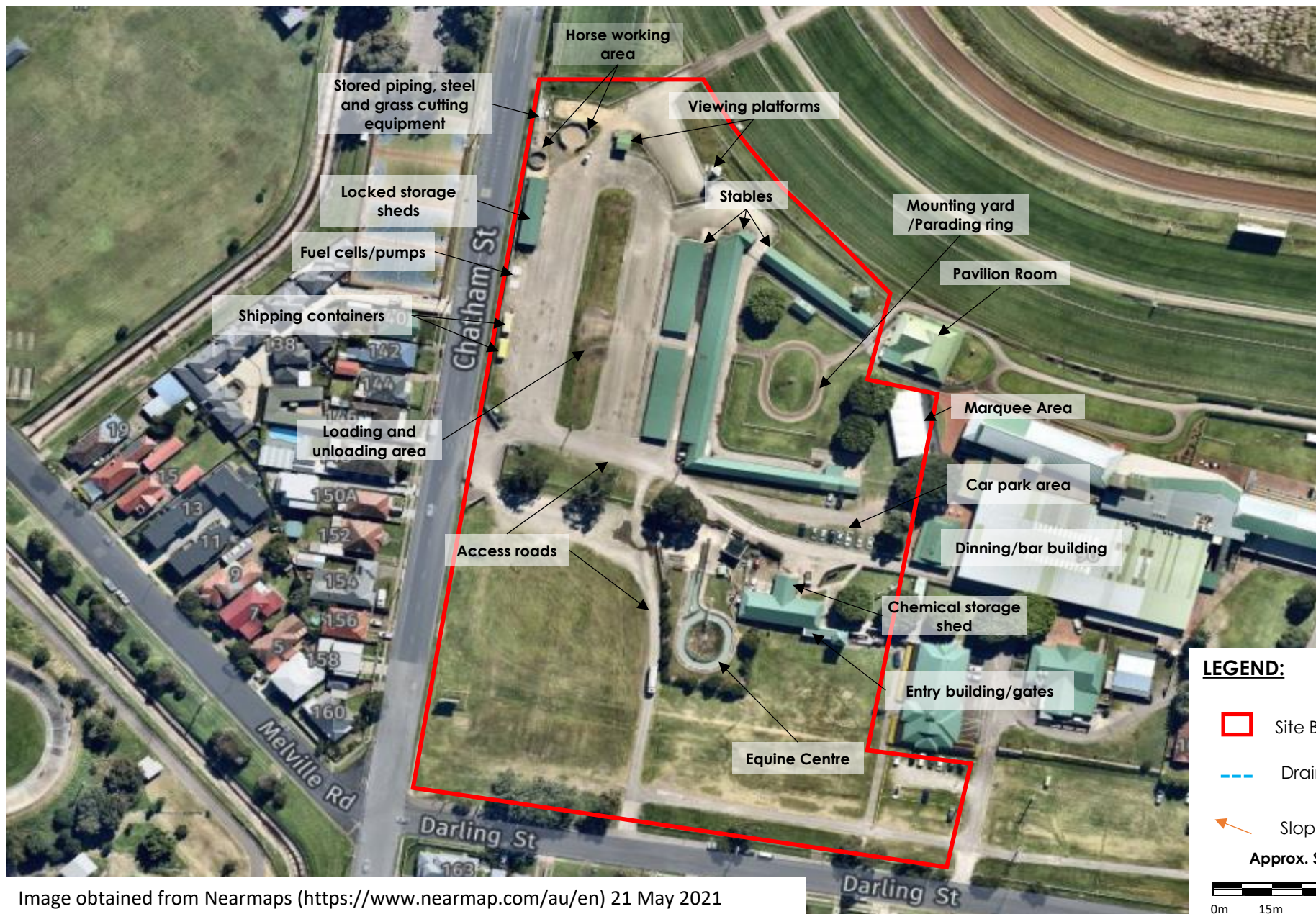




Image obtained from Nearmaps (<https://www.nearmap.com/au/en>) 21 May 2021

Client:	NEWCASTLE JOCKEY CLUB C/O AVID PROJECT MANAGEMENT	Drawing No:	FIGURE 2
Project:	CONTAMINATION ASSESSMENT	Project No:	NEW20P-0194-AA
Location:	CNR DARLING AND CHATHAM STREET, BROADMEADOW, NSW	Scale:	N.T.S.
Title:	SITE FEATURES PLAN	Date:	28/05/2021





#### LEGEND:

-  Approximate borehole locations
-  Approximate surface sample location

Client:	NEWCASTLE JOCKEY CLUB C/O AVID PROJECT MANAGEMENT	Drawing No:	FIGURE 3
Project:	CONTAMINATION ASSESSMENT	Project No:	NEW20P-0194-AA
Location:	CNR DARLING AND CHATHAM STREET, BROADMEADOW, NSW	Scale:	N.T.S.
Title:	SOIL SAMPLING LOCATIONS	Date:	18/05/2021





## **APPENDIX B:**

### **Tables**

Table 1: Soil Analytical Results - TRH, BTEX, PAH, Metals  
Proposed Stables Development, Darling Street, Broadmeadow NSW



						Field ID	BH13 0.0-0.1	BH14 0.0-0.1	BH15 0.0-0.1	BH16 0.0-0.1	BH17 0.4-0.5	BH18 0.4-0.5	BH19 0.0-0.1	BH20 0.4-0.5	BH22 0.0-0.1	BH23 0.0-0.1	BH24 0.0-0.1	BH25 0.0-0.1	BH26 0.0-0.1	BH27 0.0-0.1	SS1 0.0-0.1	SS2 0.0-0.1	SS3 0.0-0.1	SS4 0.0-0.1	SS5 0.0-0.1
						Date	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021
Analytes		Units	LOR	HIL/HSL C	HSL D	EIL/ESL C																			
Metals	Arsenic	mg/kg	2	300		100	< 2	10	15	2.3	38	4.3	-	-	-	-	4	-	4.2	-	2.6	8.5	-	3.6	-
	Cadmium	mg/kg	0.4	90			< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	-	-	-	-	< 0.4	-	< 0.4	-	< 0.4	< 0.4	-	0.5	-
	Chromium	mg/kg	5	300		670*	< 5	20	13	17	8.4	5.4	-	-	-	-	9.8	-	37	-	18	6.8	-	7.1	-
	Copper	mg/kg	5	17000		290*	7.7	24	350	17	110	20	-	-	-	-	35	-	26	-	21	38	-	20	-
	Lead	mg/kg	5	600		1100	8.3	8.5	410	5.8	130	10	-	-	-	-	60	-	55	-	6.8	49	-	180	-
	Mercury	mg/kg	0.1	80			< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-	-	< 0.1	-	< 0.1	-	< 0.1	< 0.1	-	< 0.1	-
	Nickel	mg/kg	5	1200		310*	< 5	20	17	12	17	8.7	-	-	-	-	9.3	-	63	-	13	9.4	-	6.9	-
	Zinc	mg/kg	5	30 000		700*	85	69	2900	48	620	19	-	-	-	-	97	-	94	-	57	270	-	190	-
pH & CEC	pH	pH units	0.1				-	-	-	-	-	-	-	-	-	-	5.9	-	-	-	-	-	-	-	-
	Cation Exchange Capacity	meq/100g	0.05				-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-
PAH	Acenaphthene	mg/kg	0.5				< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Acenaphthylene	mg/kg	0.5				< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Anthracene	mg/kg	0.5				< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benz(a)anthracene	mg/kg	0.5				< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.5	< 0.5	1.3	< 0.5	0.9	1.3	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(a)pyrene	mg/kg	0.5			0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.2	< 0.5	1.2	< 0.5	1	1.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(a)pyrene TEQ	mg/kg	0.6	3			0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	3.1	0.6	1.9	0.6	1.5	2.2	0.6	0.6	0.6	0.6	0.6
	Benzo(b&j)fluoranthene	mg/kg	0.5				< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	< 0.5	1.3	< 0.5	0.6	0.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(g,h,i)perylene	mg/kg	0.5				< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.9	< 0.5	0.8	< 0.5	0.8	1.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(k)fluoranthene	mg/kg	0.5				< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.8	< 0.5	1	< 0.5	0.7	1.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Chrysene	mg/kg	0.5				< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.9	< 0.5	1.2	< 0.5	1	1.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Dibenz(a,h)anthracene	mg/kg	0.5				< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Fluoranthene	mg/kg	0.5				< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	< 0.5	4.4	< 0.5	3.8	< 0.5	3.5	3.6	< 0.5	< 0.5	< 0.5	0.7	< 0.5
	Fluorene	mg/kg	0.5				< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5				< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.4	< 0.5	0.7	< 0.5	0.6	0.8	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Naphthalene	mg/kg	0.5			370	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Phenanthrene	mg/kg	0.5				< 0.5	< 0.5	< 0.5	< 0.5	0.6	0.7	< 0.5	< 0.5	1.2	< 0.5	2.8	< 0.5	2.2	1.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Pyrene	mg/kg	0.5				< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	< 0.5	4.5	< 0.5	3.3	< 0.5	3.2	3.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5
	Total PAH*	mg/kg	0.5	300			< 0.5	< 0.5	< 0.5	< 0.5	1.8	1.3	< 0.5	< 0.5	22	< 0.5	18	< 0.5	14.5	16.6	< 0.5	< 0.5	< 0.5	1.3	< 0.5
BTEX	Benzene	mg/kg	0.1		3	50	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Ethylbenzene	mg/kg	0.1		NL	70	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Toluene	mg/kg	0.1		NL	85	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Xylenes - Total	mg/kg	0.3		230	105	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
TRH	Naphthalene	mg/kg	0.5		NL	170	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	TRH C6-C10	mg/kg	20			180	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
	TRH C6-C10 less BTEX (F1)	mg/kg	20		260		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
	TRH >C10-C16	mg/kg	50			120	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 250	< 50	< 50
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50		NL		< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 250	< 50	< 50
	TRH >C16-C34	mg/kg	100		NL	300	< 100	< 100	200	< 100	280	150	< 100	< 100	200	< 100	< 100	< 100	< 100	120	< 100	190	340	130	< 100
	TRH >C34-C40	mg/kg	100		NL	2800	< 100	< 100	200	< 100	< 100	< 100	110	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	170	< 100	< 100

Notes

\* EIL based on pH of 5.9, CEC of 11meq/100ml, and clay content 10%. Ambient background concentrations (ABCs) calculated from Trace Element Concentrations in Soils from Rural and Urban Areas of Australia (1995) - old suburbs, high traffic, 25 percentile.

ND Not Detected

NL Non Limiting

Result Concentration exceeds adopted Health Investigation Level (Recreational)

Result Concentration exceeds adopted Health Screening Level (Commercial)

Result Concentration exceeds adopted Ecological Investigation/Screening Level

1 ASC NEPM (2013) - Health Investigation Levels (Recreational/Open Space)

2 ASC NEPM (2013) - Soil Health Screening Levels for Vapour Intrusion, Commercial/Industrial, Sand, 0m to <1m

3 ASC NEPM (2013) - Ecological Investigation and Screening Levels (Recreational/Open Space)



Table 1: Soil Analytical Results - TRH, BTEX, PAH, Metals  
Proposed Stables Development, Darling Street, Broadmeadow NSW



						Field ID	SS6 0.0-0.1	SS7 0.0-0.1	SS8 0.0-0.1
						Date	13/05/2021	13/05/2021	13/05/2021
Analytes		Units	LOR	HIL/HSL C	HSL D	EIL/ESL C			
Metals	Arsenic	mg/kg	2	300		100	5.6	5.8	3.8
	Cadmium	mg/kg	0.4	90			0.6	1.4	< 0.4
	Chromium	mg/kg	5	300		670*	17	26	7.4
	Copper	mg/kg	5	17000		290*	59	50	45
	Lead	mg/kg	5	600		1100	220	500	89
	Mercury	mg/kg	0.1	80			< 0.1	< 0.1	< 0.1
	Nickel	mg/kg	5	1200		310*	17	16	9.4
	Zinc	mg/kg	5	30 000		700*	390	820	83
pH & CEC	pH	pH units	0.1				-	-	-
	Cation Exchange Capacity	meq/100g	0.05				-	-	-
PAH	Acenaphthene	mg/kg	0.5				< 0.5	< 0.5	< 0.5
	Acenaphthylene	mg/kg	0.5				< 0.5	< 0.5	< 0.5
	Anthracene	mg/kg	0.5				< 0.5	< 0.5	< 0.5
	Benz(a)anthracene	mg/kg	0.5				< 0.5	< 0.5	< 0.5
	Benzo(a)pyrene	mg/kg	0.5			0.7	< 0.5	< 0.5	< 0.5
	Benzo(a)pyrene TEQ	mg/kg	0.6	3			0.6	0.6	0.6
	Benzo(b&j)fluoranthene	mg/kg	0.5				< 0.5	< 0.5	< 0.5
	Benzo(g,h,i)perylene	mg/kg	0.5				< 0.5	< 0.5	< 0.5
	Benzo(k)fluoranthene	mg/kg	0.5				0.5	< 0.5	< 0.5
	Chrysene	mg/kg	0.5				0.5	< 0.5	< 0.5
	Dibenz(a,h)anthracene	mg/kg	0.5				< 0.5	< 0.5	< 0.5
	Fluoranthene	mg/kg	0.5				0.9	< 0.5	< 0.5
	Fluorene	mg/kg	0.5				< 0.5	< 0.5	< 0.5
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5				< 0.5	< 0.5	< 0.5
	Naphthalene	mg/kg	0.5			370	< 0.5	< 0.5	< 0.5
	Phenanthrene	mg/kg	0.5				< 0.5	< 0.5	< 0.5
	Pyrene	mg/kg	0.5				1	< 0.5	< 0.5
	Total PAH*	mg/kg	0.5	300			2.9	< 0.5	< 0.5
BTEX	Benzene	mg/kg	0.1		3	50	< 0.1	< 0.1	< 0.1
	Ethylbenzene	mg/kg	0.1		NL	70	< 0.1	< 0.1	< 0.1
	Toluene	mg/kg	0.1		NL	85	< 0.1	< 0.1	< 0.1
	Xylenes - Total	mg/kg	0.3		230	105	< 0.3	< 0.3	< 0.3
TRH	Naphthalene	mg/kg	0.5		NL	170	< 0.5	< 0.5	< 0.5
	TRH C6-C10	mg/kg	20			180	< 20	< 20	< 20
	TRH C6-C10 less BTEX (F1)	mg/kg	20		260		< 20	< 20	< 20
	TRH >C10-C16	mg/kg	50			120	< 50	< 250	< 50
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50		NL		< 50	< 250	< 50
	TRH >C16-C34	mg/kg	100		NL	300	< 100	760	< 100
	TRH >C34-C40	mg/kg	100		NL	2800	< 100	360	< 100

Notes

- EIL based on pH of 5.9, CEC of 11meq/100ml, and clay content 10%. Ambient background concentrations (ABCs) calculated from Trace Element Concentrations in Soils from Rural and Urban Areas of Australia (1995) - old suburbs, high traffic, 25 percentile.
- NDNot Detected
- NLNon Limiting
- Result

Concentration exceeds adopted Health Investigation Level (Recreational)
- Result

Concentration exceeds adopted Health Screening Level (Commercial)
- Result

Concentration exceeds adopted Ecological Investigation/Screening Level
- 1 ASC NEPM (2013) - Health Investigation Levels (Recreational/Open Space)
- 2 ASC NEPM (2013) - Soil Health Screening Levels for Vapour Intrusion, Commercial/Industrial, Sand, (
- 3 ASC NEPM (2013) - Ecological Investigation and Screening Levels (Recreational/Open Space)

Table 2: Soil Analytical Results - OCPs  
Proposed Stables Development, Darling Street, Broadmeadow NSW



					Field ID	BH15 0.0-0.1	BH18 0.0-0.1	BH24 0.0-0.1	SS6 0.0-0.1	SS7 0.0-0.1
					Date	12/05/2021	12/05/2021	12/05/2021	13/05/2021	13/05/2021
Analytes		Units	EQL	HIL-C <sup>1</sup>	EIL C/ESL C <sup>3</sup>					
OCPs	4.4'-DDD	mg/kg	0.05	400		< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	4.4'-DDE	mg/kg	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	4.4'-DDT	mg/kg	0.05		180	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	a-BHC	mg/kg	0.05	10		< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	Aldrin	mg/kg	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	Dieldrin	mg/kg	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	b-BHC	mg/kg	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	Chlordanes - Total	mg/kg	0.1	70		< 0.1	< 0.1	< 0.1	< 0.1	< 1
	d-BHC	mg/kg	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	Endosulfan I	mg/kg	0.05	340		< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	Endosulfan II	mg/kg	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	Endosulfan sulphate	mg/kg	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	Endrin	mg/kg	0.05	20		< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	Endrin aldehyde	mg/kg	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	Endrin ketone	mg/kg	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	g-BHC (Lindane)	mg/kg	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	Heptachlor	mg/kg	0.05	10		< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	Heptachlor epoxide	mg/kg	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	Hexachlorobenzene	mg/kg	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.5
	Methoxychlor	mg/kg	0.05	400		< 0.2	< 0.2	< 0.2	< 0.2	< 0.5
	Toxaphene	mg/kg	1	30		< 0.1	< 0.1	< 0.1	< 0.1	< 10

Notes

Result	Concentration exceeds adopted Health Investigation Level (Recreational)
Result	Concentration exceeds adopted Ecological Investigation/Screening Level

1 ASC NEPM (2013) - Health Investigation Levels (Recreational/Open Space)  
3 ASC NEPM (2013) - Ecological Investigation and Screening Levels (Recreational/Open Space)

Table 3: Soil Analytical Results - Asbestos  
Proposed Stables Development, Darling Street, Broadmeadow NSW



				Field ID	BH13 0.0-0.2	BH14 0.0-0.2	BH15 0.0-0.2	BH16 0.0-0.2	BH17 0.0-0.2	BH18 0.0-0.2	BH19 0.0-0.2	BH20 0.0-0.2	BH21 0.0-0.2	BH21 0.4-0.5	BH22 0.0-0.2	BH23 0.0-0.2
				Date	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021
				Material	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Analytes		Units	LOR	HSL A <sup>1</sup>												
Asbestos	Asbestos (AF & FA quantitative)	% w/w	0.001	0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-
	Asbestos (ACM quantitative)*	% w/w		0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

				Field ID	BH24 0.0-0.2	BH25 0.0-0.2	BH26 0.0-0.2	BH27 0.0-0.2	SS1 0.0-0.2	SS2 0.0-0.2	SS3 0.0-0.1	SS4 0.0-0.2	SS5 0.0-0.2	SS6 0.0-0.2	SS7 0.0-0.2	SS8 0.0-0.2
				Date	12/05/2021	12/05/2021	12/05/2021	12/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021
				Material	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Analytes		Units	LOR	HSL A <sup>1</sup>												
Asbestos	Asbestos (AF & FA quantitative)	% w/w	0.001	0.001	<0.001	<0.001	-	<0.001	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
	Asbestos (ACM quantitative)*	% w/w		0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes

\* Assessed and calculated by Qualtest: % w/w asbestos in soil = (% asbestos content x bonded ACM (kg) / (soil

- Not analysed

ND Not detected

Result Concentration exceeds adopted health screening level, Asbestos (Recreational)

1 NEPC (2013) Soil Health Screening Levels for Asbestos, Recreational C





## **APPENDIX C:**

### **Groundwater Bore Search**


An aerial photograph of a residential neighborhood with a white speech bubble overlay. The speech bubble contains text about a site within 500 metres. A small red square icon with a white 'X' is located to the right of the text. The background shows houses, streets, and green spaces.

There is **1 site** within 500 metres of the selected point.



GW058191

GW058191

A small black dot on the aerial map, located to the right of the text 'GW058191', indicating the specific site location.

WaterNSW

Work Summary

GW058191

Licence:	Licence Status:
	Authorised Purpose(s): Intended Purpose(s): GENERAL USE
Work Type: Spear	
Work Status:	
Construct,Method: Jetted	
Owner Type: Private	
Commenced Date:	Final Depth: 4.00 m
Completion Date: 01/12/1982	Drilled Depth:
Contractor Name: (None)	
Driller:	
Assistant Driller:	
Property:	Standing Water Level (m):
GWMA:	Salinity Description:
GW Zone:	Yield (L/s):

Site Details

Site Chosen By:			
	County Form A: NORTHUMBERLAND Licensed:	Parish NEWCA	Cadastre 268
Region: 20 - Hunter	CMA Map: 9232-3S		
River Basin: 210 - HUNTER RIVER	Grid Zone:		Scale:
Area/District:			
Elevation: 0.00 m (A.H.D.)	Northing: 6355453.000		Latitude: 32°55'58.3"S
Elevation Source: (Unknown)	Easting: 382335.000		Longitude: 151°44'29.1"E
GS Map: -	MGA Zone: 56		Coordinate Source: GD,,ACC.MAP

\*\*\* End of GW058191 \*\*\*

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

## **APPENDIX D:**

### **Historical Titles**

# **ADVANCE LEGAL SEARCHERS PTY LTD**

(ACN 147 943 842)  
ABN 82 147 943 842

18/36 Osborne Road,  
Manly NSW 2095

Telephone: +612 9977 6713  
Mobile: 0412 169 809  
Email: [search@alsearchers.com.au](mailto:search@alsearchers.com.au)

03<sup>rd</sup> May, 2021

## **QUALTEST LABORATORY (NSW) PTY LTD**

8 Ironbark Close,  
**WARABROOK NSW 2304**

**Attention: Stephanie Cullen,**

**RE:**

**Darling Street,  
&  
125 Chatham Street,  
Broadmeadow  
PO NEW20P-0194**

## **Current Search**

Folio Identifier 13/227704 (title attached)

DP 227704 (plan attached)

Dated 03<sup>rd</sup> May, 2021

Registered Proprietor:

**THE NEWCASTLE JOCKEY CLUB LIMITED**

**Title Tree**  
**Lot 13 DP 227704**

Folio Identifier 13/227704

Certificate of Title Volume 10209 Folio 157

Certificate of Title Volume 5607 Folio 191

Certificate of Title Volume 5471 Folio 210

PA 35494

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

**(a)**

Conv Book 810 No 901

\*\*\*\*

**(b)**

Conv Book 814 No 335

\*\*\*\*

**(c)**

Conv Book 1049 No 242

\*\*\*\*

**(d)**

Conveyance Book 1091 No 233

\*\*\*\*

## Summary of Proprietor(s) Lot 13 DP 227704

Year	Proprietor(s)
	<b>(Lot 13 DP 227704)</b>
1987 – todate	The Newcastle Jockey Club Limited
(2020 – todate)	<i>(current lease to Newcastle Equine Veterinary Services Pty Limited of part)</i>
(2015 – todate)	<i>(current lease to Rumpus Room Children’s Centre Pty Limited of 121-123 Chatham Street, Broadmeadow)</i>
(1987 – todate)	<i>(various leases shown on Historical Folio 13/227704)</i>
	<b>(Lot 13 DP 227704 – CTVol 10209 Fol 157)</b>
1966 – 1987	The Newcastle Jockey Club Limited
(1986 – 2004)	<i>(lease to William Herbert Rutledge and Kevin Johns, of building known as “The Newcastle Hunter and Central Coast Racing Association office, Chatham Road, Broadmeadow)</i>
(1983 – 1985)	<i>(lease to Roy Bede Mahony, Harry Reginald Hayes &amp; William James Meredith, of offices No 2 Lowe Street, Hamilton)</i>
	<b>(Lots 1 to 5 and part Lots 8 &amp; 9 Section Y Australian Agricultural Company’s Subdivision – Area 127 Acres 3 Roods 19 Perches – CTVol 5607 Fol 191)</b>
1946 – 1966	The Newcastle Jockey Club Limited
	<b>(Lots 1 to 6 and part Lots 8 &amp; 9 Section Y Australian Agricultural Company’s Subdivision – Area 188 Acres 1 Roods 14 Perches – CTVol 5471 Fol 210)</b>
1945 – 1946	The Newcastle Jockey Club Limited

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

### Note (a)

	<b>(Lot 5 Section Y Australian Agricultural Company’s Subdivision – Area 3 Acres 2 Roods 0 Perches – Conv Bk 810 No 901)</b>
1906 – 1945	The Newcastle Jockey Club Limited
Prior – 1906	The Australian Agricultural Company

\*\*\*\*\*



**Note (b)**

	<b>(Lots 2, 3 &amp; 4 Section Y Australian Agricultural Company's Subdivision – Area 5 Acres 3 Roods 32 Perches – Conv Bk 814 No 335)</b>
1906 – 1945	The Newcastle Jockey Club Limited
Prior – 1906	The Australian Agricultural Company

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**Note (c)**

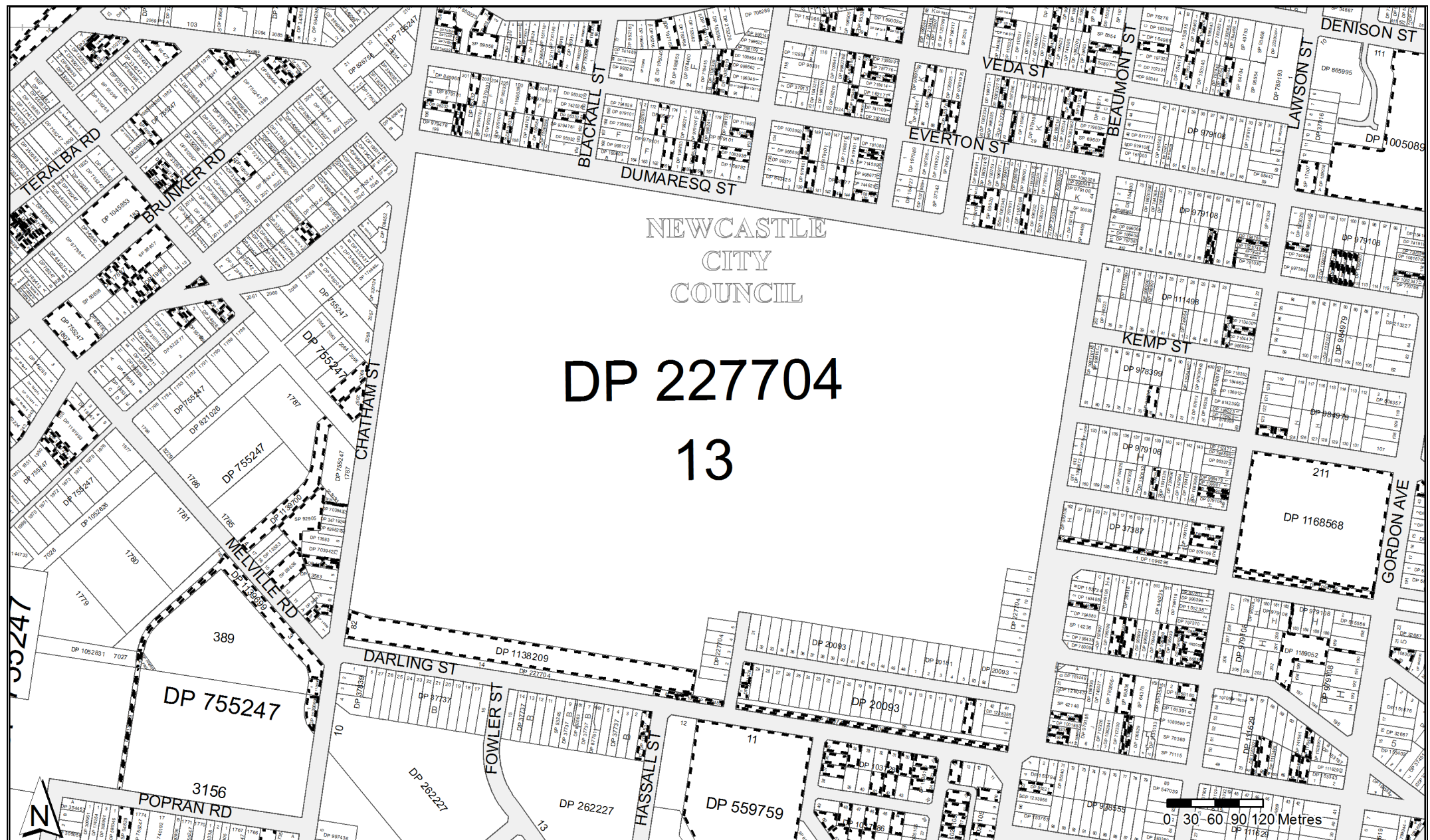
	<b>(Lots 1 Section Y Australian Agricultural Company's Subdivision – Area 95 Acres 3 Roods 22 Perches – Conv Bk 1049 No 242)</b>
1914 – 1945	The Newcastle Jockey Club Limited
Prior – 1914	The Australian Agricultural Company


























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**Note (d)**






















	<b>(Part Lot 8 Section Y Australian Agricultural Company's Subdivision – Area 18 Acres 3 Roods 14 ¾ Perches – Conv Bk 1091 No 233)</b>
1915 – 1945	The Newcastle Jockey Club Limited
Prior – 1915	The Australian Agricultural Company

\*\*\*\*\*



	Status	Surv/Comp	Purpose
DP17897			
Lot(s): 1, 2, 3			
 DP1266913	PRE-ALLOCATED	UNAVAILABLE	REDEFINITION
 SP101984	PRE-ALLOCATED	UNAVAILABLE	STRATA PLAN
DP19588			
Lot(s): 9, 10, 11			
 DP1266913	PRE-ALLOCATED	UNAVAILABLE	REDEFINITION
 SP101984	PRE-ALLOCATED	UNAVAILABLE	STRATA PLAN
DP20093			
Lot(s): 8			
 DP1256337	REGISTERED	SURVEY	EASEMENT
DP36910			
Lot(s): 2			
 CA92121 - LOT 2 DP36910			
DP37516			
Lot(s): 5			
 DP1204888	REGISTERED	SURVEY	REDEFINITION
DP95221			
Lot(s): 22			
 CA92030 - LOT 22 DP95221			
DP95222			
Lot(s): 81			
 CA92062 - LOT 81 DP95222			
DP95330			
Lot(s): 109			
 CA90992 - LOT 109 DP95330 AND LOT 103 DP1077999			
DP95332			
Lot(s): 197			
 CA91610 - LOT 197 DP95332			
Lot(s): 202			
 CA91628 - LOT 202 DP95332			
Lot(s): 181			
 CA91823 - LOT 181 DP95332			
Lot(s): 189			
 CA91732 - LOT 189 DP95332			
DP95336			
Lot(s): 75			
 CA92246 - LOT 75 DP95336			
DP95337			
Lot(s): 175			
 CA91716 - LOT 175 DP95337			
Lot(s): 174			
 CA98474 - LOT 174 DP95337			
DP95344			
Lot(s): 29			
 CA91621 - LOT 29 DP95344			
Lot(s): 8			
 CA92037 - LOT 8 DP95344			
DP95377			
Lot(s): 140			
 CA91814 - LOT 140 DP95377			
Lot(s): 173			
 CA92251 - LOT 173 DP95377			
Lot(s): 143			
 CA91568 - LOT 143 DP95377			
Lot(s): 159			
 CA91801 - LOT 159 DP95377			
Lot(s): 161			
 CA91802 - LOT 161 DP95377			
Lot(s): 158			
 CA91803 - LOT 158 DP95377			























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	Status	Surv/Comp	Purpose
Lot(s): 150  CA92255 - LOT 150 DP95377			
DP111629 Lot(s): 68  DP1113486	REGISTERED	SURVEY	SUBDIVISION
DP117840 Lot(s): 1  CA92087 - LOT 1 DP117840			
DP150602 Lot(s): 2  CA89198 - LOT 2 DP150602			
DP151702 Lot(s): 1  CA105077 - LOT 1 DP151702			
DP151948 Lot(s): 1  CA91417 - LOT 1 DP151948			
DP153761 Lot(s): 1  DP1044318	REGISTERED	COMPILATION	EASEMENT
Lot(s): 2  CA91712 - LOT 2 DP153761			
DP154897 Lot(s): 4  CA89054 - LOT 4 DP154897			
DP159584 Lot(s): 1  CA91626 - LOT 1 DP159584			
DP162171 Lot(s): B  CA91504 - LOT B DP162171			
DP164986 Lot(s): 2  CA91524 - LOT 2 DP164986			
DP194478 Lot(s): 1  DP994008	HISTORICAL	UNAVAILABLE	UNRESEARCHED
DP334397 Lot(s): A, B, C  DP994052	HISTORICAL	COMPILATION	UNRESEARCHED
DP343663 Lot(s): A  DP1123836	REGISTERED	SURVEY	EASEMENT
DP355336 Lot(s): 1  DP649895	REGISTERED	COMPILATION	EASEMENT
DP400929 Lot(s): B, C  DP649895	REGISTERED	COMPILATION	EASEMENT
DP403122 Lot(s): A  DP1159741	REGISTERED	SURVEY	SUBDIVISION
 DP1227321	REGISTERED	SURVEY	SUBDIVISION
DP536950 Lot(s): 160  DP994006	HISTORICAL	UNAVAILABLE	UNRESEARCHED
DP559759 Lot(s): 11  DP227016	HISTORICAL	SURVEY	SUBDIVISION

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









	Status	Surv/Comp	Purpose
DP568980 Lot(s): 1			
CA91514 - LOT 1 DP568980			
DP600850 Lot(s): 750			
DP266578	REGISTERED	SURVEY	EASEMENT
DP755247 Lot(s): 1806			
CA92071 - LOT 1806 DP755247			
Lot(s): 1807			
DP1189760	REGISTERED	SURVEY	SURVEY INFORMATION ONLY
CA92075 - LOT 1807 DP755247			
Lot(s): 2066, 2067			
DP994131	HISTORICAL	SURVEY	SURVEY INFORMATION ONLY
DP782057 Lot(s): 1			
DP1263044	PRE-ALLOCATED	UNAVAILABLE	DELIMITATION
DP783353 Lot(s): 1			
DP994008	HISTORICAL	UNAVAILABLE	UNRESEARCHED
DP794967 Lot(s): 1			
DP994007	HISTORICAL	COMPILATION	UNRESEARCHED
DP868359 Lot(s): 10, 11			
DP994007	HISTORICAL	COMPILATION	UNRESEARCHED
DP978400 Lot(s): 123			
SEE DP95219			
DP979101 Lot(s): 208 Section : F			
CA90492 - LOT 208 SECTION F DP979101			
DP1005089 Lot(s): 112			
DP858527	HISTORICAL	SURVEY	SUBDIVISION
DP1012321 Lot(s): 1, 2, 3, 4			
DP755247	HISTORICAL	COMPILATION	CROWN ADMIN NO.
DP1016517 Lot(s): 11, 12			
DP37737	HISTORICAL	SURVEY	UNRESEARCHED
DP1026105 Lot(s): 7, 10, 14, 15, 16, 17, 18, 22, 23, 24			
DP354397	HISTORICAL	SURVEY	UNRESEARCHED
DP1034735 Lot(s): 111			
DP37739	HISTORICAL	SURVEY	UNRESEARCHED
DP859205	HISTORICAL	COMPILATION	PRIMARY APPLN NON SUBDIVISION
DP1029330	HISTORICAL	SURVEY	SUBDIVISION
DP1036655 Lot(s): 1			
DP994008	HISTORICAL	UNAVAILABLE	UNRESEARCHED
DP1037286 Lot(s): 30, 31, 34, 35, 36, 37, 41, 42, 44, 46, 48, 50, 51, 52, 53			
DP354397	HISTORICAL	SURVEY	UNRESEARCHED
DP1026105	HISTORICAL	SURVEY	SUBDIVISION
DP1045853 Lot(s): 183			
DP326807	HISTORICAL	SURVEY	UNRESEARCHED
DP342940	HISTORICAL	SURVEY	UNRESEARCHED

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














	Status	Surv/Comp	Purpose
DP1045944 Lot(s): 1  CA87176 - LOT 1 DP1045944			
DP1046106 Lot(s): 13  CA87225 - LOT 13 DP1046106			
DP1047369 Lot(s): 16  CA87417 - LOT 16 DP1047369			
DP1053021 Lot(s): 692  DP111629	HISTORICAL	COMPILATION	DEPARTMENTAL
DP1054079 Lot(s): 5  CA88119 - LOT 5 DP1054079			
DP1057884 Lot(s): 1  CA88531 - LOT 1 DP1057884			
DP1058180 Lot(s): 1  DP153333	HISTORICAL	COMPILATION	UNRESEARCHED
DP1060371 Lot(s): 201  DP755247	HISTORICAL	COMPILATION	CROWN ADMIN NO.
DP1063551 Lot(s): 3  CA89260 - LOT 3 DP1063551			
DP1064111 Lot(s): 1, 2  DP1047705	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
 CA87468 - LOT 8 DP1047705			
DP1071691 Lot(s): 201  CA90187 - LOT 201 DP1071691			
DP1074355 Lot(s): 177  CA90617 - LOT 177 DP1074355			
DP1078476 Lot(s): 1, 2  DP137212	HISTORICAL	COMPILATION	DEPARTMENTAL
DP1078908 Lot(s): 1481, 1482  DP979106	HISTORICAL	COMPILATION	UNRESEARCHED
DP1079176 Lot(s): 11, 12  CA91280 - LOT 12 DP1079176			
Lot(s): 11  CA91279 - LOT 11 DP1079176			
DP1079322 Lot(s): 2  DP979108	HISTORICAL	COMPILATION	UNRESEARCHED
 DP1079234	HISTORICAL	SURVEY	SUBDIVISION
DP1081153 Lot(s): 38  CA91871 - LOT 38 DP1081153			
DP1081686 Lot(s): 8  CA92386 - LOT 8 DP1081686			
DP1081697 Lot(s): 132  CA92384 - LOT 132 DP1081697			

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


























	Status	Surv/Comp	Purpose
DP1082019 Lot(s): 92			
 CA92618 - LOT 92 DP1082019			
DP1082032 Lot(s): 14			
 DP994007	HISTORICAL	COMPILATION	UNRESEARCHED
 CA92638 - LOT 14 DP1082032			
DP1082040 Lot(s): 15			
 CA92924 - LOT 15 DP1082040			
DP1082063 Lot(s): 94			
 CA92551 - LOT 94 DP1082063			
DP1083003 Lot(s): 31			
 CA93209 - PART LOT 3 SECTION H. DP979108			
DP1083006 Lot(s): 20			
 CA93249 - LOT 20 SECTION 5 DP32687			
DP1083709 Lot(s): 66			
 CA93748 - LOT 66 DP1083709			
DP1083936 Lot(s): 1			
 DP95377	HISTORICAL	SURVEY	UNRESEARCHED
 DP1081313	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
 CA92154 - LOT 154 DP95377			
DP1084385 Lot(s): 8			
 CA94111 - LOT 8 DP1084385			
DP1089648 Lot(s): 1			
 DP397120	HISTORICAL	SURVEY	UNRESEARCHED
DP1094296 Lot(s): 2			
 CA98359 - LOTS 1 AND 2 DP1094296			
DP1097485 Lot(s): 100			
 CA99342 - LOT 100 DP1097485			
DP1099667 Lot(s): 1121			
 DP979108	HISTORICAL	COMPILATION	UNRESEARCHED
DP1102094 Lot(s): 28			
 CA101325 - LOT 28 DP1102094			
DP1103821 Lot(s): 1, 2			
 DP979108	HISTORICAL	COMPILATION	UNRESEARCHED
DP1109890 Lot(s): 13			
 CA104455 - LOT 13 DP1109890			
DP1109965 Lot(s): 147			
 CA104265 - LOT 147 DP1109965			
DP1110016 Lot(s): 180			
 CA104266 - LOT 180 DP1110016			
DP1112281 Lot(s): 51, 52			
 DP755247	HISTORICAL	COMPILATION	CROWN ADMIN NO.

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	Status	Surv/Comp	Purpose
DP1122139 Lot(s): 212  DP879044	HISTORICAL	SURVEY	SUBDIVISION
DP1138209 Lot(s): 81, 82  CA137881 - LOTS 81 AND 82 DP1138209			
DP1139699 Lot(s): 1, 2, 3  CA145217 - LOTS 1-3 DP1139699 AND LOT 4 DP1139700			
DP1139700 Lot(s): 4  CA145217 - LOTS 1-3 DP1139699 AND LOT 4 DP1139700			
DP1139744 Lot(s): 4  CA145571 - LOT 4 DP1139744 AND LOT 5 DP1139745			
DP1139745 Lot(s): 5  CA145571 - LOT 4 DP1139744 AND LOT 5 DP1139745			
DP1147134 Lot(s): 651  DP111629	HISTORICAL	COMPILATION	DEPARTMENTAL
Lot(s): 652  CA150149 - LOT 652 DP1147134			
DP1151219 Lot(s): 1, 2  CA133276 - LOT 1 DP1151219			
Lot(s): 2  CA153133 - LOT 2 DP115129			
DP1159741 Lot(s): 412  DP1227321	REGISTERED	SURVEY	SUBDIVISION
Lot(s): 411, 412  DP755247	HISTORICAL	COMPILATION	CROWN ADMIN NO.
DP1160293 Lot(s): 1260, 1261  DP1055310	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
 CA88353 - LOT 126 DP1055310			
Lot(s): 1261  DP799093	HISTORICAL	COMPILATION	DEPARTMENTAL
DP1161828 Lot(s): 21, 22  DP397120	HISTORICAL	SURVEY	UNRESEARCHED
 DP1089648	HISTORICAL	SURVEY	SUBDIVISION
DP1167243 Lot(s): 1, 2  DP979108	HISTORICAL	COMPILATION	UNRESEARCHED
DP1168400 Lot(s): 10  CA130852 - LOT 10 DP1168400			
DP1168568 Lot(s): 211  CA139051 - LOT 211 DP1168568			
DP1181993 Lot(s): 100  DP755247	HISTORICAL	COMPILATION	CROWN ADMIN NO.
DP1187008 Lot(s): 2  CA167904 - LOT 2 DP1187008			
DP1189052 Lot(s): 1  CA168985 - LOT 1 DP1189052			




























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	Status	Surv/Comp	Purpose
DP1191328 Lot(s): 1, 2  DP20093	HISTORICAL	SURVEY	UNRESEARCHED
DP1198222 Lot(s): 102  DP210660	HISTORICAL	SURVEY	SUBDIVISION
DP1203600 Lot(s): 1, 2, 3  DP979108	HISTORICAL	COMPILATION	UNRESEARCHED
Lot(s): 3  DP196167	HISTORICAL	COMPILATION	DEPARTMENTAL
DP1206890 Lot(s): 1, 2  DP309582	HISTORICAL	COMPILATION	UNRESEARCHED
DP1210672 Lot(s): 181, 182  DP557459	HISTORICAL	SURVEY	SUBDIVISION
DP1212891 Lot(s): 1, 2  DP979101	HISTORICAL	COMPILATION	UNRESEARCHED
DP1224926 Lot(s): 13  DP333529	HISTORICAL	COMPILATION	UNRESEARCHED
DP1227321 Lot(s): 1, 2  DP755247	HISTORICAL	COMPILATION	CROWN ADMIN NO.
 DP1159741	HISTORICAL	SURVEY	SUBDIVISION
DP1231619 Lot(s): 16  DP172729	HISTORICAL	COMPILATION	UNRESEARCHED
 DP173225	HISTORICAL	COMPILATION	UNRESEARCHED
 DP173226	HISTORICAL	COMPILATION	UNRESEARCHED
 DP173227	HISTORICAL	SURVEY	UNRESEARCHED
 DP173327	HISTORICAL	SURVEY	UNRESEARCHED
 DP173548	HISTORICAL	COMPILATION	UNRESEARCHED
 DP173813	HISTORICAL	COMPILATION	UNRESEARCHED
 DP173844	HISTORICAL	COMPILATION	UNRESEARCHED
 DP173845	HISTORICAL	COMPILATION	UNRESEARCHED
 DP174286	HISTORICAL	COMPILATION	UNRESEARCHED
 DP174490	HISTORICAL	COMPILATION	UNRESEARCHED
 DP190969	HISTORICAL	COMPILATION	UNRESEARCHED
 DP662911	HISTORICAL	COMPILATION	DEPARTMENTAL
 DP1006738	HISTORICAL	SURVEY	SUBDIVISION
 DP1006850	HISTORICAL	SURVEY	REDEFINITION
 DP1067381	HISTORICAL	SURVEY	SUBDIVISION
 DP1147480	HISTORICAL	SURVEY	SUBDIVISION
 CA89899 - LOTS 51-52 DP1067381			
Lot(s): 12, 16  DP1006358	HISTORICAL	SURVEY	RESUMPTION OR ACQUISITION
 DP1070943	REGISTERED	SURVEY	SURVEY INFORMATION ONLY
 CA174911 - NPW			
 CA176260 - LOTS 11-12 AND 16 DP1231619			
DP1232702 Lot(s): 1, 2  DP755247	HISTORICAL	COMPILATION	CROWN ADMIN NO.
DP1236106 Lot(s): 1, 2  DP984979	HISTORICAL	COMPILATION	UNRESEARCHED

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	Status	Surv/Comp	Purpose
DP1246910			
Lot(s): 10			
 DP196469	HISTORICAL	COMPILATION	DEPARTMENTAL
 CA129885 - LOT 932 DP1126329			
DP1253244			
Lot(s): 1, 2			
 DP13583	HISTORICAL	SURVEY	UNRESEARCHED
DP1253899			
Lot(s): 21, 22			
 DP13583	HISTORICAL	SURVEY	UNRESEARCHED
DP1254586			
Lot(s): 1, 2			
 DP979108	HISTORICAL	COMPILATION	UNRESEARCHED
DP1270224			
Lot(s): 243			
 DP333722	HISTORICAL	SURVEY	UNRESEARCHED
 DP755247	HISTORICAL	COMPILATION	CROWN ADMIN NO.
DP1271453			
Lot(s): 100			
 DP744442	HISTORICAL	COMPILATION	DEPARTMENTAL
SP17007			
 SP70564	REGISTERED	COMPILATION	STRATA SUBDIVISION PLAN
SP37492			
 SP91578	REGISTERED	COMPILATION	STRATA SUBDIVISION PLAN
SP65477			
 DP755247	HISTORICAL	COMPILATION	CROWN ADMIN NO.
 DP1027858	HISTORICAL	SURVEY	SUBDIVISION
SP66836			
 DP1032967	HISTORICAL	SURVEY	OLD SYSTEM CONVERSION
SP69087			
 DP846148	HISTORICAL	SURVEY	PRIMARY APPLN NON SUBDIVISION
SP69607			
 DP745286	HISTORICAL	COMPILATION	DEPARTMENTAL
 DP1048639	HISTORICAL	SURVEY	DELIMITATION
SP73895			
 DP1011076	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
 DP1070815	HISTORICAL	SURVEY	OLD SYSTEM CONVERSION
 PA81644 - LOT 12 DP1070815			
SP86995			
 DP755247	HISTORICAL	COMPILATION	CROWN ADMIN NO.
 DP1175141	HISTORICAL	SURVEY	REDEFINITION
SP89620			
 DP742958	HISTORICAL	COMPILATION	DEPARTMENTAL
 DP1022047	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
 DP1129576	HISTORICAL	SURVEY	DELIMITATION
SP91328			
 DP163271	HISTORICAL	SURVEY	UNRESEARCHED
 DP1204888	HISTORICAL	SURVEY	REDEFINITION
 CA91548 - LOT A DP163271			
SP92905			
 DP703942	HISTORICAL	SURVEY	SUBDIVISION
 DP1209431	HISTORICAL	SURVEY	REDEFINITION
SP94829			
 DP586345	HISTORICAL	SURVEY	SUBDIVISION
 DP1227511	HISTORICAL	SURVEY	REDEFINITION
SP98657			
 DP755247	HISTORICAL	COMPILATION	CROWN ADMIN NO.
 DP1242006	HISTORICAL	SURVEY	SUBDIVISION

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		<b>Status</b>	<b>Surv/Comp</b>	<b>Purpose</b>
SP98710				
	DP403122	HISTORICAL	SURVEY	UNRESEARCHED
	DP1246752	HISTORICAL	SURVEY	REDEFINITION
SP99558				
	DP37739	HISTORICAL	SURVEY	UNRESEARCHED
	DP859205	HISTORICAL	COMPILATION	PRIMARY APPLN NON SUBDIVISION
	DP1029330	HISTORICAL	SURVEY	SUBDIVISION
	DP1251913	HISTORICAL	SURVEY	CONSOLIDATION
SP99636				
	DP13583	HISTORICAL	SURVEY	UNRESEARCHED
	DP1253326	HISTORICAL	SURVEY	CONSOLIDATION
SP101948				
	DP1256198	HISTORICAL	SURVEY	CONSOLIDATION
SP102706				
	DP397120	HISTORICAL	SURVEY	UNRESEARCHED
	DP1268265	HISTORICAL	SURVEY	REDEFINITION

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Plan	Surv/Comp	Purpose
DP13583	SURVEY	UNRESEARCHED
DP17897	SURVEY	UNRESEARCHED
DP18347	SURVEY	UNRESEARCHED
DP19047	SURVEY	UNRESEARCHED
DP19338	SURVEY	UNRESEARCHED
DP19588	SURVEY	UNRESEARCHED
DP20093	SURVEY	UNRESEARCHED
DP20181	SURVEY	UNRESEARCHED
DP22857	SURVEY	UNRESEARCHED
DP32687	SURVEY	UNRESEARCHED
DP36910	COMPILATION	SUBDIVISION
DP36911	COMPILATION	SUBDIVISION
DP37254	SURVEY	UNRESEARCHED
DP37332	SURVEY	UNRESEARCHED
DP37387	SURVEY	UNRESEARCHED
DP37451	SURVEY	UNRESEARCHED
DP37512	SURVEY	UNRESEARCHED
DP37516	SURVEY	UNRESEARCHED
DP37737	SURVEY	UNRESEARCHED
DP37739	SURVEY	UNRESEARCHED
DP37839	SURVEY	UNRESEARCHED
DP37867	SURVEY	UNRESEARCHED
DP37913	SURVEY	UNRESEARCHED
DP37916	SURVEY	UNRESEARCHED
DP39318	SURVEY	UNRESEARCHED
DP40689	COMPILATION	CROWN FOLIO CREATION
DP75471	SURVEY	UNRESEARCHED
DP76276	SURVEY	UNRESEARCHED
DP87913	SURVEY	UNRESEARCHED
DP88443	SURVEY	UNRESEARCHED
DP89947	SURVEY	UNRESEARCHED
DP95216	COMPILATION	UNRESEARCHED
DP95219	COMPILATION	UNRESEARCHED
DP95221	SURVEY	UNRESEARCHED
DP95222	SURVEY	UNRESEARCHED
DP95329	SURVEY	UNRESEARCHED
DP95330	SURVEY	UNRESEARCHED
DP95331	COMPILATION	UNRESEARCHED
DP95332	COMPILATION	UNRESEARCHED
DP95336	COMPILATION	UNRESEARCHED
DP95337	COMPILATION	UNRESEARCHED
DP95338	COMPILATION	UNRESEARCHED
DP95340	COMPILATION	UNRESEARCHED
DP95344	SURVEY	UNRESEARCHED
DP95345	SURVEY	UNRESEARCHED
DP95377	SURVEY	UNRESEARCHED
DP100361	SURVEY	UNRESEARCHED
DP100362	COMPILATION	UNRESEARCHED
DP102254	SURVEY	UNRESEARCHED
DP111498	COMPILATION	DEPARTMENTAL
DP111629	COMPILATION	DEPARTMENTAL
DP112539	COMPILATION	DEPARTMENTAL
DP117831	COMPILATION	SUBDIVISION
DP117832	COMPILATION	SUBDIVISION
DP117840	COMPILATION	SUBDIVISION
DP119880	COMPILATION	DEPARTMENTAL
DP120392	COMPILATION	DEPARTMENTAL
DP121935	COMPILATION	DEPARTMENTAL
DP132396	COMPILATION	DEPARTMENTAL
DP134273	COMPILATION	DEPARTMENTAL
DP136529	COMPILATION	DEPARTMENTAL
DP136912	COMPILATION	LIMITED FOLIO CREATION
DP137117	COMPILATION	DEPARTMENTAL
DP150032	SURVEY	UNRESEARCHED
DP150352	COMPILATION	UNRESEARCHED

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<b>Plan</b>	<b>Surv/Comp</b>	<b>Purpose</b>
DP150461	COMPILATION	UNRESEARCHED
DP150602	COMPILATION	UNRESEARCHED
DP150603	COMPILATION	UNRESEARCHED
DP151003	COMPILATION	UNRESEARCHED
DP151116	COMPILATION	UNRESEARCHED
DP151238	COMPILATION	UNRESEARCHED
DP151448	COMPILATION	UNRESEARCHED
DP151702	COMPILATION	UNRESEARCHED
DP151876	COMPILATION	UNRESEARCHED
DP151922	COMPILATION	UNRESEARCHED
DP151948	COMPILATION	UNRESEARCHED
DP152066	COMPILATION	UNRESEARCHED
DP152890	COMPILATION	UNRESEARCHED
DP153140	SURVEY	UNRESEARCHED
DP153187	COMPILATION	UNRESEARCHED
DP153343	COMPILATION	UNRESEARCHED
DP153399	SURVEY	UNRESEARCHED
DP153402	COMPILATION	UNRESEARCHED
DP153488	COMPILATION	UNRESEARCHED
DP153592	SURVEY	UNRESEARCHED
DP153624	COMPILATION	UNRESEARCHED
DP153724	COMPILATION	UNRESEARCHED
DP153753	SURVEY	UNRESEARCHED
DP153761	COMPILATION	UNRESEARCHED
DP153794	COMPILATION	UNRESEARCHED
DP153915	SURVEY	UNRESEARCHED
DP154106	COMPILATION	UNRESEARCHED
DP154190	SURVEY	UNRESEARCHED
DP154300	COMPILATION	UNRESEARCHED
DP154412	COMPILATION	UNRESEARCHED
DP154727	SURVEY	UNRESEARCHED
DP154897	SURVEY	UNRESEARCHED
DP159002	SURVEY	UNRESEARCHED
DP159038	SURVEY	UNRESEARCHED
DP159584	COMPILATION	UNRESEARCHED
DP159792	SURVEY	UNRESEARCHED
DP161391	SURVEY	UNRESEARCHED
DP162114	SURVEY	UNRESEARCHED
DP162171	SURVEY	UNRESEARCHED
DP163271	SURVEY	UNRESEARCHED
DP164986	SURVEY	UNRESEARCHED
DP168345	SURVEY	UNRESEARCHED
DP168346	SURVEY	UNRESEARCHED
DP174254	COMPILATION	UNRESEARCHED
DP177332	SURVEY	UNRESEARCHED
DP177417	COMPILATION	UNRESEARCHED
DP177537	SURVEY	UNRESEARCHED
DP178317	SURVEY	UNRESEARCHED
DP178404	SURVEY	UNRESEARCHED
DP179889	COMPILATION	UNRESEARCHED
DP188311	COMPILATION	UNRESEARCHED
DP192619	COMPILATION	UNRESEARCHED
DP193997	COMPILATION	DEPARTMENTAL
DP194478	COMPILATION	DEPARTMENTAL
DP194653	COMPILATION	DEPARTMENTAL
DP194765	COMPILATION	DEPARTMENTAL
DP195046	COMPILATION	DEPARTMENTAL
DP195223	COMPILATION	DEPARTMENTAL
DP195952	COMPILATION	DEPARTMENTAL
DP196202	COMPILATION	DEPARTMENTAL
DP196345	COMPILATION	DEPARTMENTAL
DP196943	COMPILATION	DEPARTMENTAL
DP196977	COMPILATION	DEPARTMENTAL
DP197099	COMPILATION	DEPARTMENTAL
DP197285	COMPILATION	DEPARTMENTAL
DP197286	COMPILATION	DEPARTMENTAL

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

<b>Plan</b>	<b>Surv/Comp</b>	<b>Purpose</b>
DP197322	COMPILATION	DEPARTMENTAL
DP197942	COMPILATION	DEPARTMENTAL
DP197989	COMPILATION	DEPARTMENTAL
DP198404	COMPILATION	DEPARTMENTAL
DP198543	COMPILATION	DEPARTMENTAL
DP198853	COMPILATION	DEPARTMENTAL
DP198905	COMPILATION	DEPARTMENTAL
DP198939	COMPILATION	DEPARTMENTAL
DP199244	COMPILATION	DEPARTMENTAL
DP199270	COMPILATION	DEPARTMENTAL
DP199623	COMPILATION	DEPARTMENTAL
DP199714	COMPILATION	DEPARTMENTAL
DP199731	COMPILATION	DEPARTMENTAL
DP204561	SURVEY	SUBDIVISION
DP211338	SURVEY	SUBDIVISION
DP213226	SURVEY	SUBDIVISION
DP213227	SURVEY	SUBDIVISION
DP217358	SURVEY	SUBDIVISION
DP222277	SURVEY	SUBDIVISION
DP223004	SURVEY	SUBDIVISION
DP223369	SURVEY	SUBDIVISION
DP227704	SURVEY	SUBDIVISION
DP262227	SURVEY	SUBDIVISION
DP300387	SURVEY	UNRESEARCHED
DP300961	COMPILATION	UNRESEARCHED
DP303372	COMPILATION	UNRESEARCHED
DP304118	SURVEY	UNRESEARCHED
DP304381	SURVEY	UNRESEARCHED
DP304937	COMPILATION	UNRESEARCHED
DP305058	COMPILATION	UNRESEARCHED
DP308536	SURVEY	UNRESEARCHED
DP309015	COMPILATION	UNRESEARCHED
DP309444	SURVEY	UNRESEARCHED
DP310119	COMPILATION	UNRESEARCHED
DP310137	SURVEY	UNRESEARCHED
DP310796	COMPILATION	UNRESEARCHED
DP311987	COMPILATION	UNRESEARCHED
DP312348	COMPILATION	UNRESEARCHED
DP312607	SURVEY	UNRESEARCHED
DP312941	SURVEY	UNRESEARCHED
DP314405	SURVEY	UNRESEARCHED
DP314498	COMPILATION	UNRESEARCHED
DP316567	COMPILATION	UNRESEARCHED
DP317014	COMPILATION	UNRESEARCHED
DP317303	COMPILATION	UNRESEARCHED
DP317893	COMPILATION	UNRESEARCHED
DP317903	COMPILATION	UNRESEARCHED
DP320124	COMPILATION	UNRESEARCHED
DP320968	COMPILATION	UNRESEARCHED
DP322592	COMPILATION	UNRESEARCHED
DP326582	COMPILATION	UNRESEARCHED
DP327045	COMPILATION	UNRESEARCHED
DP330003	COMPILATION	UNRESEARCHED
DP330575	COMPILATION	UNRESEARCHED
DP330998	SURVEY	UNRESEARCHED
DP332261	COMPILATION	UNRESEARCHED
DP332921	COMPILATION	UNRESEARCHED
DP332929	COMPILATION	UNRESEARCHED
DP333722	SURVEY	UNRESEARCHED
DP333801	COMPILATION	UNRESEARCHED
DP334038	SURVEY	UNRESEARCHED
DP334047	COMPILATION	UNRESEARCHED
DP334364	COMPILATION	UNRESEARCHED
DP334397	SURVEY	UNRESEARCHED
DP335201	COMPILATION	UNRESEARCHED
DP335249	COMPILATION	UNRESEARCHED

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<b>Plan</b>	<b>Surv/Comp</b>	<b>Purpose</b>
DP335437	COMPILATION	UNRESEARCHED
DP336165	SURVEY	UNRESEARCHED
DP336202	COMPILATION	UNRESEARCHED
DP336268	COMPILATION	UNRESEARCHED
DP337780	SURVEY	UNRESEARCHED
DP340476	SURVEY	UNRESEARCHED
DP340666	SURVEY	UNRESEARCHED
DP342940	SURVEY	UNRESEARCHED
DP343475	COMPILATION	UNRESEARCHED
DP343663	SURVEY	UNRESEARCHED
DP345004	SURVEY	UNRESEARCHED
DP345069	SURVEY	UNRESEARCHED
DP345886	SURVEY	UNRESEARCHED
DP346256	SURVEY	UNRESEARCHED
DP347192	SURVEY	UNRESEARCHED
DP347707	COMPILATION	UNRESEARCHED
DP348264	SURVEY	UNRESEARCHED
DP350089	COMPILATION	UNRESEARCHED
DP354457	COMPILATION	UNRESEARCHED
DP355336	COMPILATION	UNRESEARCHED
DP366946	COMPILATION	UNRESEARCHED
DP366986	SURVEY	UNRESEARCHED
DP367994	COMPILATION	UNRESEARCHED
DP368412	SURVEY	UNRESEARCHED
DP371936	COMPILATION	UNRESEARCHED
DP377913	SURVEY	UNRESEARCHED
DP379043	SURVEY	UNRESEARCHED
DP390735	SURVEY	UNRESEARCHED
DP395042	SURVEY	UNRESEARCHED
DP400929	SURVEY	UNRESEARCHED
DP403122	SURVEY	UNRESEARCHED
DP409599	SURVEY	UNRESEARCHED
DP435357	SURVEY	UNRESEARCHED
DP435949	SURVEY	UNRESEARCHED
DP440806	SURVEY	UNRESEARCHED
DP441070	SURVEY	UNRESEARCHED
DP447636	SURVEY	UNRESEARCHED
DP448711	SURVEY	UNRESEARCHED
DP456095	COMPILATION	DEPARTMENTAL
DP500834	SURVEY	OLD SYSTEM CONVERSION
DP505148	SURVEY	SUBDIVISION
DP508357	SURVEY	SUBDIVISION
DP515586	SURVEY	SUBDIVISION
DP516406	COMPILATION	SUBDIVISION
DP522277	SURVEY	SUBDIVISION
DP522611	SURVEY	SUBDIVISION
DP522870	SURVEY	SUBDIVISION
DP523029	SURVEY	SUBDIVISION
DP523411	SURVEY	SUBDIVISION
DP529943	SURVEY	SUBDIVISION
DP536868	SURVEY	SUBDIVISION
DP536950	SURVEY	SUBDIVISION
DP540225	SURVEY	SUBDIVISION
DP547039	SURVEY	OLD SYSTEM CONVERSION
DP557459	SURVEY	SUBDIVISION
DP559759	COMPILATION	RESUMPTION OR ACQUISITION
DP559891	SURVEY	SUBDIVISION
DP559988	SURVEY	SUBDIVISION
DP563045	SURVEY	SUBDIVISION
DP568980	SURVEY	SUBDIVISION
DP571722	SURVEY	SUBDIVISION
DP571771	SURVEY	OLD SYSTEM CONVERSION
DP581258	SURVEY	SUBDIVISION
DP586345	SURVEY	SUBDIVISION
DP586925	SURVEY	SUBDIVISION
DP595648	SURVEY	SUBDIVISION

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<b>Plan</b>	<b>Surv/Comp</b>	<b>Purpose</b>
DP600850	SURVEY	SUBDIVISION
DP626527	COMPILATION	SUBDIVISION
DP628619	SURVEY	SUBDIVISION
DP660723	COMPILATION	DEPARTMENTAL
DP664615	COMPILATION	DEPARTMENTAL
DP666931	COMPILATION	DEPARTMENTAL
DP666932	COMPILATION	DEPARTMENTAL
DP666933	COMPILATION	DEPARTMENTAL
DP666934	COMPILATION	DEPARTMENTAL
DP666958	COMPILATION	DEPARTMENTAL
DP667015	COMPILATION	DEPARTMENTAL
DP669348	COMPILATION	DEPARTMENTAL
DP669376	COMPILATION	DEPARTMENTAL
DP669392	COMPILATION	DEPARTMENTAL
DP669394	COMPILATION	DEPARTMENTAL
DP669395	COMPILATION	DEPARTMENTAL
DP669396	COMPILATION	DEPARTMENTAL
DP703942	SURVEY	SUBDIVISION
DP706288	SURVEY	OLD SYSTEM CONVERSION
DP707231	COMPILATION	DEPARTMENTAL
DP708452	SURVEY	SUBDIVISION
DP709901	COMPILATION	DEPARTMENTAL
DP709941	COMPILATION	DEPARTMENTAL
DP711607	COMPILATION	DEPARTMENTAL
DP711650	COMPILATION	DEPARTMENTAL
DP712285	COMPILATION	DEPARTMENTAL
DP712326	COMPILATION	DEPARTMENTAL
DP712330	COMPILATION	DEPARTMENTAL
DP712477	COMPILATION	DEPARTMENTAL
DP713400	COMPILATION	DEPARTMENTAL
DP713471	COMPILATION	DEPARTMENTAL
DP714539	COMPILATION	DEPARTMENTAL
DP715967	COMPILATION	DEPARTMENTAL
DP716801	COMPILATION	DEPARTMENTAL
DP716807	COMPILATION	DEPARTMENTAL
DP718352	COMPILATION	DEPARTMENTAL
DP718447	COMPILATION	DEPARTMENTAL
DP719412	COMPILATION	DEPARTMENTAL
DP719414	COMPILATION	DEPARTMENTAL
DP719415	COMPILATION	DEPARTMENTAL
DP719416	COMPILATION	DEPARTMENTAL
DP730556	COMPILATION	DEPARTMENTAL
DP730696	COMPILATION	DEPARTMENTAL
DP734069	COMPILATION	DEPARTMENTAL
DP735925	COMPILATION	DEPARTMENTAL
DP735929	COMPILATION	DEPARTMENTAL
DP736463	COMPILATION	DEPARTMENTAL
DP737521	COMPILATION	DEPARTMENTAL
DP737711	COMPILATION	DEPARTMENTAL
DP737811	COMPILATION	DEPARTMENTAL
DP740192	COMPILATION	CONSOLIDATION
DP741055	COMPILATION	DEPARTMENTAL
DP741103	COMPILATION	DEPARTMENTAL
DP741489	COMPILATION	DEPARTMENTAL
DP741518	COMPILATION	DEPARTMENTAL
DP741561	COMPILATION	DEPARTMENTAL
DP741647	COMPILATION	DEPARTMENTAL
DP742528	COMPILATION	DEPARTMENTAL
DP742534	COMPILATION	DEPARTMENTAL
DP742984	COMPILATION	DEPARTMENTAL
DP744039	COMPILATION	DEPARTMENTAL
DP744076	COMPILATION	DEPARTMENTAL
DP744368	COMPILATION	DEPARTMENTAL
DP744398	COMPILATION	DEPARTMENTAL
DP744519	COMPILATION	DEPARTMENTAL
DP744625	COMPILATION	DEPARTMENTAL

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<b>Plan</b>	<b>Surv/Comp</b>	<b>Purpose</b>
DP744684	COMPILATION	DEPARTMENTAL
DP744752	COMPILATION	DEPARTMENTAL
DP744856	COMPILATION	DEPARTMENTAL
DP745037	COMPILATION	DEPARTMENTAL
DP745107	COMPILATION	DEPARTMENTAL
DP745356	COMPILATION	DEPARTMENTAL
DP745357	COMPILATION	DEPARTMENTAL
DP745477	COMPILATION	DEPARTMENTAL
DP745915	COMPILATION	DEPARTMENTAL
DP746284	SURVEY	SUBDIVISION
DP748223	SURVEY	SUBDIVISION
DP749054	SURVEY	SUBDIVISION
DP755247	COMPILATION	CROWN ADMIN NO.
DP770091	COMPILATION	DEPARTMENTAL
DP770148	COMPILATION	DEPARTMENTAL
DP770319	COMPILATION	DEPARTMENTAL
DP770373	COMPILATION	DEPARTMENTAL
DP770503	COMPILATION	DEPARTMENTAL
DP770785	COMPILATION	DEPARTMENTAL
DP773900	SURVEY	OLD SYSTEM CONVERSION
DP778853	COMPILATION	DEPARTMENTAL
DP779009	COMPILATION	DEPARTMENTAL
DP779032	COMPILATION	DEPARTMENTAL
DP779453	COMPILATION	DEPARTMENTAL
DP779528	COMPILATION	DEPARTMENTAL
DP779633	COMPILATION	DEPARTMENTAL
DP780753	COMPILATION	DEPARTMENTAL
DP781030	COMPILATION	DEPARTMENTAL
DP781080	COMPILATION	DEPARTMENTAL
DP782057	COMPILATION	DEPARTMENTAL
DP782392	COMPILATION	DEPARTMENTAL
DP782442	COMPILATION	DEPARTMENTAL
DP782804	COMPILATION	DEPARTMENTAL
DP783095	COMPILATION	DEPARTMENTAL
DP783353	COMPILATION	DEPARTMENTAL
DP783383	COMPILATION	DEPARTMENTAL
DP783498	COMPILATION	DEPARTMENTAL
DP783565	COMPILATION	DEPARTMENTAL
DP784026	COMPILATION	DEPARTMENTAL
DP784466	COMPILATION	DEPARTMENTAL
DP787363	SURVEY	SUBDIVISION
DP789193	SURVEY	OLD SYSTEM CONVERSION
DP793585	SURVEY	REDEFINITION
DP794831	COMPILATION	DEPARTMENTAL
DP794880	COMPILATION	DEPARTMENTAL
DP794925	COMPILATION	DEPARTMENTAL
DP794967	COMPILATION	DEPARTMENTAL
DP795036	COMPILATION	DEPARTMENTAL
DP795438	COMPILATION	DEPARTMENTAL
DP797370	COMPILATION	DEPARTMENTAL
DP797776	COMPILATION	DEPARTMENTAL
DP797931	COMPILATION	DEPARTMENTAL
DP798109	COMPILATION	DEPARTMENTAL
DP798123	COMPILATION	DEPARTMENTAL
DP798217	COMPILATION	DEPARTMENTAL
DP798221	COMPILATION	DEPARTMENTAL
DP798706	COMPILATION	DEPARTMENTAL
DP798907	COMPILATION	DEPARTMENTAL
DP799000	COMPILATION	DEPARTMENTAL
DP799118	COMPILATION	DEPARTMENTAL
DP799157	COMPILATION	DEPARTMENTAL
DP799170	COMPILATION	DEPARTMENTAL
DP799458	COMPILATION	DEPARTMENTAL
DP799622	COMPILATION	DEPARTMENTAL
DP799939	COMPILATION	DEPARTMENTAL
DP799944	COMPILATION	DEPARTMENTAL

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<b>Plan</b>	<b>Surv/Comp</b>	<b>Purpose</b>
DP800078	SURVEY	SUBDIVISION
DP809995	SURVEY	SUBDIVISION
DP812092	COMPILATION	CONSOLIDATION
DP814239	SURVEY	PRIMARY APPLN NON SUBDIVISION
DP814774	COMPILATION	SUBDIVISION
DP817811	SURVEY	SUBDIVISION
DP821026	COMPILATION	CROWN FOLIO CREATION
DP826756	SURVEY	SUBDIVISION
DP832563	SURVEY	SUBDIVISION
DP843425	SURVEY	SUBDIVISION
DP845969	SURVEY	SUBDIVISION
DP848193	SURVEY	SUBDIVISION
DP861552	SURVEY	REDEFINITION
DP865995	SURVEY	SUBDIVISION
DP868359	SURVEY	SUBDIVISION
DP869989	SURVEY	SUBDIVISION
DP877611	SURVEY	SUBDIVISION
DP877994	COMPILATION	CONSOLIDATION
DP878417	SURVEY	SUBDIVISION
DP880223	COMPILATION	CONSOLIDATION
DP900169	SURVEY	UNRESEARCHED
DP928096	COMPILATION	UNRESEARCHED
DP946285	SURVEY	UNRESEARCHED
DP948479	COMPILATION	UNRESEARCHED
DP949431	SURVEY	UNRESEARCHED
DP950120	COMPILATION	UNRESEARCHED
DP953823	COMPILATION	UNRESEARCHED
DP954298	COMPILATION	UNRESEARCHED
DP954500	COMPILATION	UNRESEARCHED
DP954842	COMPILATION	UNRESEARCHED
DP955302	SURVEY	UNRESEARCHED
DP958274	COMPILATION	UNRESEARCHED
DP959000	COMPILATION	UNRESEARCHED
DP961578	COMPILATION	UNRESEARCHED
DP963648	COMPILATION	UNRESEARCHED
DP978399	COMPILATION	UNRESEARCHED
DP978400	COMPILATION	UNRESEARCHED
DP978555	COMPILATION	UNRESEARCHED
DP978910	COMPILATION	UNRESEARCHED
DP979101	COMPILATION	UNRESEARCHED
DP979102	COMPILATION	UNRESEARCHED
DP979106	COMPILATION	UNRESEARCHED
DP979108	COMPILATION	UNRESEARCHED
DP979478	COMPILATION	UNRESEARCHED
DP984979	COMPILATION	UNRESEARCHED
DP986255	COMPILATION	DEPARTMENTAL
DP986500	COMPILATION	DEPARTMENTAL
DP986640	COMPILATION	LIMITED FOLIO CREATION
DP986885	COMPILATION	DEPARTMENTAL
DP995091	COMPILATION	DEPARTMENTAL
DP995241	COMPILATION	DEPARTMENTAL
DP995992	COMPILATION	DEPARTMENTAL
DP996060	COMPILATION	DEPARTMENTAL
DP996395	COMPILATION	DEPARTMENTAL
DP997046	COMPILATION	DEPARTMENTAL
DP997389	COMPILATION	DEPARTMENTAL
DP997436	COMPILATION	DEPARTMENTAL
DP997841	COMPILATION	DEPARTMENTAL
DP998090	COMPILATION	DEPARTMENTAL
DP998140	COMPILATION	DEPARTMENTAL
DP998278	COMPILATION	DEPARTMENTAL
DP998545	COMPILATION	DEPARTMENTAL
DP998662	COMPILATION	DEPARTMENTAL
DP998677	COMPILATION	DEPARTMENTAL
DP998691	COMPILATION	DEPARTMENTAL
DP998781	COMPILATION	DEPARTMENTAL

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<b>Plan</b>	<b>Surv/Comp</b>	<b>Purpose</b>
DP998835	COMPILATION	DEPARTMENTAL
DP998853	COMPILATION	DEPARTMENTAL
DP999127	COMPILATION	DEPARTMENTAL
DP999167	COMPILATION	DEPARTMENTAL
DP999182	COMPILATION	DEPARTMENTAL
DP999335	COMPILATION	DEPARTMENTAL
DP999478	COMPILATION	DEPARTMENTAL
DP1001583	COMPILATION	LIMITED FOLIO CREATION
DP1003392	COMPILATION	LIMITED FOLIO CREATION
DP1005089	SURVEY	SUBDIVISION
DP1007893	COMPILATION	LIMITED FOLIO CREATION
DP1011006	COMPILATION	LIMITED FOLIO CREATION
DP1011985	SURVEY	SUBDIVISION
DP1012321	SURVEY	SUBDIVISION
DP1016517	SURVEY	SUBDIVISION
DP1025749	COMPILATION	LIMITED FOLIO CREATION
DP1026105	SURVEY	SUBDIVISION
DP1031335	COMPILATION	LIMITED FOLIO CREATION
DP1034735	SURVEY	SUBDIVISION
DP1036655	COMPILATION	LIMITED FOLIO CREATION
DP1037286	SURVEY	SUBDIVISION
DP1041191	COMPILATION	LIMITED FOLIO CREATION
DP1042202	COMPILATION	LIMITED FOLIO CREATION
DP1043315	COMPILATION	LIMITED FOLIO CREATION
DP1045853	COMPILATION	CONSOLIDATION
DP1045944	COMPILATION	LIMITED FOLIO CREATION
DP1046106	COMPILATION	LIMITED FOLIO CREATION
DP1047369	COMPILATION	LIMITED FOLIO CREATION
DP1049839	COMPILATION	LIMITED FOLIO CREATION
DP1052825	COMPILATION	DEPARTMENTAL
DP1052826	COMPILATION	DEPARTMENTAL
DP1052831	COMPILATION	DEPARTMENTAL
DP1053021	SURVEY	SUBDIVISION
DP1054079	COMPILATION	LIMITED FOLIO CREATION
DP1057650	COMPILATION	DEPARTMENTAL
DP1057884	COMPILATION	LIMITED FOLIO CREATION
DP1058180	COMPILATION	LIMITED FOLIO CREATION
DP1060371	SURVEY	REDEFINITION
DP1063551	COMPILATION	LIMITED FOLIO CREATION
DP1064111	SURVEY	SUBDIVISION
DP1071691	COMPILATION	LIMITED FOLIO CREATION
DP1074355	COMPILATION	LIMITED FOLIO CREATION
DP1077989	SURVEY	SUBDIVISION
DP1078476	SURVEY	SUBDIVISION
DP1078908	SURVEY	SUBDIVISION
DP1079176	COMPILATION	LIMITED FOLIO CREATION
DP1079322	SURVEY	SUBDIVISION
DP1080599	COMPILATION	LIMITED FOLIO CREATION
DP1081153	COMPILATION	LIMITED FOLIO CREATION
DP1081679	COMPILATION	LIMITED FOLIO CREATION
DP1081686	COMPILATION	LIMITED FOLIO CREATION
DP1081697	COMPILATION	LIMITED FOLIO CREATION
DP1081701	COMPILATION	LIMITED FOLIO CREATION
DP1082014	COMPILATION	LIMITED FOLIO CREATION
DP1082017	COMPILATION	LIMITED FOLIO CREATION
DP1082019	COMPILATION	LIMITED FOLIO CREATION
DP1082025	COMPILATION	LIMITED FOLIO CREATION
DP1082028	COMPILATION	LIMITED FOLIO CREATION
DP1082032	COMPILATION	LIMITED FOLIO CREATION
DP1082039	COMPILATION	LIMITED FOLIO CREATION
DP1082040	COMPILATION	LIMITED FOLIO CREATION
DP1082041	COMPILATION	LIMITED FOLIO CREATION
DP1082063	COMPILATION	LIMITED FOLIO CREATION
DP1082325	COMPILATION	LIMITED FOLIO CREATION
DP1082326	COMPILATION	LIMITED FOLIO CREATION
DP1082334	COMPILATION	LIMITED FOLIO CREATION

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<b>Plan</b>	<b>Surv/Comp</b>	<b>Purpose</b>
DP1082345	COMPILATION	LIMITED FOLIO CREATION
DP1082347	COMPILATION	LIMITED FOLIO CREATION
DP1082367	COMPILATION	LIMITED FOLIO CREATION
DP1082372	COMPILATION	LIMITED FOLIO CREATION
DP1082376	COMPILATION	LIMITED FOLIO CREATION
DP1082703	COMPILATION	LIMITED FOLIO CREATION
DP1083003	COMPILATION	LIMITED FOLIO CREATION
DP1083006	COMPILATION	LIMITED FOLIO CREATION
DP1083327	COMPILATION	LIMITED FOLIO CREATION
DP1083332	COMPILATION	LIMITED FOLIO CREATION
DP1083662	COMPILATION	LIMITED FOLIO CREATION
DP1083666	COMPILATION	LIMITED FOLIO CREATION
DP1083709	COMPILATION	LIMITED FOLIO CREATION
DP1083936	COMPILATION	CONSOLIDATION
DP1084385	COMPILATION	LIMITED FOLIO CREATION
DP1085541	COMPILATION	LIMITED FOLIO CREATION
DP1089648	SURVEY	SUBDIVISION
DP1089872	SURVEY	SUBDIVISION
DP1090272	SURVEY	SUBDIVISION
DP1094296	COMPILATION	LIMITED FOLIO CREATION
DP1097153	COMPILATION	LIMITED FOLIO CREATION
DP1097485	COMPILATION	LIMITED FOLIO CREATION
DP1097635	COMPILATION	LIMITED FOLIO CREATION
DP1099667	SURVEY	SUBDIVISION
DP1102094	COMPILATION	LIMITED FOLIO CREATION
DP1103821	SURVEY	SUBDIVISION
DP1109890	COMPILATION	LIMITED FOLIO CREATION
DP1109965	COMPILATION	LIMITED FOLIO CREATION
DP1110016	COMPILATION	LIMITED FOLIO CREATION
DP1112281	SURVEY	SUBDIVISION
DP1113486	SURVEY	SUBDIVISION
DP1120898	SURVEY	OLD SYSTEM CONVERSION
DP1122139	SURVEY	SUBDIVISION
DP1126329	COMPILATION	LIMITED FOLIO CREATION
DP1133965	COMPILATION	LIMITED FOLIO CREATION
DP1135133	SURVEY	SUBDIVISION
DP1138209	COMPILATION	LIMITED FOLIO CREATION
DP1139699	COMPILATION	LIMITED FOLIO CREATION
DP1139700	COMPILATION	LIMITED FOLIO CREATION
DP1139744	COMPILATION	LIMITED FOLIO CREATION
DP1139745	COMPILATION	LIMITED FOLIO CREATION
DP1144733	COMPILATION	CROWN LAND CONVERSION
DP1147134	COMPILATION	DEPARTMENTAL
DP1150193	SURVEY	SUBDIVISION
DP1151219	COMPILATION	LIMITED FOLIO CREATION
DP1159741	SURVEY	SUBDIVISION
DP1160293	SURVEY	SUBDIVISION
DP1161828	SURVEY	SUBDIVISION
DP1166639	SURVEY	CONSOLIDATION
DP1167243	SURVEY	SUBDIVISION
DP1168400	COMPILATION	LIMITED FOLIO CREATION
DP1168568	COMPILATION	LIMITED FOLIO CREATION
DP1177157	SURVEY	SUBDIVISION
DP1181993	SURVEY	CONSOLIDATION
DP1187008	COMPILATION	LIMITED FOLIO CREATION
DP1189052	COMPILATION	LIMITED FOLIO CREATION
DP1191328	SURVEY	SUBDIVISION
DP1194229	COMPILATION	DELIMITATION
DP1196694	SURVEY	SUBDIVISION
DP1198222	SURVEY	SUBDIVISION
DP1203600	SURVEY	SUBDIVISION
DP1206890	SURVEY	SUBDIVISION
DP1210672	SURVEY	SUBDIVISION
DP1211790	SURVEY	SUBDIVISION
DP1212891	SURVEY	SUBDIVISION
DP1224926	SURVEY	SUBDIVISION

**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.

<b>Plan</b>	<b>Surv/Comp</b>	<b>Purpose</b>
DP1227321	SURVEY	SUBDIVISION
DP1228385	SURVEY	SUBDIVISION
DP1231619	SURVEY	SUBDIVISION
DP1232702	SURVEY	SUBDIVISION
DP1233868	SURVEY	REDEFINITION
DP1236106	COMPILATION	SUBDIVISION
DP1246910	SURVEY	DELIMITATION
DP1253244	SURVEY	SUBDIVISION
DP1253899	SURVEY	SUBDIVISION
DP1254586	SURVEY	SUBDIVISION
DP1257981	SURVEY	DELIMITATION
DP1258468	SURVEY	SUBDIVISION
DP1260437	SURVEY	SUBDIVISION
DP1270224	SURVEY	CONSOLIDATION
DP1271453	SURVEY	REDEFINITION
SP2526	COMPILATION	STRATA PLAN
SP8554	COMPILATION	STRATA PLAN
SP14236	COMPILATION	STRATA PLAN
SP17007	COMPILATION	STRATA PLAN
SP18777	COMPILATION	STRATA PLAN
SP22988	COMPILATION	STRATA PLAN
SP30038	COMPILATION	STRATA PLAN
SP32294	COMPILATION	STRATA PLAN
SP34887	COMPILATION	STRATA PLAN
SP37342	COMPILATION	STRATA PLAN
SP37492	COMPILATION	STRATA PLAN
SP37801	COMPILATION	STRATA PLAN
SP40753	COMPILATION	STRATA PLAN
SP42148	COMPILATION	STRATA PLAN
SP48459	COMPILATION	STRATA PLAN
SP49939	COMPILATION	STRATA PLAN
SP50638	COMPILATION	STRATA PLAN
SP53245	COMPILATION	STRATA PLAN
SP54704	COMPILATION	STRATA PLAN
SP55094	COMPILATION	STRATA PLAN
SP64376	COMPILATION	STRATA PLAN
SP65477	COMPILATION	STRATA PLAN
SP66836	COMPILATION	STRATA PLAN
SP69087	COMPILATION	STRATA PLAN
SP69607	COMPILATION	STRATA PLAN
SP70389	COMPILATION	STRATA PLAN
SP71115	COMPILATION	STRATA PLAN
SP73895	COMPILATION	STRATA PLAN
SP75334	COMPILATION	STRATA PLAN
SP78830	COMPILATION	STRATA PLAN
SP80924	COMPILATION	STRATA PLAN
SP86995	COMPILATION	STRATA PLAN
SP89620	COMPILATION	STRATA PLAN
SP91328	COMPILATION	STRATA PLAN
SP92905	COMPILATION	STRATA PLAN
SP93468	COMPILATION	STRATA PLAN
SP94829	COMPILATION	STRATA PLAN
SP98554	COMPILATION	STRATA PLAN
SP98657	COMPILATION	STRATA PLAN
SP98710	COMPILATION	STRATA PLAN
SP99558	COMPILATION	STRATA PLAN
SP99636	COMPILATION	STRATA PLAN
SP101948	COMPILATION	STRATA PLAN
SP102706	COMPILATION	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.





10209157

10209 157

Vol. Fol.

Edition issued 13-1-1966.

NEW SOUTH WALES

Application No. 35494

Prior Title Volume 5607 Folio 191

CERTIFICATE OF TITLE  
REALTY ACT, 1900, as amended.



EN

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 *J. Charles*

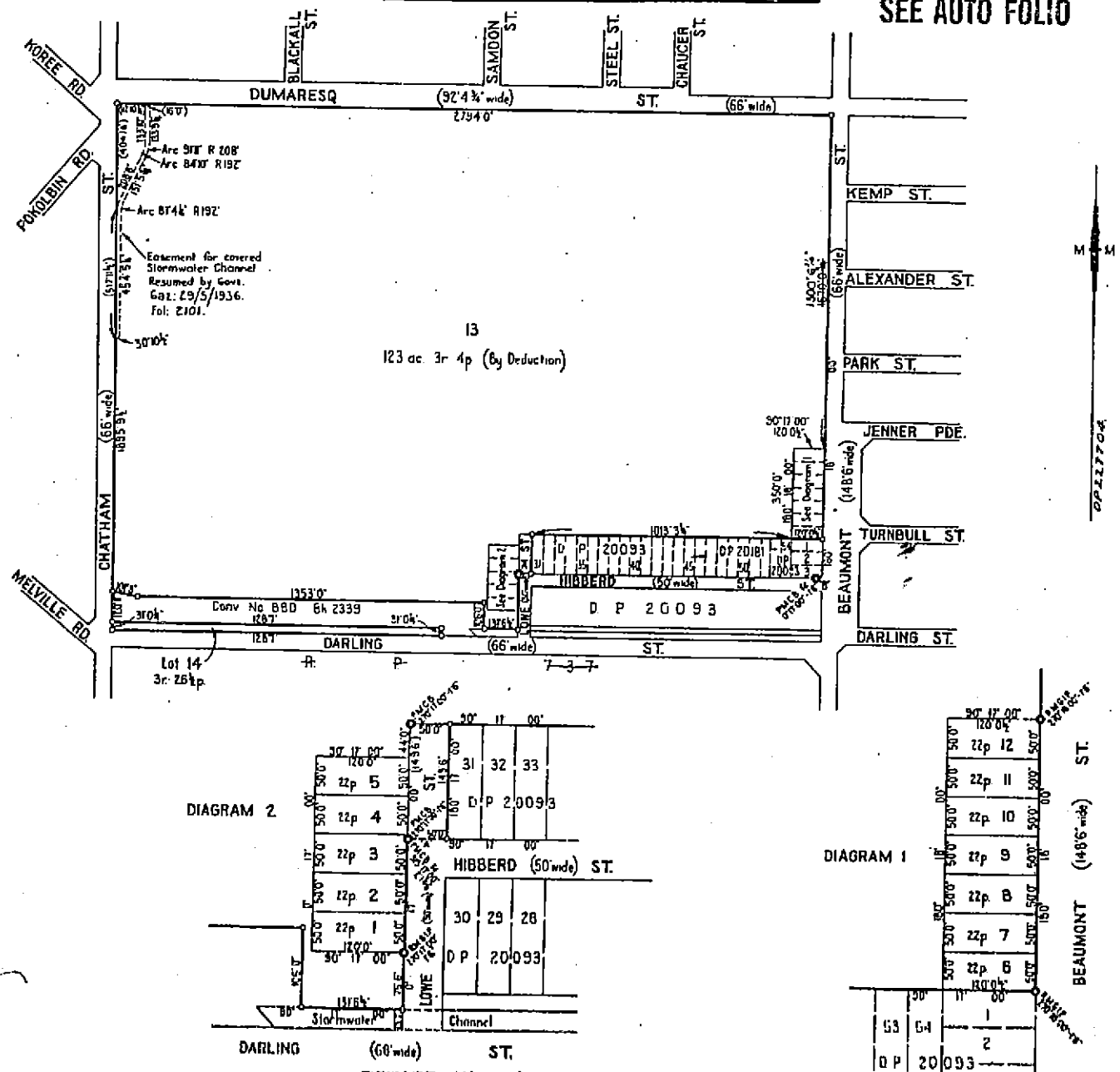
**CANCELLED**

Registrar General.



PLAN SHOWING LOCATION OF LAND

SEE AUTO FOLIO



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 13 in Deposited Plan 227704 at Hamilton in the City of Newcastle Parish of Newcastle and County of Northumberland being part of Portion 268A granted to Australian Agricultural Company on 20-11-1847. Excepting thereout the mines and minerals contained in Deeds Book 810 No.901, Book 814 No.335, Book 1049 No.242 and Book 1091 No.233 affecting parts and excepting thereout the mines and deposits specified in Section 134 Public Works Act, 1900 affecting part.

FIRST SCHEDULE (continued overleaf)

THE NEWCASTLE JOCKEY CLUB LIMITED.

*Jawatson*  
Registrar General.

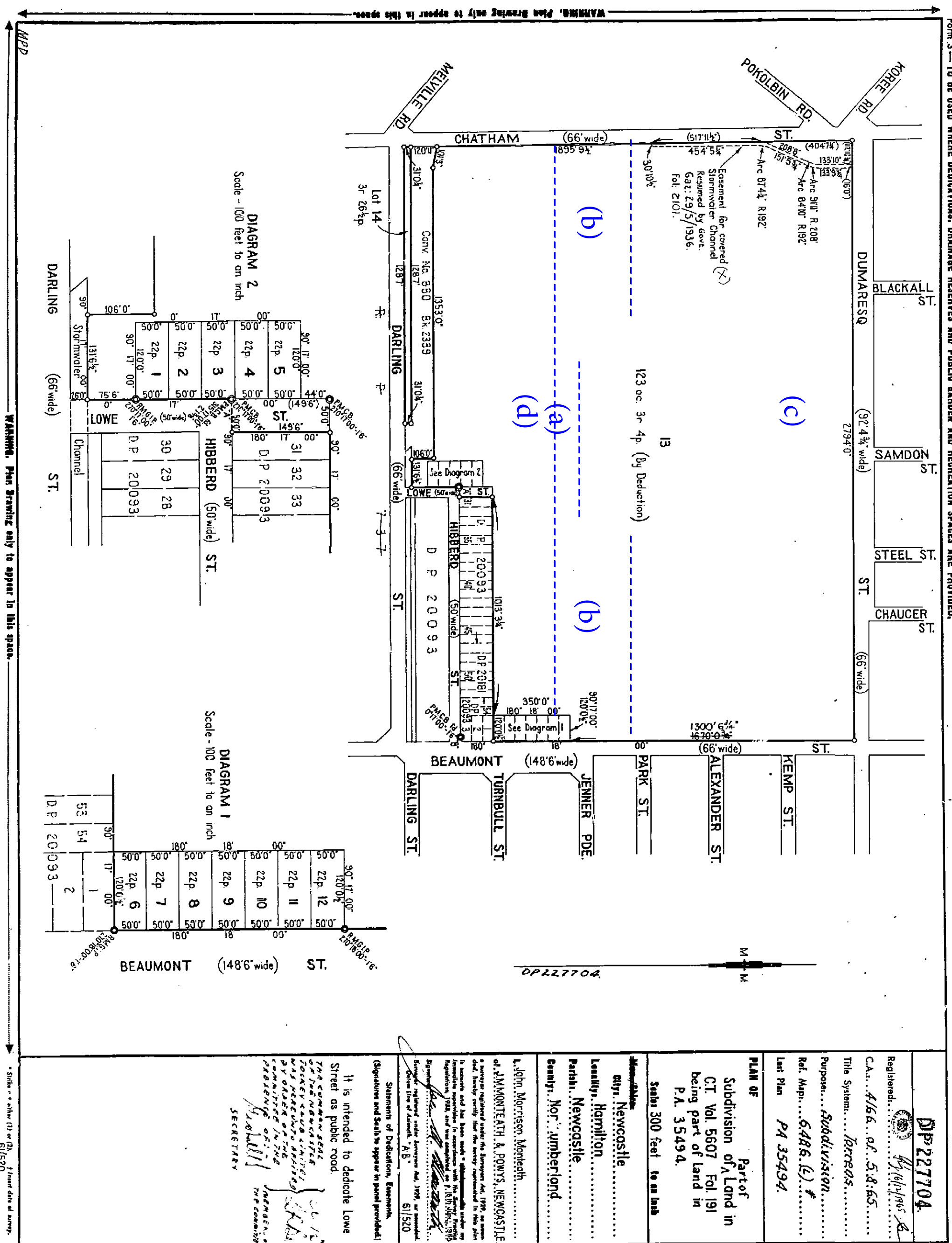
SECOND SCHEDULE (continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
2. Provisions contained in Deeds Book 810 No.901, Book 814 No.335, Book 1049 No.242 and Book 1091 No.233 affecting parts.
3. Easement for the construction and maintenance of a covered stormwater channel created by notification in Government Gazette dated 29-5-1936 Folio 2101 affecting the strip of land shown as Easement for covered stormwater channel in the plan hereon. DP 227704
4. Mortgage No.D346276 to Bank of New South Wales. Entered 22-1-1945.

*Jawatson*  
Registrar General.

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





OFFICE USE ONLY.

**WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION.**

[illegible]

CONVERSION TABLE ADDED IN REGINAL GENERAL'S APPENDIX		DP 227704	
FEET	INCHES	METRES	
1	6	0.457	
2	3/8	0.4645	
16	-	4.877	
26	-	7.825	
30	10 1/2	9.111	
31	0 1/4	9.455	
44	-	13.911	
50	-	15.240	
66	-	20.117	
75	6 7/8	23.012	
84	9 7/8	25.354	
84	10	25.957	
97	4 1/4	28.016	
97	11	28.162	
92	3 3/4	30.661	
101	5	32.009	
106	-	37.111	
120	10 3/4	35.716	
120	0 1/2	35.669	
140	11	40.633	
141	6 1/2	40.924	
141	9	40.782	
143	10	40.843	
148	11 3/4	45.468	
151	5 3/4	46.171	
152	-	50.522	
196	-	63.159	
206	8	63.602	
350	8	106.660	
404	7 1/4	123.323	
454	1 1/2	156.313	
517	11 1/2	157.674	
1013	3 1/4	308.445	
1267	6 3/4	359.431	
1300	4 3/4	396.411	
1695	9 1/2	442.394	
1859	9 1/2	527.535	
2796	-	651.611	
AC NO P		SO M	
- 22		356.4	
- 3 26 1/2		3705	
AC NO P		HA	
123 3 4		50.09	



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

-----

SEARCH DATE

-----

3/5/2021 10:51AM

FOLIO: 13/227704

-----

First Title(s): SEE PRIOR TITLE(S)

Prior Title(s): VOL 10209 FOL 157

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
5/6/1987		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
21/4/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
27/9/1996		AMENDMENT: LOCAL GOVT AREA	
12/5/1997	3029771	DISCHARGE OF MORTGAGE	
12/5/1997	3029772	LEASE	EDITION 1
1/7/2006	AC429387	LEASE	EDITION 2
12/9/2007	AD172460	LEASE	EDITION 3
2/11/2007	AD443538	LEASE	EDITION 4
1/12/2009	AF155042	LEASE	
1/12/2009	AF155055	LEASE	EDITION 5
30/10/2012	AH332208	DEPARTMENTAL DEALING	
25/3/2014	AI465493	DEPARTMENTAL DEALING	
24/7/2014	AI644158	LEASE	EDITION 6
15/5/2015	AJ471647	LEASE	
15/5/2015	AJ471648	LEASE	
15/5/2015	AJ471649	LEASE	
15/5/2015	AJ471650	LEASE	EDITION 7
22/9/2015	AJ829912	MORTGAGE OF LEASE	
19/8/2020	AQ322364	APPLICATION FOR REPLACEMENT CERTIFICATE OF TITLE	EDITION 8
3/9/2020	AQ365133	LEASE	EDITION 9

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

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PRINTED ON 3/5/2021



NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 13/227704

SEARCH DATE	TIME	EDITION NO	DATE
3/5/2021	10:53 AM	9	3/9/2020

LAND

LOT 13 IN DEPOSITED PLAN 227704  
AT HAMILTON  
LOCAL GOVERNMENT AREA NEWCASTLE  
PARISH OF NEWCASTLE COUNTY OF NORTHUMBERLAND  
TITLE DIAGRAM DP227704

FIRST SCHEDULE

THE NEWCASTLE JOCKEY CLUB LIMITED

SECOND SCHEDULE (10 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 PROVISIONS AFFECTING PARTS OF THE LAND ABOVE DESCRIBED AS  
CONTAINED IN BK. 810 NO. 901, BK. 814 NO. 335, BK. 1049 NO. 242  
& BK. 1091 NO. 233
- 3 EASEMENT FOR THE CONSTRUCTION AND MAINTENANCE OF A COVERED  
STORMWATER CHANNEL CREATED BY GOV. GAZ. DATED 29.5.1936 FOL 2101  
AFFECTING THE LAND SHOWN AS EASEMENT FOR COVERED STORMWATER  
CHANNEL IN DP227704
- 4 LAND EXCLUDES MINERALS BK 810 NO 901, BK 814 NO 335, BK 1049 NO  
242 & BK 1091 NO 233 AFFECTING PARTS
- 5 LAND EXCLUDES MINERALS (S.134 PUBLIC WORKS ACT, 1900) AFFECTING  
PART
- 6 AJ471647 LEASE TO THE RUMPUS ROOM CHILDRENS CENTRES PTY  
LIMITED OF 121-123 CHATHAM STREET, BROADMEADOW.  
EXPIRES: 14/9/2019.  
AJ829912 MORTGAGE OF LEASE AJ471647 TO COMMONWEALTH BANK  
OF AUSTRALIA
- 7 AJ471648 LEASE TO THE RUMPUS ROOM CHILDRENS CENTRES PTY  
LIMITED OF 121-123 CHATHAM STREET, BROADMEADOW  
COMMENCES 15/9/2019. EXPIRES: 14/9/2024.  
AJ829912 MORTGAGE OF LEASE AJ471648 TO COMMONWEALTH BANK  
OF AUSTRALIA
- 8 AJ471649 LEASE TO THE RUMPUS ROOM CHILDRENS CENTRES PTY  
LIMITED OF 121-123 CHATHAM STREET, BROADMEADOW  
COMMENCES 15/9/2024. EXPIRES: 14/9/2029.  
AJ829912 MORTGAGE OF LEASE AJ471649 TO COMMONWEALTH BANK  
OF AUSTRALIA
- 9 AJ471650 LEASE TO THE RUMPUS ROOM CHILDRENS CENTRES PTY  
LIMITED OF 121-123 CHATHAM STREET, BROADMEADOW

END OF PAGE 1 - CONTINUED OVER

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NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 13/227704

PAGE 2

SECOND SCHEDULE (10 NOTIFICATIONS) (CONTINUED)

COMMENCES 15/9/2029. EXPIRES: 14/9/2034.

AJ829912 MORTGAGE OF LEASE AJ471650 TO COMMONWEALTH BANK  
OF AUSTRALIA

10 AQ365133 LEASE TO NEWCASTLE EQUINE VETERINARY SERVICES PTY  
LTD PART FOLIO IDENTIFIER 13/227704 BEING THE AREAS  
MARKED HATCHED ON THE LEASE PLAN IN SCHEDULE 3.  
EXPIRES: 31/10/2024. OPTION OF RENEWAL: 5 YEARS.

NOTATIONS

UNREGISTERED DEALINGS: NIL

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

advlegs

PRINTED ON 3/5/2021

Obtained from NSW LRS on 03 May 2021 10:53 AM AEST

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\* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. GlobalX hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900. Note: Information contained in this document is provided by GlobalX Pty Ltd, ABN 35 099 032 596, [www.globalx.com.au](http://www.globalx.com.au) an approved NSW Information Broker.

## **APPENDIX E:**

### **Aerial Photographs**

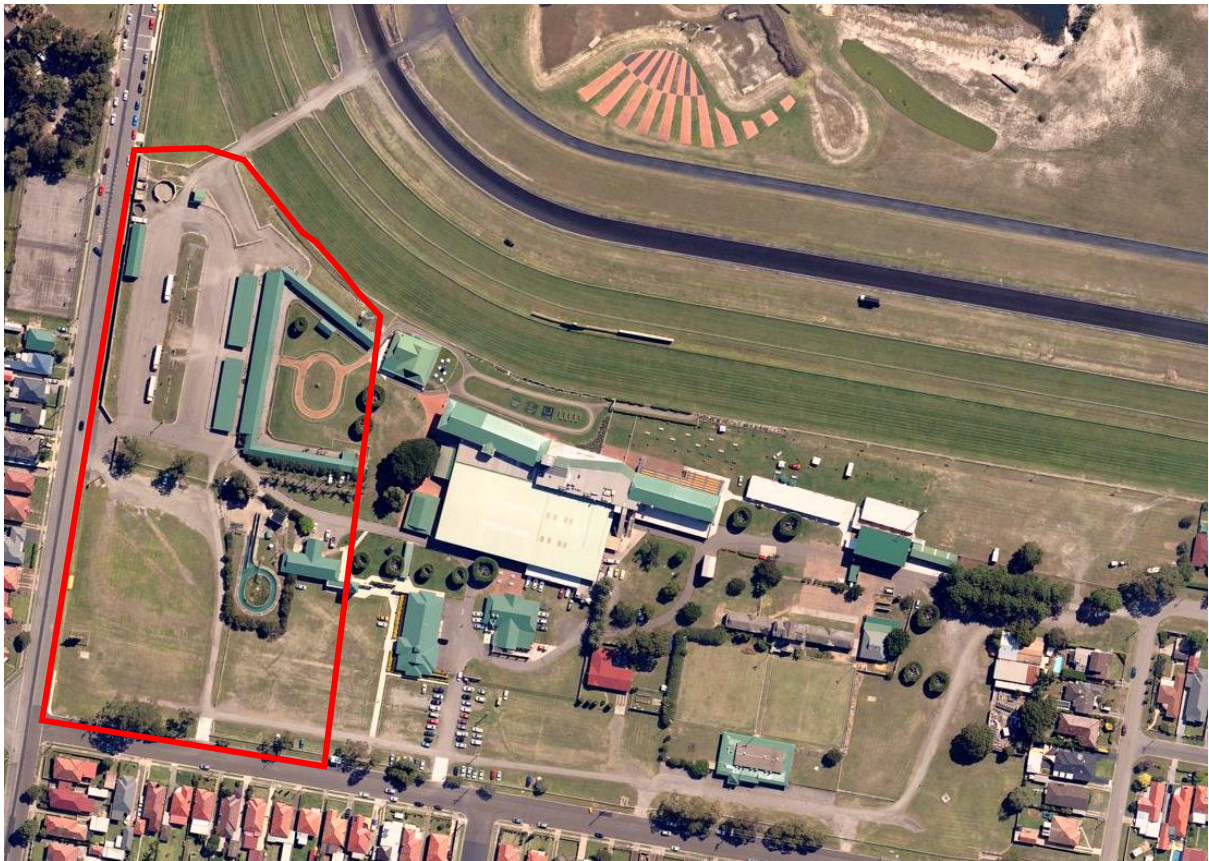


2021



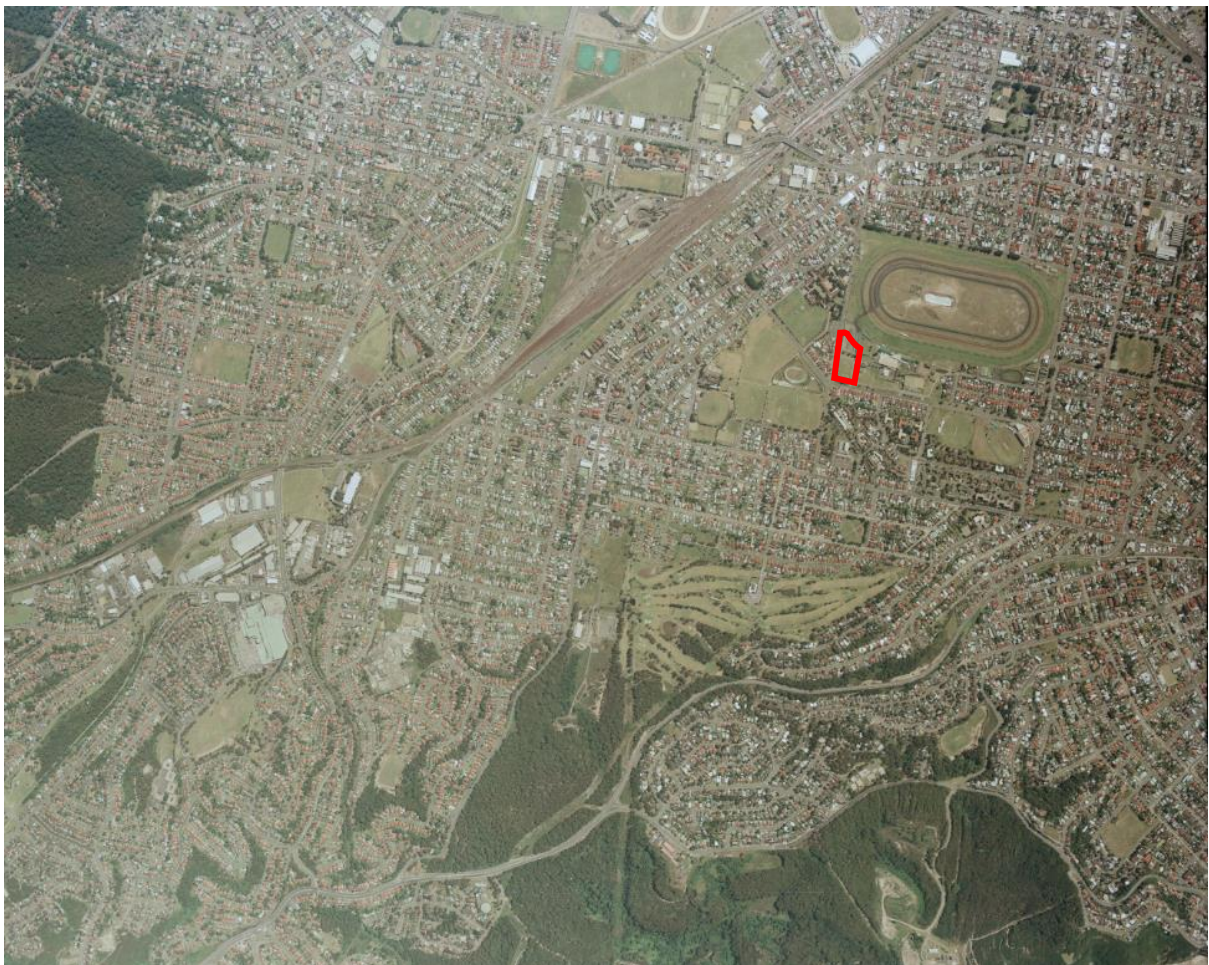


2010





1993



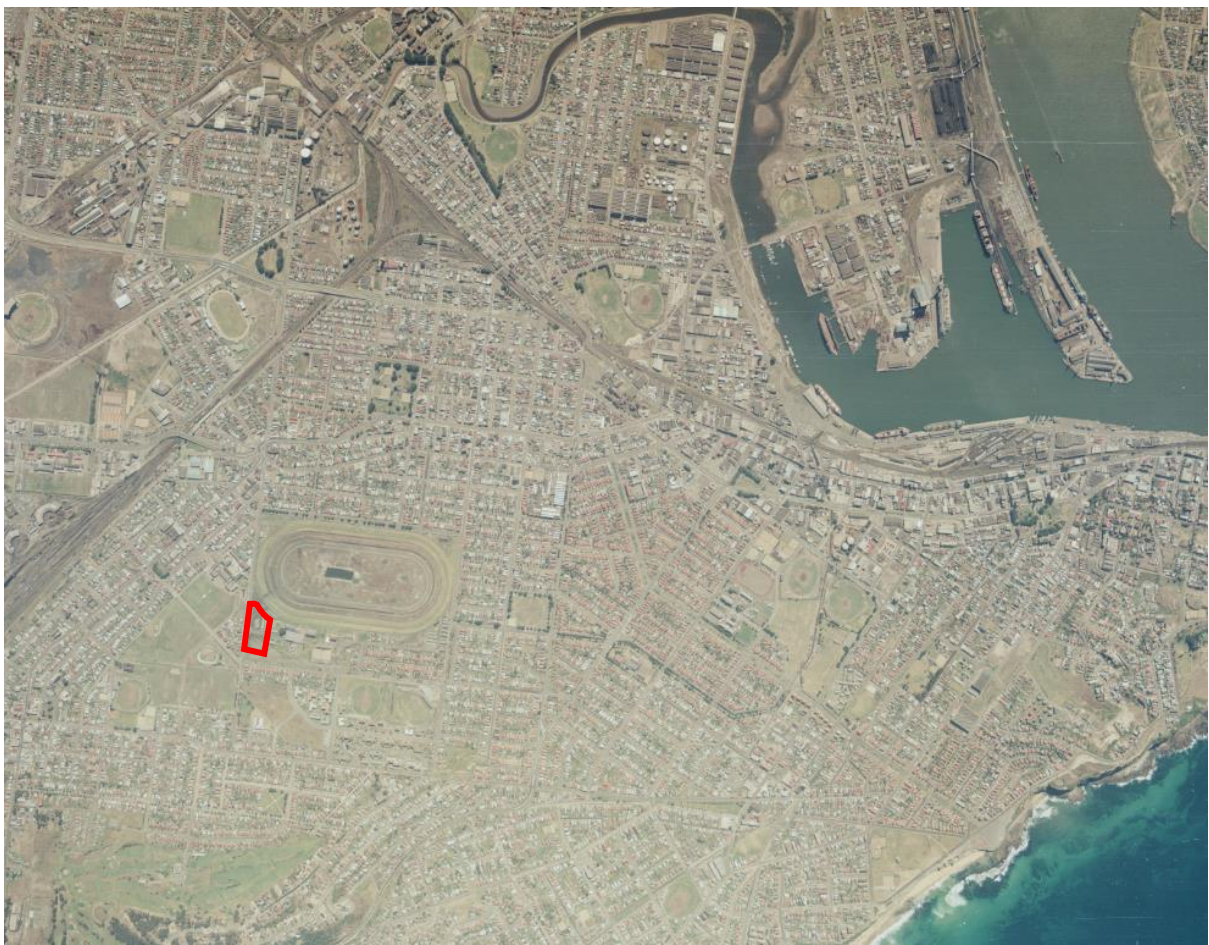


1987





1976





1964



1954



## **APPENDIX F:**

### **Site Photographs**





Photograph 1 - Facing south-east, showing well maintained grass in the southern portion of the site.



Photograph 2 -Showing access road running north-south.



Client:	NEWCASTLE JOCKEY CLUB C/O AVID PROJECT MANAGEMENT	Project No:	NEW20P-0194-AA
Project:	CONTAMINATION ASSESSMENT	Date:	27.05.21
Location:	CNR DARLING AND CHATHAM STREET, BROADMEADOW	No:	<b>1 and 2</b>
Title:	SITE PHOTOGRAPHS		





Photograph 3 - Showing NJC entry gates.



Photograph 4 -Showing the NJC entry building, situated to the immediate west of the entry gates.





Photograph 5 - Showing equine centre.



Photograph 6 -Showing locked pesticide storage lockers.



Client:	NEWCASTLE JOCKEY CLUB C/O AVID PROJECT MANAGEMENT	Project No:	NEW20P-0194-AA
Project:	CONTAMINATION ASSESSMENT	Date:	27.05.21
Location:	CNR DARLING AND CHATHAM STREET, BROADMEADOW	No:	<b>5 and 6</b>
Title:	SITE PHOTOGRAPHS		



Photograph 7 - Showing jerry cans with diesel/petroleum and a concrete floor in good condition.



Photograph 8 -Showing stored fertilisers observed within the shed.





Photograph 9 - Showing access road in the central portion of the site.



Photograph 10 - Showing marquee, south of pavilion room.



Client:	NEWCASTLE JOCKEY CLUB C/O AVID PROJECT MANAGEMENT	Project No:	NEW20P-0194-AA
Project:	CONTAMINATION ASSESSMENT	Date:	27.05.21
Location:	CNR DARLING AND CHATHAM STREET, BROADMEADOW	No:	<b>9 and 10</b>
Title:	SITE PHOTOGRAPHS		





Photograph 11 - Showing stables.



Photograph 12 -Showing the typical building materials within the stables.



Client:	NEWCASTLE JOCKEY CLUB C/O AVID PROJECT MANAGEMENT	Project No:	NEW20P-0194-AA
Project:	CONTAMINATION ASSESSMENT	Date:	27.05.21
Location:	CNR DARLING AND CHATHAM STREET, BROADMEADOW	No:	<b>11 and 12</b>
Title:	SITE PHOTOGRAPHS		





Photograph 13 - Showing the mounting yard/parading ring.



Photograph 14 -Showing possible fill in loading and unloading area mound.



Client:	NEWCASTLE JOCKEY CLUB C/O AVID PROJECT MANAGEMENT	Project No:	NEW20P-0194-AA
Project:	CONTAMINATION ASSESSMENT	Date:	27.05.21
Location:	CNR DARLING AND CHATHAM STREET, BROADMEADOW	No:	<b>13 and 14</b>
Title:	SITE PHOTOGRAPHS		





Photograph 15 - Showing circular structure in the north-western portion of the site.



Photograph 16 -Showing locked shed.



Client:	NEWCASTLE JOCKEY CLUB C/O AVID PROJECT MANAGEMENT	Project No:	NEW20P-0194-AA
Project:	CONTAMINATION ASSESSMENT	Date:	27.05.21
Location:	CNR DARLING AND CHATHAM STREET, BROADMEADOW	No:	<b>15 and 16</b>
Title:	SITE PHOTOGRAPHS		





Photograph 17 - Showing fuel storage cells/pumps



Photograph 18 - Showing general site trees and plants within the racecourse.



Client:	NEWCASTLE JOCKEY CLUB C/O AVID PROJECT MANAGEMENT	Project No:	NEW20P-0194-AA
Project:	CONTAMINATION ASSESSMENT	Date:	27.05.21
Location:	CNR DARLING AND CHATHAM STREET, BROADMEADOW	No:	<b>17 and 18</b>
Title:	SITE PHOTOGRAPHS		

## **APPENDIX G:**

### **NSW EPA Records**

BROADMEADOW	Former Industrial Site	16 Broadmeadow ROAD	Service Station	Regulation under CLM Act not required	-32.91444096	151.7300112
BROADMEADOW	Nineways Broadmeadow Coles Express S	Corner Brunker Road and Lambton ROAD	Service Station	Regulation under CLM Act not required	-32.92511185	151.7364247
BROADMEADOW	2 Georgetown Road, Broadmeadow NSW	2 Georgetown ROAD	Metal Industry	Under assessment	-32.912288	151.732197



# Search results

Your search for: Suburb: BROADMEADOW

[Search Again](#)

[Refine Search](#)

did not find any records in our database.

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the [planning process](#).

More information about particular sites may be available from:

- The [POEO public register](#)
- The appropriate planning authority: for example, on a planning certificate issued by the local council under [section 149 of the Environmental Planning and Assessment Act](#).

See [What's in the record and What's not in the record](#).

If you want to know whether a specific site has been the subject of notices issued by the EPA under the CLM Act, we suggest that you search by Local Government Area only and carefully review the sites that are listed.

This public record provides information about sites regulated by the EPA under the Contaminated Land Management Act 1997, including sites currently and previously regulated under the Environmentally Hazardous Chemicals Act 1985. Your inquiry using the above search criteria has not matched any record of current or former regulation. You should consider searching again using different criteria. The fact that a site does not appear on the record does not necessarily mean that it is not affected by contamination. The site may have been notified to the EPA but not yet assessed, or contamination may be present but the site is not yet being regulated by the EPA. Further information about particular sites may be available from the appropriate planning authority, for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act. In addition the EPA may be regulating contamination at the site through a licence under the Protection of the Environment Operations Act 1997. You may wish to search the POEO public register. [POEO public register](#)

## Search TIP

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

... [more search tips](#)

# Search results

Your search for: **Notices** with the following criteria

**Notice type** - Penalty Notice

**Suburb** - broadmeadow

returned 0 result

# Search results

Your search for: **POEO Licences** with the following criteria

**Suburb - broadmeadow**

returned 3 results

[Export to excel](#)

1 of 1 Pages

[Search Again](#)

<u>Number</u>	<u>Name</u>	<u>Location</u>	<u>Type</u>	<u>Status</u>	<u>Issued date</u>
<a href="#">10667</a>	BERENDSEN FLUID POWER PTY LIMITED	9-11 BROADMEADOW RD, BROADMEADOW, NSW 2292	POEO licence	Surrendered	27 Apr 2000
<a href="#">10996</a>	RAIL CORPORATION NEW SOUTH WALES	BROWN ROAD, BROADMEADOW, NSW 2292	POEO licence	No longer in force	19 Jun 2000
<a href="#">6808</a>	UGL RAIL SERVICES PTY LIMITED	16 BROADMEADOW ROAD, BROADMEADOW, NSW 2292	POEO licence	No longer in force	26 Jun 2000

06 May 2021



# Licence summary

[Search Again](#)[Return to Previous Page](#)

## Summary Licence No: 6808

[View this licence](#) (PDF document 198 kb)

**Licence holder:** UGL RAIL SERVICES PTY LIMITED

**Premises:** GONINANS

16 BROADMEADOW ROAD, BROADMEADOW, NSW, 2292

LGA: NEWCASTLE Catchment: Hunter

**Administrative fee:** \$4,448.00

**Licence status:** No\_longer\_in\_force

**Activity type:** Hazardous, Industrial or Group A Waste Generation or Storage

**Licence review:** Complete date 23 Jun 2003

Due date 23 Jun 2008

**Pollution incident management**

**plan:** No

## Applications

<u>Number</u>	<u>Application type</u>	<u>Current status</u>	<u>Date received</u>
<u>140493</u>	s.55 Licence Transfer	Approved	08 Jun 2001

## Annual Returns

<u>Start date</u>	<u>End date</u>	<u>Date received</u>	<u>Non-compliance LBL data</u>	
27-Apr-2007	26-Apr-2008		<a href="#">Complete annual return via eConnect</a>	
27-Apr-2006	26-Apr-2007	26-Jun-2007	No	Not available
27-Apr-2005	26-Apr-2006	21-Jul-2006	No	Not available
27-Apr-2004	26-Apr-2005	14-Jun-2005	No	Not available
27-Apr-2003	26-Apr-2004	21-Jun-2004	No	Not available
27-Apr-2002	26-Apr-2003	18-Jun-2003	No	Not available
27-Apr-2001	26-Apr-2002	03-Jul-2002	No	Not available
27-Apr-2000	26-Apr-2001	07-Jun-2001	No	Not available

# Licence summary

[Search Again](#)[Return to Previous Page](#)

## Summary Licence No: 10667

[View this licence](#) (PDF document 189 kb)

**Licence holder:** BERENDSEN FLUID POWER PTY LIMITED

**Premises:** BERENDSEN FLUID POWER P/L

9-11 BROADMEADOW RD, BROADMEADOW, NSW, 2292

**LGA:** NEWCASTLE **Catchment:** Hunter

**Administrative fee:** \$760.00

**Licence status:** Surrendered

**Activity type:** Hazardous, Industrial or Group A Waste Generation or Storage

**Licence review:** Due date 27 Apr 2003

**Pollution incident management**

**plan:** No

## Applications

<u>Number</u>	<u>Application type</u>	<u>Current status</u>	<u>Date received</u>
<a href="#">1004842</a>	s.80 Surrender of a Licence	Issued	20 Feb 2001

## Notices

<u>Number</u>	<u>Issue date</u>	<u>Notice type</u>
<a href="#">1004842</a>	07 Mar 2001	s.80 Surrender of a Licence

## Annual Returns

<u>Start date</u>	<u>End date</u>	<u>Date received</u>	<u>Non-compliance</u>	<u>LBL data</u>
27-Apr-2000	07-Mar-2001	18-May-2001	No	Not available

# Licence summary

[Search Again](#)[Return to Previous Page](#)

## Summary Licence No: 10996

[View this licence](#) (PDF document 109 kb)

Licence holder: RAIL CORPORATION NEW SOUTH WALES

Trading as: RAILCORP

Premises: ENDEAVOUR MAINTENANCE CENTRE

BROWN ROAD, BROADMEADOW, NSW, 2292

LGA: NEWCASTLE Catchment: Hunter

Administrative fee: \$760.00

Licence status: No\_longer\_in\_force

Activity type: Hazardous, Industrial or Group A Waste Generation or Storage

Licence review: Complete date 04 Jun 2004

Due date 04 Jun 2009

Pollution incident management

plan: No

## Applications

Number	Application type	Current status	Date received
<a href="#">143258</a>	s.55 Licence Transfer	Approved	11 Feb 2005
<a href="#">1060631</a>	s.58 Licence Variation	Issued	13 Apr 2006

## Notices

Number	Issue date	Notice type
<a href="#">1060631</a>	22 Jun 2006	s.58 Licence Variation
<a href="#">1077282</a>	27 Aug 2007	s.58 Licence Variation

## Annual Returns

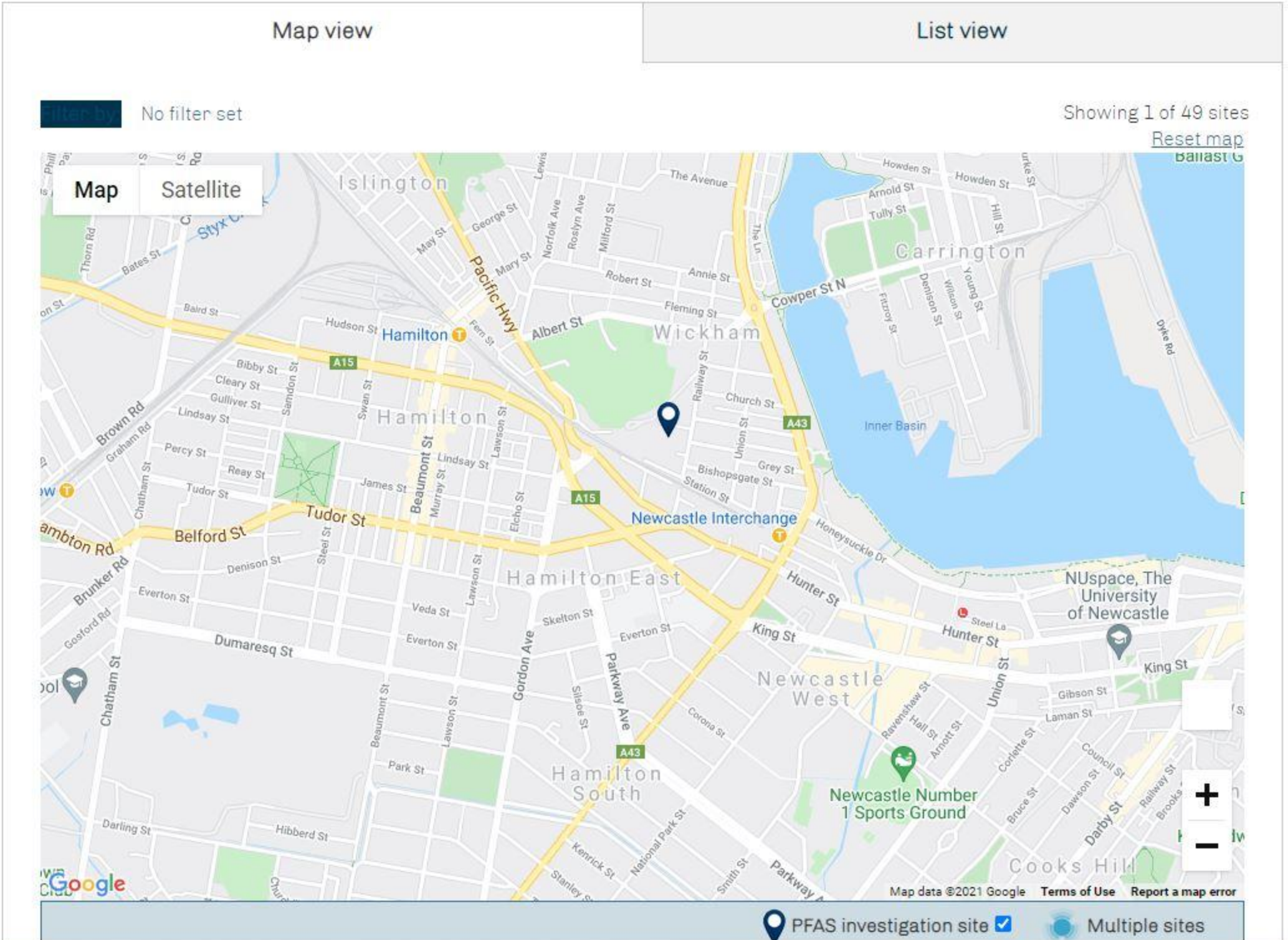
Start date	End date	Date received	Non-compliance LBL data	
20-Jun-2007	29-Jun-2007	16-Aug-2007	No	Not available
20-Jun-2006	19-Jun-2007	17-Aug-2007	<a href="#">yes</a>	Not available
20-Jun-2005	19-Jun-2006	16-Aug-2006	<a href="#">yes</a>	Not available
20-Jun-2004	19-Jun-2005	18-Aug-2005	<a href="#">yes</a>	Not available
20-Jun-2003	19-Jun-2004	18-Aug-2004	<a href="#">yes</a>	Not available
20-Jun-2002	19-Jun-2003	18-Aug-2003	No	Not available
20-Jun-2001	19-Jun-2002	19-Aug-2002	<a href="#">yes</a>	Not available
20-Jun-2000	19-Jun-2001	05-Jul-2001	No	Not available

Newcastle City Council	Clyde Street, Hamilton North	<b>Search record of EPA notices</b> <a href="#">↗</a>
Newcastle City Council	Ellis Road, Turton Road, Georgetown Road, Waratah	Contact council
Newcastle City Council	Low Street, Wallsend	Contact council
Newcastle City Council	Steel Street, Newcastle West	Contact council
Newcastle City Council	Wharf Road, Newcastle	Contact council



The EPA is leading an investigation program to assess the legacy of PFAS use across NSW. With the assistance of the NSW PFAS Technical Advisory Group, which includes NSW Health, Department of Primary Industries and the Office of Environment and Heritage, we provide impacted residents with tailored, precautionary dietary advice to help them reduce any exposure to PFAS.

Current investigations are focused on sites where it is likely that large quantities of PFAS have been used. The EPA is currently investigating PFAS at these sites:





## **APPENDIX H:**

### **Section 10.7 Certificate**



City of  
Newcastle

# Planning Certificate

Section 10.7, Environmental Planning and Assessment Act 1979

**To:** Qualtest Laboratory (NSW) Pty Ltd  
2 Murray Dwyer Circuit  
Mayfield West NSW 2304

**Certificate No:** PL2021/02525  
**Fees:** \$133.00  
**Receipt No(s):** D001883629

**Your Reference:** NEW20P-0194

**Date of Issue:** 03/05/2021

<b>The Land:</b> Lot 13 DP 227704 125 Chatham Street Broadmeadow NSW 2292
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## Advice provided on this Certificate:

Advice under section 10.7(2): see items 1 – 21  
Additional advice under section 10.7(5): see Items 22 – 28

## IMPORTANT: Please read this certificate carefully

This certificate contains important information about the land.

Please check for any item which could be inconsistent with the proposed use or development of the land. If there is anything you do not understand, phone our **Customer Contact Centre** on (02) 4974 2000, or come in and see us.

The information provided in this certificate relates only to the land described above. If you need information about adjoining or nearby land, or about the City of Newcastle (CN) development policies for the general area, contact our **Customer Contact Centre**.

All information provided is correct as at 03/05/2021. However, it's possible for changes to occur within a short time. We recommend that you only rely upon a very recent certificate.

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## City of Newcastle

PO Box 489  
NEWCASTLE 2300

Phone: (02) 4974 2000  
Facsimile: (02) 4974 2222

## Customer Contact Centre

Ground floor,  
12 Stewart Avenue  
Newcastle West NSW 2300

## Office hours:

Mondays to Fridays 8.30 am to 5.00 pm

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## Part 1:

### Advice provided under section 10.7(2)

*ATTENTION: The explanatory notes appearing in italic print within Part 1 are provided to assist understanding, but do not form part of the advice provided under section 10.7(2). These notes shall be taken as being advice provided under section 10.7(5).*

#### 1. Names of relevant planning instruments and DCPs

The following environmental planning instruments, proposed environmental planning instruments and development control plans apply to the land, either in full or in part.

State Environmental Planning Policy No. 1 - Development Standards

State Environmental Planning Policy No. 21 - Caravan Parks

State Environmental Planning Policy No. 33 - Hazardous and Offensive Development

State Environmental Planning Policy No. 36 - Manufactured Home Estates

State Environmental Planning Policy (Koala Habitat Protection) Amendment (Maps) 2020

State Environmental Planning Policy No. 50 - Canal Estate Development

State Environmental Planning Policy No. 55 - Remediation of Land

State Environmental Planning Policy No. 64 - Advertising and Signage

State Environmental Planning Policy No. 65 - Design Quality of Residential Flat Development

State Environmental Planning Policy No. 70 - Affordable Housing (Revised Schemes)

State Environmental Planning Policy (Housing For Seniors or People with a Disability) 2004

State Environmental Planning Policy (Building Sustainability Index:BASIX) 2004

State Environmental Planning Policy (State Significant Precincts) 2005

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007

State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007

State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008

State Environmental Planning Policy (Urban Renewal) 2010

State Environmental Planning Policy (Affordable Rental Housing) 2009

State Environmental Planning Policy (State and Regional Development) 2011

State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017

State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017

State Environmental Planning Policy (Concurrences) 2018

State Environmental Planning Policy (Primary Production and Rural Development) 2019

Newcastle Local Environmental Plan 2012

Newcastle Development Control Plan 2012

#### 2. Zoning and land use under relevant LEPs

**Newcastle Local Environmental Plan 2012**

**Zoning:** The Newcastle Local Environmental Plan 2012 identifies the land as being within the following zone(s):

**Zone RE2 Private Recreation**

*Note: Refer to [www.newcastle.nsw.gov.au](http://www.newcastle.nsw.gov.au) or [www.legislation.nsw.gov.au](http://www.legislation.nsw.gov.au) website for LEP instrument and zoning maps.*

The following is an extract from the zoning provisions contained in Newcastle Local Environmental Plan 2012:

**Zone RE2 Private Recreation**

- **Objectives of zone**

- To enable land to be used for private open space or recreational purposes.
- To provide a range of recreational settings and activities and compatible land uses.
- To protect and enhance the natural environment for recreational purposes.

- **Permitted without consent**

Environmental facilities; Environmental protection works; Home occupations

- **Permitted with consent**

Amusement centres; Aquaculture; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Charter and tourism boating facilities; Centre-based child care facilities; Community facilities; Dwelling houses; Emergency services facilities; Entertainment facilities; Flood mitigation works; Food and drink premises; Function centres; Helipads; Home-based child care; Jetties; Kiosks; Marinas; Markets; Moorings; Neighbourhood shops; Passenger transport facilities; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Respite day care centres; Roads; Signage; Water recreation structures

- **Prohibited**

Pubs; Any other development not specified in, permitted without consent or permitted with consent

**Minimum land dimensions for erection of a dwelling-house:** The Newcastle Local Environmental Plan 2012 contains development standards relating to minimum land dimensions for the erection of a dwelling house. Refer to clause 4.1 Minimum subdivision lot size and Part 4 Principle development standards of the Newcastle LEP 2012 for provisions relating to minimum lot sizes for residential development.

**Critical habitat:** The Newcastle Local Environmental Plan 2012 does not identify the land as including or comprising critical habitat.

**Heritage conservation area:** The land is not within a heritage conservation area under the Newcastle Local Environmental Plan 2012.

**Heritage items:** A heritage item listed in the Newcastle Local Environmental Plan 2012 is situated on the land. Refer to the LEP for provisions relating to development involving a heritage item.

### **3. Complying development**

**Note Other requirements:** *The advice below for all Complying Development Codes, is limited to identifying whether or not the land, the subject of the certificate, is land on which complying development may be carried out because of Clauses 1.17A(1)(c) to (e), (2), (3) & (4), 1.18 (1)(c3) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 (the Codes SEPP).*

To ascertain the extent to which the complying development may or may not be carried out on the land, maps are available on City of Newcastle (CN) web pages.

#### **Housing Code**



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Complying development under this Code may NOT be carried out on this land, as the land is affected by General land exemptions, being land that comprises, or on which there is, a Heritage Item.

#### **Rural Housing Code**

Complying development under this Code may NOT be carried out on this land, as the land is affected by General land exemptions, being land that comprises, or on which there is, a Heritage Item.

#### **Low Rise Housing Diversity Code**

Complying development under this Code may NOT be carried out on this land, as the land is affected by General land exemptions, being land that comprises, or on which there is, a Heritage Item.

#### **Greenfield Housing Code**

Complying development under this Code may NOT be carried out on this land, as the land is affected by General land exemptions, being land that comprises, or on which there is, a Heritage Item.

#### **Inland Code**

Complying development under this Code may NOT be carried out on this land, as the land is affected by General land exemptions, being land that comprises, or on which there is, a Heritage Item.

#### **Housing Alterations Code**

Complying development under this Code may NOT be carried out on this land, as the land is affected by General land exemptions, being land that comprises, or on which there is, a Heritage Item.

#### **General Development Code**

Complying development under this Code may NOT be carried out on this land, as the land is affected by General land exemptions, being land that comprises, or on which there is, a Heritage Item.

#### **Commercial and Industrial Alterations Code**

Complying development under this Code may NOT be carried out on this land, as the land is affected by General land exemptions, being land that comprises, or on which there is, a Heritage Item.

#### **Commercial and Industrial (New Buildings and Additions) Code**

Complying development under this Code may NOT be carried out on this land, as the land is affected by General land exemptions, being land that comprises, or on which there is, a Heritage Item.

#### **Container Recycling Facilities Code**

Complying development under this Code may NOT be carried out on this land, as the land is affected by General land exemptions, being land that comprises, or on which there is, a Heritage Item.

#### **Subdivision Code**

Complying development under this Code may NOT be carried out on this land, as the land is affected by General land exemptions, being land that comprises, or on which there is, a Heritage Item.

#### **Demolition Code**

Complying development under this Code may NOT be carried out on this land, as the land is affected by General land exemptions, being land that comprises, or on which there is, a Heritage Item.

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## Fire Safety Code

Complying development under this Code may NOT be carried out on this land, as the land is affected by General land exemptions, being land that comprises, or on which there is, a Heritage Item.

### 4B. Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works

The land IS NOT subject to an agreement for annual charges under section 496B of the Local Government Act 1993 for coastal protection services (within the meaning of section 553B of that Act).

## 5. Coal Mine Subsidence Compensation Act 2017

The land IS WITHIN a declared Mine Subsidence District under section 20 of the Coal Mine Subsidence Compensation Act 2017. Development in a Mine Subsidence District requires approval from Subsidence Advisory NSW. Subsidence Advisory NSW provides compensation to property owners for mine subsidence damage. To be eligible for compensation, development must be constructed in accordance with Subsidence Advisory NSW approval. Subsidence Advisory NSW has set surface development guidelines for properties in Mine Subsidence Districts that specify building requirements to help prevent potential damage from coal mine subsidence.

*NOTE: The above advice is provided to the extent that City of Newcastle (CN) has been notified by Subsidence Advisory NSW.*

## 6. Road widening or realignment

*NOTE: The Roads and Maritime Services (RMS) may have proposals that are not referred to in this item. For advice about affectation by RMS proposals, contact the Roads and Maritime Services, Locked Mail Bag 30 Newcastle 2300. Ph: 131 782.*

The land IS NOT AFFECTED by any road widening or road realignment under Division 2 of Part 3 of the Roads Act 1993.

The land IS NOT AFFECTED by any road widening or road realignment under an environmental planning instrument.

The land IS NOT AFFECTED by road widening or road realignment under a resolution of the Council.

## 7. Policies on hazard risk restrictions

Except as stated below, the land is not affected by a policy referred to in Item 7 of Schedule 4 of the Environmental Planning and Assessment Regulation 2000 that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

**Potential acid sulfate soils:** Works carried out on the land must be undertaken in accordance with Clause 6.1 Acid sulfate soils of the Newcastle Local Environmental Plan 2012.

**Land Contamination:** We have land contamination information/records in relation to this property. Council has adopted a policy of restricting development or imposing conditions on properties affected by land contamination. Refer to Section 5.02 Land Contamination of Newcastle Development Control Plan 2012, which is available to view and download from City of Newcastle's website.

*NOTE: The absence of a policy to restrict development of the land because of the likelihood of a particular risk does not imply that the land is free from that risk. City of Newcastle (CN) considers the likelihood of natural and man-made risks when determining development applications under section 4.15 of the Environmental Planning and Assessment Act 1979. Detailed investigation carried out in conjunction with the preparation or assessment of a development application may result in CN either refusing development consent or imposing conditions of consent on the basis of risks that are not identified above.*

### 7A. Flood related development controls information

Our information currently indicates that the property is, or contains, flood prone land as defined in the Floodplain Development Manual: the management of flood liable land, April 2005 published by the NSW Government.

Section 4.01 Flood Management of Newcastle Development Control Plan (DCP) 2012 provides guidelines with respect to all development of flood prone land. This includes development for the purpose of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings. The DCP may be viewed on our website, inspected or purchased at our Customer Contact Centre.

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*NOTE: More detailed flood information specific to the property is available on separate flooding certificate application through our Customer Contact Centre on (02) 4974 2000*

## **8. Land reserved for acquisition**

The land is not identified for acquisition by a public authority (as referred to in section 3.15 of the Act) by any environmental planning instrument or proposed environmental planning instrument applying to the land.

## **9. Contributions plans**

The following contribution plan/s apply to the land.

### **Section 7.12 Newcastle Local Infrastructure Contributions Plan 2019: Effective 9 September 2019.**

The Plan specifies section 7.12 contributions that may be imposed as a condition of development consent.

*NOTE: Contributions plans are available on our website or may be inspected or purchased at our Customer Contact Centre.*

## **9A. Biodiversity certified land**

The land IS NOT biodiversity certified land under Part 8 of the Biodiversity Conservation Act 2016.

## **10. Biodiversity stewardship sites**

The land IS NOT land (of which CN is aware) under a biodiversity stewardship agreement under Part 5 of the Biodiversity Conservation Act 2016.

## **10A. Native vegetation clearing set asides**

The land IS NOT land (of which CN is aware) that contains a set aside area under section 60ZC of the Local Land Services Act 2013.

## **11. Bush fire prone land**

The land IS NOT bush fire prone land for the purposes of the Environmental Planning and Assessment Act 1979.

## **12. Property vegetation plans**

Not applicable. The Native Vegetation Act 2003 does not apply to the Newcastle local government area.

## **13. Orders under Trees (Disputes Between Neighbours) Act 2006**

CN HAS NOT been notified that an order has been made under the Trees (Disputes between Neighbours) Act 2006 to carry out work in relation to a tree on the land.

## **14. Directions under Part 3A**

The land IS NOT AFFECTED by a direction by the Minister in force under section 75P (2) (c1) of the Act.

## **15. Site compatibility certificates and conditions for seniors housing**

(a) The land IS NOT AFFECTED by a current site compatibility certificate (of which CN is aware) issued under the State Environmental Planning Policy (Housing for Seniors and People with a Disability) 2004.

(b) The land IS NOT AFFECTED by any terms of kind referred to in clause 18(2) of the State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004, that have been imposed as a condition of consent to a development application granted after 11 October, 2007 in respect of the land.

## **16. Site compatibility certificates for infrastructure, schools or TAFE establishments**

The land IS NOT AFFECTED by a valid site compatibility certificate (of which CN is aware) issued under the State Environmental Planning Policy (Infrastructure) 2007.

## **17. Site compatibility certificates and conditions for affordable rental housing**

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The land IS NOT AFFECTED by a valid site compatibility certificate (of which CN is aware) issued under the State Environmental Planning Policy (Affordable Rental Housing) 2009.

**18. Paper subdivision information**

The land IS NOT AFFECTED by any development plan that applies to the land or that is proposed to be subject to a consent ballot.

**19. Site verification certificates**

The land IS NOT AFFECTED by a current site verification certificate (of which CN is aware) issued under the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

**20. Loose-fill asbestos insulation**

CN HAS NOT been notified that the land includes any residential premises (within the meaning of Division 1A of Part 8 of the Home Building Act 1989) that are listed on the register of loose-fill asbestos insulation, that is required to be maintained under that Division.

**21. Affected building notices and building product rectification orders**

The land IS NOT AFFECTED by any affected building notice of which CN is aware that is in force in respect of the land.

The land IS NOT AFFECTED by any building product rectification order that has not been fully complied with, of which CN is aware that is in force in respect of the land.

The land IS NOT AFFECTED by an outstanding notice of intention to make a building product rectification order of which CN is aware.

An affected building notice has the same meaning as in Part 4 of the Building Products (Safety) Act 2017.  
Building product rectification order has the same meaning as in the Building Products (Safety) Act 2017.

**Note:** *There are no matters prescribed by section 59(2) of the Contaminated Land Management Act 1997 to be disclosed, however if other contamination information is held by the Council this may be provided under a section 10.7(5) certificate.*

## **Part 2:**

### **Advice provided under section 10.7(5)**

**ATTENTION:** *Section 10.7(6) of the Act states that a Council shall not incur any liability in respect of advice provided in good faith pursuant to sub-section 10.7(5).*

**22. Outstanding Notices and Orders issued by City of Newcastle (CN).**

Our records indicate that this premise IS NOT AFFECTED by a current notice or order (excluding the notices or orders mentioned in the note below).

*NOTE: CN has not inspected the premises immediately prior to the issue of this certificate. It is possible that the premises are affected by matters of which we are unaware.*

**NOTE:** *This Certificate does not include any advice regarding outstanding notices or orders issued under the Environmental Planning and Assessment Act 1979 or the Local Government Act 1993. To obtain advice regarding these matters, you should lodge an application for a Certificate as to Outstanding Notices and Orders (accompanied by the appropriate fee). For further information, please contact the Customer Contact Centre on (02) 4974 2000.*

**23. Draft development control plans.**



A draft development control plan DOES NOT APPLY to the land. The draft plans are exhibited pursuant to Part 3 of the Environmental Planning and Assessment Regulation 2000.

## **24. Heritage Act 1977.**

The land IS NOT AFFECTED by a listing on the State Heritage Register or an Interim Heritage Order that is in force under the Heritage Act 1977.

*NOTE: The above advice is provided to the extent that CN has been notified by the Heritage Council of NSW. For up-to-date details, contact the Office of Environment and Heritage, PO Box A290, South Sydney NSW 1232 Ph: (02) 9995 5000.*

## **25. Listing by National Trust of Australia.**

The land IS NOT AFFECTED by a listing of the National Trust of Australia (NSW).

*NOTE: The above advice is provided to the extent that CN has been notified by the National Trust of Australia (NSW). For up-to-date details, contact the National Trust Ph 02 9258 0123.*

## **26. Australian Heritage Database.**

The land IS NOT AFFECTED by a listing on the Australian Heritage Database.

*NOTE: The above advice is provided to the extent that CN has been notified by the Department of the Environment. For up-to-date details, contact the Department of the Environment, Heritage, King Edward Terrace, Parkes ACT 2600. Ph (02) 6274 1111.*

## **27. Environment Protection & Biodiversity Conservation Act 1999 (Cth)**

Under the (Commonwealth) Environment Protection and Biodiversity Conservation Act 1999, actions which have, may have or are likely to have, a significant impact on a matter of national environmental significance may be taken only with the approval of the Commonwealth Minister for the Environment.

Approval is also required for actions that have a significant effect on the environment of Commonwealth land. These actions may be on Commonwealth land or other land.

This approval is in addition to any approvals under the (NSW) Environmental Planning and Assessment Act 1979 or other NSW legislation.

Matters of national environmental significance are:

- declared World Heritage areas
- declared Ramsar wetlands
- listed threatened species and ecological communities
- listed migratory species
- nuclear actions
- the environment of Commonwealth marine areas.

Locations within the City of Newcastle that are a declared Ramsar wetland include Kooragang Nature Reserve and Shortland Wetlands. Listed threatened species and listed migratory species are known to occur within the City of Newcastle.

## **28. Other matters**

The land is affected by the following:

### **Live Music Strategy (2019) and Newcastle After Dark: Night-time Economy Strategy (2018-2022).**

City of Newcastle's Live Music Strategy and Newcastle After Dark: Night Time Economy Strategy supports live music and the night-time economy which play a key role in accommodation, events, cultural and business uses in the City Centre and Town Centres. Future residents should be aware that these uses may generate noise, odour, traffic and have longer hours of operation, including after 5pm, which is part of living in/near a commercial centre. The Strategies promote the sharing of the City, including the mitigation of impacts of new residential development, live music or the night time economy on other land uses.

*For more information see Live Music Strategy (2019) and Newcastle After Dark: Night-Time Economy Strategy (2018-2022) on Council's website <https://www.newcastle.nsw.gov.au> or phone 4974 2000.*

### **Newcastle earthquake**

Earthquakes occurred in the vicinity of Newcastle on 28th December 1989 and 6 August 1994. Buildings on the land may have suffered damage as a consequence of the earthquakes. Prospective purchasers are advised to make their own enquiries as to whether the property is affected by any damage.

**Further consent requirements under the Newcastle Local Environmental Plan 2012.**

The following provisions of the Newcastle Local Environmental Plan 2012 affect the carrying out of development on the land. These provisions are in addition to those required to be disclosed at Item 2 of this Certificate.

Refer to clause 3.1 Exempt Development of the Newcastle Local Environmental Plan 2012

Refer to clause 3.2 Complying Development of the Newcastle Local Environmental Plan 2012

**Local Strategic Planning Statement**

The Local Strategic Planning Statement (LSPS) was adopted by council on 26 May 2020 and replaces the Local Planning Strategy. The LSPS is taken into account when CN assesses development applications and amendments to the Newcastle Local Environmental Plan 2012.

*Note: Refer to our website to view the document. [www.newcastle.nsw.gov.au](http://www.newcastle.nsw.gov.au)*

**Hunter Regional Plan 2036**

The Hunter Regional Plan has been prepared by the Department of Planning and Environment. The contents of the strategy will be taken into account when CN assesses development applications and amendments to the Newcastle Local Environmental Plan 2012.

*Note: Refer to the Department of Planning and Environment's website to view the document. [www.planning.nsw.gov.au](http://www.planning.nsw.gov.au)*

**Newcastle City-Wide Floodplain Risk Management Study and Plan (2012)**

The Newcastle City-wide Floodplain Risk Management Study and Plan addresses flood management for the City of Newcastle. The Study and Plan will be taken into account when CN assesses development applications and amendments to the Newcastle Local Environmental Plan 2012.

*Note: Refer to our website to view the document. [www.newcastle.nsw.gov.au](http://www.newcastle.nsw.gov.au)*

**Greater Newcastle Metropolitan Plan 2036**

The Greater Newcastle Metropolitan Plan 2036 has been prepared by the Department of Planning and Environment. The Plan will be taken into account when CN assesses development applications and amendments to the Newcastle Local Environmental Plan 2012.

**Contaminated land information**

Council is in possession of the following contaminated land document(s) which relate to the land. Persons relying on the certificate are advised to examine and consider the contents of each document:

1. Report: Dr John Lucas (11 November 2013) Environmental Site Assessment DW 4543036
  2. Report: ESP Environmental and Safety Professionals (November 2014) Detailed Site Investigation
  3. Report: ESP Environmental and Safety Professionals (17 February 2015) Validation Report
- Persons relying on the certificate are advised to make their own investigations as to whether the land is affected by elevated concentrations of soil or groundwater contaminants in relation to proposed purchase or use of land.

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Issued without alterations or additions, 03/05/21  
Authorised by

**JEREMY BATH**  
**CHIEF EXECUTIVE OFFICER**

# **APPENDIX I:**

## **Borehole Logs**



# ENGINEERING LOG - BOREHOLE

**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH01  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BB  
**DATE:** 26/11/20

**DRILL TYPE:** 2.7 TONNE EXCAVATOR WITH AUGER  
**BOREHOLE DIAMETER:** 300 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations			
METHOD	WATER	SAMPLES	RL (m)	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						FILL-TOPSOIL: Gravelly Silty SAND - fine to medium grained (mostly fine grained), dark brown, fines of low plasticity, fine to coarse grained angular gravel, root affected in top 0.10m.	D - M		HP	180	FILL - TOPSOIL			
						0.25m	Black.	M				FILL			
						0.40m	FILL: SAND - fine to medium grained, pale brown.								
						0.50m	FILL: Gravelly SAND - fine to coarse grained, black, fine to medium grained angular gravel.								
						0.70m	FILL: Sandy CLAY - medium plasticity, black, fine to coarse grained sand, with some fine to medium grained angular gravel.	M > w <sub>p</sub>	St						
			0.80m				Sandy CLAY - medium to high plasticity, dark grey with some brown, fine to medium grained sand.								
			U50												
			1.10m												
		</													

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)		Moisture Condition	
<b>Water</b>		U <sub>50</sub> 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 (Glass jar, sealed and chilled on site)		F	Firm	50 - 100		W	Wet
Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200		W <sub>p</sub>	Plastic Limit
<b>Strata Changes</b>		B Bulk Sample		VSt	Very Stiff	200 - 400		W <sub>L</sub>	Liquid Limit
Gradational or transitional strata		<b>Field Tests</b>		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)		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

**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH02  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BB  
**DATE:** 26/11/20

**DRILL TYPE:** 2.7 TONNE EXCAVATOR WITH AUGER  
**BOREHOLE DIAMETER:** 300 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	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	Very slow inflow (<1L/min)	0.40m				SC	FILL-TOPSOIL: Clayey Gravelly SAND - fine to coarse grained, black, fine to medium grained angular gravel, fines of low plasticity, root affected in top 0.10m.	D - M				FILL - TOPSOIL
		CBR		0.5		CH	Sandy CLAY - medium to high plasticity, dark grey with some brown, fine to medium grained sand.		St	HP	130	ALLUVIUM / POSSIBLE FILL
				0.80m		CI	Sandy CLAY - medium plasticity, grey with some brown, fine to medium grained sand.	M > w <sub>p</sub>		HP	150	
				1.0		CI				HP	210	ALLUVIUM
				1.40m		CI	Sandy CLAY / Clayey SAND - medium plasticity, grey with some brown, fine to medium grained sand.	St - VSt		HP	200	
				1.90m		CI		M ~ w <sub>p</sub>		HP	180	
				2.0		SP	SAND - fine to medium grained, pale grey to white.					
							Dark grey to black.					
				2.5			Dark brown.					
							2.80m					
							Hole Terminated at 2.80 m Limit Of Reach					

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
<b>Water</b>		U <sub>50</sub>	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 (Glass jar, sealed and chilled on site)	F	Firm	50 - 100	W	Wet
Water Outflow		ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)	St	Stiff	100 - 200	W <sub>p</sub>	Plastic Limit
<b>Strata Changes</b>		B	Bulk Sample	VSt	Very Stiff	200 - 400	W <sub>L</sub>	Liquid Limit
Gradational or transitional strata				H	Hard	>400		
Definitive or distinct strata change				Fb	Friable			
		<b>Field Tests</b>		<b>Density</b>				
		PID	Photoionisation detector reading (ppm)	V	Very Loose		Density Index <15%	
		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 - BOREHOLE




**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH03  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BB  
**DATE:** 26/11/20

**DRILL TYPE:** 2.7 TONNE EXCAVATOR WITH AUGER  
**BOREHOLE DIAMETER:** 300 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations				
METHOD	WATER	SAMPLES	RL (m)	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	Very slow inflow (<1L/min)			0.5		SM	FILL-TOPSOIL: Silty SAND - fine to medium grained, brown, fines of low plasticity, root affected.	D - M				FILL - TOPSOIL				
						GM	FILL: Silty Sandy GRAVEL - fine to medium grained, sub-rounded to sub-angular, pale orange-brown, fine to coarse grained sand, fines of low plasticity.	M				FILL				
						CH	Sandy CLAY - medium to high plasticity, grey with some brown, fine to medium grained sand.	M > w <sub>p</sub>		HP	300	ALLUVIUM				
						CI	Sandy CLAY - medium plasticity, grey with some orange-brown, fine to medium grained sand.	M ~ w <sub>p</sub>		HP	250					
						CI	Sandy CLAY - medium plasticity, grey with some orange-brown, fine to medium grained sand.		VSt	HP	350					
						CI	Sandy CLAY / Clayey SAND - medium plasticity, grey with some orange-brown, fine to medium grained sand.			HP	300					
						SP	SAND - fine to medium grained, pale grey to white.									
							Dark brown to dark grey-brown.									

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)		Moisture Condition	
<b>Water</b>		U <sub>30</sub> 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 (Glass jar, sealed and chilled on site)		F Firm		50 - 100		W Wet	
 Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St Stiff		100 - 200		W <sub>p</sub> Plastic Limit	
<b>Strata Changes</b>		B Bulk Sample		VSt Very Stiff		200 - 400		W <sub>L</sub> Liquid Limit	
--- Gradational or transitional strata		<b>Field Tests</b>		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)		<b>Density</b>		V Very Loose		Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)		L Loose		MD Medium Dense		Density Index 15 - 35%	
				D Dense		VD Very Dense		Density Index 35 - 65%	
								Density Index 65 - 85%	
								Density Index 85 - 100%	

# ENGINEERING LOG - BOREHOLE

**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH04  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BB  
**DATE:** 26/11/20

**DRILL TYPE:** 2.7 TONNE EXCAVATOR WITH AUGER  
**BOREHOLE DIAMETER:** 300 mm






**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations		
METHOD	WATER	SAMPLES	RL (m)	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	Very slow inflow (<1L/min)	0.20m				SM	TOPSOIL: Silty SAND - fine to medium grained, brown, fines of low plasticity, root affected.	D - M				TOPSOIL		
		0.50m		0.5		CH	Sandy CLAY - medium to high plasticity, dark grey, fine to medium grained sand.	M > w <sub>p</sub>	St	HP	160	ALLUVIUM		
		D 0.60m		0.70m						HP	180			
		0.70m		0.70m		CI	Sandy CLAY - medium plasticity, pale grey with some orange-brown, fine to medium grained sand.	M ~ w <sub>p</sub>	VSt	HP	230			
		1.00m		1.0		SC	Clayey SAND / Sandy CLAY - medium plasticity, pale grey with some orange-brown, fine to medium grained sand.		Fb					
		D 1.10m		1.40m										
				1.5		SP	SAND - fine to medium grained, grey, with some fines of low plasticity.	M						
				2.0			Pale grey to white.							
				2.5			Dark grey-brown to dark brown.							
								2.80m						
						Hole Terminated at 2.80 m Limit Of Reach								

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
<b>Water</b>		U <sub>50</sub>	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 (Glass jar, sealed and chilled on site)	F	Firm	50 - 100	W	Wet
Water Outflow		ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)	St	Stiff	100 - 200	W <sub>p</sub>	Plastic Limit
<b>Strata Changes</b>		B	Bulk Sample	VSt	Very Stiff	200 - 400	W <sub>L</sub>	Liquid Limit
Gradational or transitional strata				H	Hard	>400		
Definitive or distinct strata change				Fb	Friable			
		<b>Field Tests</b>		<b>Density</b>				
		PID	Photoionisation detector reading (ppm)	V	Very Loose		Density Index <15%	
		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%	



**SURFACE RL:**  
**DATUM:**

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



## ENGINEERING LOG - BOREHOLE

**CLIENT:** NEWCASTLE JOCKEY CLUB

**PROJECT:** PROPOSED STABLES DEVELOPMENT

**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
BROADMEADOW

BOREHOLE NO:

**BH06**

**PAGE:**

1 OF 1

**JOB NO:**

NEW20P-0194

**LOGGED BY:**

BB

DATE:





26/11/20

**DRILL TYPE:** 2.7 TONNE EXCAVATOR WITH AUGER

**BOREHOLE DIAMETER:** 300 mm




**SURFACE RL:**

**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	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	0.60m				GP 0.05m GM 0.15m	FILL: Sandy GRAVEL - fine grained, grey, fine to coarse grained sand. FILL: Silty Sandy GRAVEL - fine to medium grained sub-angular to sub-rounded, pale orange-brown, fine to coarse grained sand, fines of low plasticity. FILL: Silty Sandy GRAVEL - fine to medium grained angular, black, fine to coarse grained sand, fines of low plasticity, with some coal chitter and lightweight slag / ash.	D - M		HP	220	FILL
		D 0.70m				GM 0.60m		M				
		1.00m				CH 1.00m	Sandy CLAY - medium to high plasticity, grey to dark grey with some orange-brown, fine to medium grained sand.	M > w <sub>p</sub>	VSt			ALLUVIUM
		D 1.10m				CI 1.30m	Sandy CLAY - medium plasticity, pale grey and orange-brown, fine to medium grained sand.	M ~ w <sub>p</sub>		HP	300	
		1.30m				CI 1.50m	Clayey SAND / Sandy CLAY - medium plasticity, pale grey to orange-brown, fine to medium grained sand.					
		D 1.40m				SP 2.00m	SAND - fine to medium grained, pale grey. Pale grey to white.	M	MD - D			
						2.80m	Hole Terminated at 2.80 m Limit Of Reach					

**LEGEND:**

## Water

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

### Strata Changes

- Strata Changes**
- — Gradational or transitional strata
  - Definitive or distinct strata change

## Notes, Samples and Tests

- |                 |  |
|-----------------|--|
| U <sub>50</sub> | 50mm Diameter tube sample  |
| CBR             | Bulk sample for CBR testing                                      |
| E               | Environmental sample<br>(Glass jar, sealed and chilled on site)  |
| ASS             | Acid Sulfate Soil Sample<br>(Plastic bag, air expelled, chilled) |
| 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% |

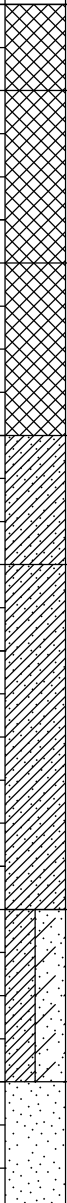
# ENGINEERING LOG - BOREHOLE






**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH07  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BB  
**DATE:** 26/11/20

**DRILL TYPE:** 2.7 TONNE EXCAVATOR WITH AUGER  
**BOREHOLE DIAMETER:** 300 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations							
METHOD	WATER	SAMPLES	RL (m)	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				SM	0.20m	FILL-TOPSOIL: Silty SAND - fine to medium grained, dark brown, fines of low plasticity, with some fine to coarse grained rounded to sub-angular gravel, root affected.	D - M		HP	130	FILL - TOPSOIL							
					SM		FILL: Silty SAND - fine to coarse grained (mostly fine to medium grained), black to dark grey, fines of low plasticity.	FILL											
					SP	0.60m	Gravelly SAND - fine to coarse grained, black, fine to medium grained (mostly fine grained) angular gravel, with some coal chitter.	M											
					CH		1.00m	Sandy CLAY - medium to high plasticity, dark grey, fine to medium grained sand.	M > w <sub>p</sub>			St							
					CI	1.30m		Sandy CLAY - medium plasticity, grey with some orange-brown, fine to medium grained sand.	M ~ w <sub>p</sub>			VSt	HP	150					
					CI		2.10m	Sandy CLAY / Clayey SAND - medium plasticity, grey with some orange-brown, fine to medium grained sand.											
					SP	2.50m		SAND - fine to medium grained, pale grey to white with some pale orange-brown.	M - W										
							2.80m	Hole Terminated at 2.80 m Limit Of Reach											

<b>LEGEND:</b>		<b>Notes, Samples and Tests</b>		<b>Consistency</b>		<b>UCS (kPa)</b>	<b>Moisture Condition</b>
<b>Water</b>		U <sub>50</sub> 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 (Glass jar, sealed and chilled on site)		F	Firm	50 - 100	W Wet
 Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200	W <sub>p</sub> Plastic Limit
<b>Strata Changes</b>		B Bulk Sample		VSt	Very Stiff	200 - 400	W <sub>L</sub> Liquid Limit
 Gradational or transitional strata		<b>Field Tests</b>		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

**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH08  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BB  
**DATE:** 26/11/20

**DRILL TYPE:** 2.7 TONNE EXCAVATOR WITH AUGER  
**BOREHOLE DIAMETER:** 300 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations							
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result								
Not Encountered		D	0.80m	0.70m		GM	0.03m ASPHALT FILL: Silty Sandy GRAVEL - fine to coarse grained (mostly fine to medium grained), rounded to sub-angular, pale brown, fine to coarse grained sand, fines of low plasticity.	M	D - VD	HP	110	ASPHALT FILL - PAVEMENT							
						GP	0.35m FILL: Sandy GRAVEL - fine grained angular, black, fine to coarse grained sand.	M - W	L - MD			FILL							
						CH	0.70m Sandy CLAY - medium to high plasticity, grey, fine to medium grained sand.	M > w <sub>p</sub>	St			ALLUVIUM							
						CI	1.00m Sandy CLAY - medium plasticity, grey with some pale orange-brown, fine to medium grained sand.	M ~ w <sub>p</sub>	VSt										
						SC	2.00m Clayey SAND - fine to medium grained, grey and pale orange-brown, fines of low to medium plasticity.	M											
						SP	2.20m SAND - fine to medium grained, pale grey to white. Grey-brown.												
							2.80m												

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)		Moisture Condition	
<b>Water</b>		U <sub>30</sub> 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 (Glass jar, sealed and chilled on site)		F Firm		50 - 100		W Wet	
Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St Stiff		100 - 200		W <sub>p</sub> Plastic Limit	
<b>Strata Changes</b>		B Bulk Sample		VSt Very Stiff		200 - 400		W <sub>L</sub> Liquid Limit	
Gradational or transitional strata		<b>Field Tests</b>		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)		<b>Density</b>		V Very Loose		Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)		L Loose		MD Medium Dense		Density Index 15 - 35%	
				D Dense		VD Very Dense		Density Index 35 - 65%	
								Density Index 65 - 85%	
								Density Index 85 - 100%	



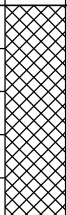
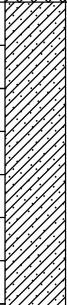
# ENGINEERING LOG - BOREHOLE






**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH09  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BB  
**DATE:** 26/11/20

**DRILL TYPE:** 2.7 TONNE EXCAVATOR WITH AUGER  
**BOREHOLE DIAMETER:** 300 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	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					SM	FILL-TOPSOIL: Silty SAND - fine to medium grained, dark brown, fines of low plasticity, root affected.	M				FILL - TOPSOIL
				0.5		0.50m	SP	FILL: Gravelly SAND - fine to coarse grained, black, fine to medium grained angular gravel.	M - W			
		0.90m		1.0		CH	Sandy CLAY - medium to high plasticity, dark grey, fine to medium grained sand.	M > w <sub>p</sub>	F	HP	70	ALLUVIUM
		CBR		1.20m			Pale grey with some pale orange-brown.			HP	120	
				1.5					St	HP	150	
				2.0	2.00m	SC	Clayey SAND - fine to medium grained, grey with some pale orange-brown, fines of low plasticity.	M				
				2.30m		SAND - fine to medium grained, dark grey.						
				2.5	SP	Pale grey with some pale orange-brown.						
					2.80m							
								Hole Terminated at 2.80 m Limit Of Reach				

**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<sub>50</sub> 50mm Diameter tube sample  
 CBR Bulk sample for CBR testing  
 E Environmental sample  
 (Glass jar, sealed and chilled on site)  
 ASS Acid Sulfate Soil Sample  
 (Plastic bag, air expelled, chilled)  
 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<sub>p</sub> Plastic Limit  
 W<sub>L</sub> 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

**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH10  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BB  
**DATE:** 26/11/20

**DRILL TYPE:** 2.7 TONNE EXCAVATOR WITH AUGER  
**BOREHOLE DIAMETER:** 300 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	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	Very slow inflow (<1L/min)					SM	FILL-TOPSOIL: Silty SAND - fine to medium grained, dark grey-brown, fines of low plasticity, root affected.	M				FILL - TOPSOIL
				0.40m								FILL
			0.80m			SP	FILL: Gravelly SAND - fine to coarse grained, black to dark grey, fine grained angular gravel.					
			U50									
			1.10m									
			1.20m									
			D									
			1.30m									
	</											

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)		Moisture Condition	
<b>Water</b>		U <sub>50</sub> 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 (Glass jar, sealed and chilled on site)		F Firm		50 - 100		W Wet	
Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St Stiff		100 - 200		W <sub>p</sub> Plastic Limit	
<b>Strata Changes</b>		B Bulk Sample		VSt Very Stiff		200 - 400		W <sub>L</sub> Liquid Limit	
Gradational or transitional strata		<b>Field Tests</b>		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)		<b>Density</b>		V Very Loose		Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)		L Loose		MD Medium Dense		Density Index 15 - 35%	
				D Dense		VD Very Dense		Density Index 35 - 65%	
								Density Index 65 - 85%	
								Density Index 85 - 100%	

# ENGINEERING LOG - BOREHOLE




**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH11  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BB  
**DATE:** 26/11/20

**DRILL TYPE:** 2.7 TONNE EXCAVATOR WITH AUGER  
**BOREHOLE DIAMETER:** 300 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations		
METHOD	WATER	SAMPLES	RL (m)	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			<div><div></div><div>0.20m</div><div></div><div>0.50m</div><div></div><div>1.00m</div><div></div><div>1.50m</div><div></div><div>1.70m</div><div></div><div>2.00m</div><div></div><div>2.50m</div><div></div><div>2.80m</div></div>	CL	FILL-TOPSOIL: Sandy CLAY - low plasticity, dark brown, fine to medium grained sand, root affected.	M ~ w <sub>p</sub>					FILL - TOPSOIL		
					SP	FILL: Gravelly SAND - fine to coarse grained, black, fine grained angular gravel.	M					FILL		
					CH	Sandy CLAY - medium to high plasticity, grey to dark grey, fine to medium grained sand.	M > w <sub>p</sub>	F - St	HP	80	ALLUVIUM			
					CI	Sandy CLAY - medium plasticity, pale grey with some pale orange-brown, fine to medium grained sand.	M ~ w <sub>p</sub>	VSt	HP	100				
					SC	Clayey SAND - fine to medium grained, grey and pale orange-brown, fines of low plasticity.	M							
					SP	SAND - fine to medium grained, pale grey to white.	M - W						HP	200
						Dark brown to dark grey-brown.								
						Dark grey.								
							Hole Terminated at 2.80 m Limit Of Reach							

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)		Moisture Condition	
<b>Water</b>		U <sub>30</sub> 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 (Glass jar, sealed and chilled on site)		F Firm		50 - 100		W Wet	
 Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St Stiff		100 - 200		W <sub>p</sub> Plastic Limit	
<b>Strata Changes</b>		B Bulk Sample		VSt Very Stiff		200 - 400		W <sub>L</sub> Liquid Limit	
--- Gradational or transitional strata		<b>Field Tests</b>		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)		<b>Density</b>		V Very Loose		Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)		L Loose		MD Medium Dense		Density Index 15 - 35%	
				D Dense		VD Very Dense		Density Index 35 - 65%	
								Density Index 65 - 85%	
								Density Index 85 - 100%	


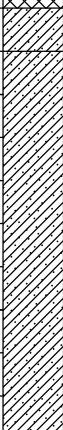

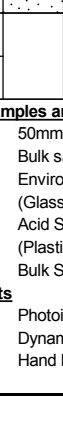
# ENGINEERING LOG - BOREHOLE

**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH12  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BB  
**DATE:** 26/11/20

**DRILL TYPE:** 2.7 TONNE EXCAVATOR WITH AUGER  
**BOREHOLE DIAMETER:** 300 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations					
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result						
Very slow inflow (<1L/min)		0.90m		0.5		SM	FILL-TOPSOIL: Silty SAND - fine to coarse grained (mostly fine to medium grained), dark brown, fines of low plasticity, root affected.	M		HP	90	FILL - TOPSOIL					
						0.30m	FILL: Gravelly Silty SAND - fine to coarse grained, grey-brown, fine grained rounded to sub-angular gravel, fines of low plasticity.					FILL					
		U50 1.10m			1.0		CL	Sandy CLAY - low plasticity, dark grey-brown, fine to medium grained sand.	M ~ w <sub>p</sub>			F	ALLUVIUM / POSSIBLE FILL				
							0.80m	Sandy CLAY - medium to high plasticity, grey, fine to medium grained sand.	M > w <sub>p</sub>			St	ALLUVIUM				
					1.5		CH		M ~ w <sub>p</sub>			VSt	HP	250			
							1.80m	SP	SAND - fine to medium grained, grey and pale orange-brown, with some fines of low plasticity.			M					
								2.00m	SAND - fine to medium grained, grey-brown.								
							2.5		SP			Pale grey to white with some pale orange-brown.	M - W				
												Pale brown to brown.					
												2.80m		Hole Terminated at 2.80 m Limit Of Reach			

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)		Moisture Condition	
<b>Water</b>		U <sub>50</sub> 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 (Glass jar, sealed and chilled on site)		F Firm		50 - 100		W Wet	
Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St Stiff		100 - 200		W <sub>p</sub> Plastic Limit	
<b>Strata Changes</b>		B Bulk Sample		VSt Very Stiff		200 - 400		W <sub>L</sub> Liquid Limit	
Gradational or transitional strata		<b>Field Tests</b>		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)		<b>Density</b>		V Very Loose		Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)		L Loose		MD Medium Dense		Density Index 15 - 35%	
				D Dense		VD Very Dense		Density Index 35 - 65%	
								Density Index 65 - 85%	
								Density Index 85 - 100%	



# ENGINEERING LOG - BOREHOLE

**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH13  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BS  
**DATE:** 12/5/21

**DRILL TYPE:** 4WD TRUCK MOUNTED DRILL RIG  
**BOREHOLE DIAMETER:** 100 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations				
METHOD	WATER	SAMPLES	RL (m)	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 Observed	E 0.20m				SP	FILL: SAND - fine to medium grained, pale brown to white, root affected.	D - M				FILL				
		0.40m				GC	FILL: Sandy Clayey GRAVEL - fine to coarse grained, sub-rounded to rounded, grey to grey-brown, fine to coarse grained sand, fines of low to medium plasticity.	M - W								
		E 0.50m		0.5												
		0.65m				GC	FILL: Sandy Clayey GRAVEL - fine to medium grained, sub-angular to sub-rounded, dark grey to black, fine to coarse grained sand, fines of low to medium plasticity.	W								
		E 0.75m														
		0.90m				CH	CLAY - medium to high plasticity, dark grey to grey with some pale brown, with some fine grained sand, with organic inclusion.	M > w <sub>p</sub>								
		E 1.00m		1.0												
				1.5		1.50m	Hole Terminated at 1.50 m Limit Of Required Investigation					ALLUVIUM				
				2.0												
				2.5												

<b>LEGEND:</b>		<b>Notes, Samples and Tests</b>		<b>Consistency</b>		<b>UCS (kPa)</b>	<b>Moisture Condition</b>
<b>Water</b>		U <sub>30</sub> 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 (Glass jar, sealed and chilled on site)		F	Firm	50 - 100	W Wet
Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200	W <sub>p</sub> Plastic Limit
<b>Strata Changes</b>		B Bulk Sample		VSt	Very Stiff	200 - 400	W <sub>L</sub> Liquid Limit
Gradational or transitional strata		<b>Field Tests</b>		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)		<b>Density</b>		V Very Loose	Density Index <15%
		HP Hand Penetrometer test (UCS kPa)		L	Loose	L Loose	Density Index 15 - 35%
				MD	Medium Dense	MD Medium Dense	Density Index 35 - 65%
				D	Dense	D Dense	Density Index 65 - 85%
				VD	Very Dense	VD Very Dense	Density Index 85 - 100%

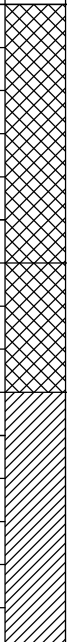
# ENGINEERING LOG - BOREHOLE




**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH14  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BS  
**DATE:** 12/5/21

**DRILL TYPE:** 4WD TRUCK MOUNTED DRILL RIG  
**BOREHOLE DIAMETER:** 100 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations				
METHOD	WATER	SAMPLES	RL (m)	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 Observed	E 0.20m				GP	FILL: Sandy GRAVEL - fine to medium grained, sub-rounded to sub-angular, grey-brown to brown, fine to coarse grained sand, trace fines of low plasticity. Dark grey, possibly stabilised.	D	D - M			FILL / CRUSHER DUST				
		0.40m														
		E 0.50m		0.5		FILL: Sandy GRAVEL - fine to medium grained, sub-angular to angular, dark grey to black, fine to medium grained sand.	GP	D	M > w <sub>p</sub>						FILL / COAL CHITTER	
		0.60m														
		E 0.70m														
		0.90m				CLAY - medium to high plasticity, grey to dark-grey, with some orange-brown, with some fine grained sand, with some organic inclusions.								ALLUVIUM		
		E 1.00m		1.0												
				1.5		1.50m	Hole Terminated at 1.50 m Limit Of Required Investigation									
				2.0												
				2.5												

<b>LEGEND:</b>		<b>Notes, Samples and Tests</b>		<b>Consistency</b>		<b>UCS (kPa)</b>	<b>Moisture Condition</b>
<b>Water</b>		U <sub>50</sub> 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 (Glass jar, sealed and chilled on site)		F	Firm	50 - 100	W Wet
 Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200	W <sub>p</sub> Plastic Limit
<b>Strata Changes</b>		B Bulk Sample		VSt	Very Stiff	200 - 400	W <sub>L</sub> Liquid Limit
--- Gradational or transitional strata		<b>Field Tests</b>		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)		<b>Density</b>		V Very Loose	Density Index <15%
		HP Hand Penetrometer test (UCS kPa)		L Loose		MD Medium Dense	Density Index 15 - 35%
				D Dense		D	Density Index 35 - 65%
				VD Very Dense		VD	Density Index 65 - 85%
							Density Index 85 - 100%

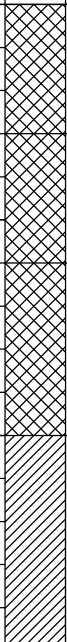
# ENGINEERING LOG - BOREHOLE




**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH15  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BS  
**DATE:** 12/5/21

**DRILL TYPE:** 4WD TRUCK MOUNTED DRILL RIG  
**BOREHOLE DIAMETER:** 100 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	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 Observed	E 0.20m				GC	FILL: Sandy Clayey GRAVEL - fine to coarse grained, sub-rounded to sub-angular, grey-brown to grey and dark grey, with some black, fine to coarse grained sand, fines of low to medium plasticity, with slag and coal chitter, root affected.	D				FILL / TOPSOIL
		0.40m					FILL: Sandy GRAVEL - fine to medium grained, sub-rounded to sub-angular, pale brown, fine to coarse grained sand, with some fines of low plasticity.					FILL / ROADBASE
		E 0.50m		0.5		GP	Grey-brown.					FILL / COAL CHITTER
						GP	FILL: Sandy GRAVEL - fine to medium grained, sub-angular to angular, dark grey to black, fine to medium grained sand.					
		0.90m		1.0			M > w <sub>p</sub>					ALLUVIUM
		E 1.00m E 1.10m				CH						CLAY - medium to high plasticity, grey to dark grey, with some fine grained sand.
				1.5		1.50m	Hole Terminated at 1.50 m Limit Of Required Investigation					
				2.0								
				2.5								

<b>LEGEND:</b>		<b>Notes, Samples and Tests</b>		<b>Consistency</b>		<b>UCS (kPa)</b>	<b>Moisture Condition</b>
<b>Water</b>		U <sub>50</sub> 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 (Glass jar, sealed and chilled on site)		F	Firm	50 - 100	W Wet
 Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200	W <sub>p</sub> Plastic Limit
<b>Strata Changes</b>		B Bulk Sample		VSt	Very Stiff	200 - 400	W <sub>L</sub> Liquid Limit
--- Gradational or transitional strata		<b>Field Tests</b>		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)		<b>Density</b>		V Very Loose	Density Index <15%
		HP Hand Penetrometer test (UCS kPa)		L Loose		MD Medium Dense	Density Index 15 - 35%
				D Dense		VD Very Dense	Density Index 35 - 65%
							Density Index 65 - 85%
							Density Index 85 - 100%

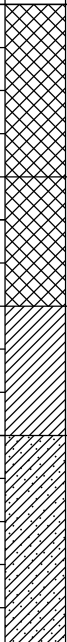
# ENGINEERING LOG - BOREHOLE




**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH16  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BS  
**DATE:** 12/5/21

**DRILL TYPE:** 4WD TRUCK MOUNTED DRILL RIG  
**BOREHOLE DIAMETER:** 100 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	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 Observed	E 0.20m		0.5		GP	FILL: Sandy GRAVEL - fine to medium grained, sub-angular to sub-rounded, brown to grey-brown, fine to coarse grained sand, with some fines of low to medium plasticity. Dark grey.	D - M				FILL / CRUSHER DUST
		0.40m				GP	FILL: Sandy GRAVEL - fine to medium grained, sub-angular to angular, dark grey to black, fine to medium grained sand.	W				FILL / COAL CHITTER
		E 0.50m										
		0.70m										
		E 0.80m										
		1.0	CH	CLAY - medium to high plasticity, dark grey to grey, with some fine grained sand.	M > w <sub>p</sub>	ALLUVIUM						
		1.5	CH	Sandy CLAY - medium to high plasticity, grey and orange-brown, fine grained sand.								
				1.50m		Hole Terminated at 1.50 m Limit Of Required Investigation						
				2.0								
				2.5								

<b>LEGEND:</b>		<b>Notes, Samples and Tests</b>		<b>Consistency</b>		<b>UCS (kPa)</b>	<b>Moisture Condition</b>
<b>Water</b>		U <sub>50</sub> 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 (Glass jar, sealed and chilled on site)		F	Firm	50 - 100	W Wet
 Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200	W <sub>p</sub> Plastic Limit
<b>Strata Changes</b>		B Bulk Sample		VSt	Very Stiff	200 - 400	W <sub>L</sub> Liquid Limit
--- Gradational or transitional strata		<b>Field Tests</b>		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)		<b>Density</b>		V Very Loose	Density Index <15%
		HP Hand Penetrometer test (UCS kPa)		L Loose		MD Medium Dense	Density Index 15 - 35%
				D Dense			Density Index 35 - 65%
				VD Very Dense			Density Index 65 - 85%
							Density Index 85 - 100%





# ENGINEERING LOG - BOREHOLE

**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH17  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BS  
**DATE:** 12/5/21

**DRILL TYPE:** 4WD TRUCK MOUNTED DRILL RIG  
**BOREHOLE DIAMETER:** 100 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations	
METHOD	WATER	SAMPLES	RL (m)	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 Observed	E 0.20m				CL	FILL: Sandy CLAY - low to medium plasticity, brown to dark brown, fine to medium grained sand, root affected.	M < w <sub>p</sub>				FILL / TOPSOIL	
		CI	FILL: Sandy Gravelly CLAY - medium plasticity, grey-brown to grey, fine to medium grained sand, fine grained, angular to sub-angular gravel.	FILL									
		0.40m				GP	FILL: Sandy GRAVEL - fine to medium grained, sub-angular to angular, dark grey to black, fine to medium grained sand.	D - M				FILL / COAL CHITTER	
		E 0.50m											
		0.90m				D							
		E 1.00m											
		E 1.10m											
				1.5		CH	CLAY - medium to high plasticity, grey to dark grey with some orange-brown, with some fine grained sand.	M > w <sub>p</sub>					
				1.50m			Hole Terminated at 1.50 m Limit Of Required Investigation						
				2.0									
				2.5									

<b>LEGEND:</b>		<b>Notes, Samples and Tests</b>		<b>Consistency</b>		<b>UCS (kPa)</b>	<b>Moisture Condition</b>
<b>Water</b>		U <sub>50</sub>	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 (Glass jar, sealed and chilled on site)	F	Firm	50 - 100	W Wet
Water Outflow		ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)	St	Stiff	100 - 200	w <sub>p</sub> Plastic Limit
<b>Strata Changes</b>		B	Bulk Sample	VSt	Very Stiff	200 - 400	w <sub>L</sub> Liquid Limit
Gradational or transitional strata		<b>Field Tests</b>		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)	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

**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH18  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BS  
**DATE:** 12/5/21

**DRILL TYPE:** 4WD TRUCK MOUNTED DRILL RIG  
**BOREHOLE DIAMETER:** 100 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information				Field Test		Structure and additional observations		
METHOD	WATER	SAMPLES	RL (m)	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 Observed	E 0.20m				CL	FILL: Sandy Gravelly CLAY - low to medium plasticity, dark grey-brown, fine to medium grained, sub-angular to sub-rounded gravel, fine grained sand, root affected.	M				FILL / TOPSOIL	
						GP	FILL: Sandy GRAVEL - fine to medium grained, sub-angular to angular, dark grey to black, fine to medium grained sand, with some slag.					FILL / COAL CHITTER	
		0.40m		0.5		CH	CLAY - medium to high plasticity, dark grey to grey.	M > w <sub>p</sub>				ALLUVIUM	
		E 0.50m											
		0.60m											
		E 0.70m											
		E 0.80m											
				1.20m									
		E 1.30m				CH	CLAY - medium to high plasticity, grey and orange-brown with some fine to medium grained sand.						
				1.5									
							Hole Terminated at 1.50 m Limit Of Required Investigation						
				2.0									
				2.5									

<b>LEGEND:</b>		<b>Notes, Samples and Tests</b>		<b>Consistency</b>		<b>UCS (kPa)</b>	<b>Moisture Condition</b>
<b>Water</b>		U <sub>50</sub> 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 (Glass jar, sealed and chilled on site)		F	Firm	50 - 100	W Wet
Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200	W <sub>p</sub> Plastic Limit
<b>Strata Changes</b>		B Bulk Sample		VSt	Very Stiff	200 - 400	W <sub>L</sub> Liquid Limit
Gradational or transitional strata		<b>Field Tests</b>		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)		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%

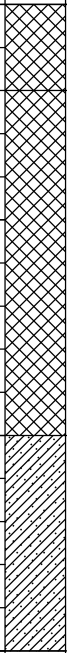
# ENGINEERING LOG - BOREHOLE






**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH20  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BS  
**DATE:** 12/5/21

**DRILL TYPE:** 4WD TRUCK MOUNTED DRILL RIG  
**BOREHOLE DIAMETER:** 100 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	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 Observed	E 0.20m				SC	FILL: Clayey SAND - fine grained, brown, fines of low plasticity, trace roots.	D - M				FILL / TOPSOIL
		0.40m				GP	FILL: Sandy GRAVEL - fine to medium grained, sub-angular to angular, dark grey to black, fine to medium grained sand, with some slag.	D				FILL / COAL CHITTER
		E 0.50m		0.5								
		1.00m		1.0								
		E 1.10m				CH	Sandy CLAY - medium to high plasticity, grey to dark grey, trace orange-brown, fine grained sand.	M > w <sub>p</sub>				ALLUVIUM
				1.5		1.50m	Hole Terminated at 1.50 m Limit Of Required Investigation					
				2.0								
				2.5								

<b>LEGEND:</b>		<b>Notes, Samples and Tests</b>		<b>Consistency</b>		<b>UCS (kPa)</b>	<b>Moisture Condition</b>
<b>Water</b>		U <sub>30</sub> 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 (Glass jar, sealed and chilled on site)		F	Firm	50 - 100	W Wet
 Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200	W <sub>p</sub> Plastic Limit
<b>Strata Changes</b>		B Bulk Sample		VSt	Very Stiff	200 - 400	W <sub>L</sub> Liquid Limit
 Gradational or transitional strata		<b>Field Tests</b>		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

**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW







**BOREHOLE NO:** BH21  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BS  
**DATE:** 12/5/21

**DRILL TYPE:** 4WD TRUCK MOUNTED DRILL RIG  
**BOREHOLE DIAMETER:** 100 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations		
METHOD	WATER	SAMPLES	RL (m)	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 Observed	E				SC	FILL: Clayey SAND - fine to medium grained, brown, fines of low to medium plasticity, with some fine grained sub-angular to sub-rounded gravel.	M				FILL / TOPSOIL		
		GC	FILL: Clayey GRAVEL - fine to coarse grained, sub-rounded to sub-angular, pale brown to orange-brown, fines of low to medium plasticity.	FILL										
		GP	FILL: Sandy GRAVEL - fine to medium grained, sub-angular to angular, dark grey to black, fine to medium grained sand, with some slag.	FILL / COAL CHITTER										
		E		0.5			M > w <sub>p</sub>							
		0.20m												
		0.40m												
E		0.70m												
0.50m														
		E				CH	CLAY - medium to high plasticity, dark grey to grey, with some fine grained sand, some organic inclusions.					ALLUVIUM		
		0.80m												
				1.0		CH	Sandy CLAY - medium to high plasticity, grey to dark grey and orange-brown, fine grained sand.							
				1.10m										
				1.5		CH								
				1.50m										
							Hole Terminated at 1.50 m Limit Of Required Investigation							
				2.0										
				2.5										

<b>LEGEND:</b>		<b>Notes, Samples and Tests</b>		<b>Consistency</b>		<b>UCS (kPa)</b>	<b>Moisture Condition</b>
<b>Water</b>		U <sub>30</sub> 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 (Glass jar, sealed and chilled on site)		F	Firm	50 - 100	W Wet
Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200	W <sub>p</sub> Plastic Limit
<b>Strata Changes</b>		B Bulk Sample		VSt	Very Stiff	200 - 400	W <sub>L</sub> Liquid Limit
Gradational or transitional strata		<b>Field Tests</b>		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)		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%

DRILL TYPE: 4WD TRUCK MOUNTED DRILL RIG					SURFACE RL:								
BOREHOLE DIAMETER: 100 mm					DATUM:								
Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations	
METHOD	WATER	SAMPLES	RL (m)	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 Observed	E		0.20m		SC	FILL: Clayey SAND - fine grained, dark brown to dark grey-brown, fines of low plasticity.	D - M				FILL / TOPSOIL	
		0.20m				SP	FILL: SAND - fine to medium grained, grey and grey-brown.						FILL
		0.40m				CH	Sandy CLAY - medium to high plasticity, grey to dark grey, with some orange-brown.	M < W <sub>P</sub>			ALLUVIUM		
		E											0.55m
		E											0.85m
			1.35m	CL	Sandy CLAY/Clayey SAND - low to medium plasticity, pale grey to pale brown and pale yellow-brown.	M > W <sub>P</sub>							
			1.50m	Hole Terminated at 1.50 m Limit Of Required Investigation									
				2.0									
				2.5									
LEGEND:				Notes, Samples and Tests				Consistency		UCS (kPa)		Moisture Condition	
Water				U <sub>50</sub> 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 (Glass jar, sealed and chilled on site)				F Firm		50 - 100		W Wet	
 Water Outflow				ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)				St Stiff		100 - 200		W <sub>p</sub> Plastic Limit	
Strata Changes				B Bulk Sample				VSt Very Stiff		200 - 400		W <sub>L</sub> 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)				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

**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH23  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BS  
**DATE:** 12/5/21

**DRILL TYPE:** 4WD TRUCK MOUNTED DRILL RIG  
**BOREHOLE DIAMETER:** 100 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	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 Observed	E 0.20m				SC	FILL: Clayey SAND - fine grained, brown, fines of low plasticity, trace roots.	M				FILL / TOPSOIL
		GP				FILL: Sandy GRAVEL - fine to medium grained, sub-angular to angular, dark grey to black, fine to medium grained sand, with some slag.	FILL / COAL CHITTER					
		E 0.50m 0.50m				0.5	CLAY - medium to high plasticity, dark grey to grey, fine grained sand.	M > w <sub>p</sub>				ALLUVIUM
		E 0.60m				1.0	Sandy CLAY - medium to high plasticity, grey to dark grey and orange-brown					
				1.5			Hole Terminated at 1.50 m Limit Of Required Investigation					
				2.0								
				2.5								

<b>LEGEND:</b>		<b>Notes, Samples and Tests</b>		<b>Consistency</b>		<b>UCS (kPa)</b>	<b>Moisture Condition</b>
<b>Water</b>		U <sub>30</sub> 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 (Glass jar, sealed and chilled on site)		F	Firm	50 - 100	W Wet
Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200	W <sub>p</sub> Plastic Limit
<b>Strata Changes</b>		B Bulk Sample		VSt	Very Stiff	200 - 400	W <sub>L</sub> Liquid Limit
Gradational or transitional strata		<b>Field Tests</b>		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)		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

**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH25  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BS  
**DATE:** 12/5/21

**DRILL TYPE:** 4WD TRUCK MOUNTED DRILL RIG  
**BOREHOLE DIAMETER:** 100 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	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 Observed	E				CL	FILL: Sandy Gravelly CLAY - low to medium plasticity, dark brown, fine to medium grained, sub-rounded to sub-angular, fine to medium grained sand, with some roots.	M < w <sub>p</sub>				FILL / TOPSOIL
		0.20m		CL		Sandy CLAY - low to medium plasticity, dark grey, fine grained sand.	M > w <sub>p</sub>	ALLUVIUM				
		0.30m										
		E										
		0.40m		0.5			Grey.					
				1.0		SC	Clayey SAND - fine to medium grained, grey and orange-brown, fines of low to medium plasticity.	M				
				1.5			Hole Terminated at 1.50 m Limit Of Required Investigation					
				2.0								
				2.5								

<b>LEGEND:</b>		<b>Notes, Samples and Tests</b>		<b>Consistency</b>		<b>UCS (kPa)</b>		<b>Moisture Condition</b>	
<b>Water</b>		U <sub>50</sub> 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 (Glass jar, sealed and chilled on site)		F Firm		50 - 100		W Wet	
Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St Stiff		100 - 200		W <sub>p</sub> Plastic Limit	
<b>Strata Changes</b>		B Bulk Sample		VSt Very Stiff		200 - 400		W <sub>L</sub> Liquid Limit	
Gradational or transitional strata		<b>Field Tests</b>		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)		<b>Density</b>		V Very Loose		Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)		L Loose		MD Medium Dense		Density Index 15 - 35%	
				D Dense		VD Very Dense		Density Index 35 - 65%	
								Density Index 65 - 85%	
								Density Index 85 - 100%	


# ENGINEERING LOG - BOREHOLE

**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH26  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BS  
**DATE:** 12/5/21

**DRILL TYPE:** 4WD TRUCK MOUNTED DRILL RIG  
**BOREHOLE DIAMETER:** 100 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	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 Observed	E 0.20m				CL	FILL: Sandy Gravelly CLAY - low to medium plasticity, dark brown to dark grey-brown, fine to medium grained, sub-rounded to sub-angular gravel, fine to medium grained sand, with some slag.	M < w <sub>p</sub>				FILL / TOPSOIL
				GP		FILL: Sandy GRAVEL - fine to medium grained, sub-angular to angular, dark grey to black, fine to medium grained sand, with some slag.	M	FILL / COAL CHITTER				
		0.40m										
		0.50m 0.50m	0.5	0.50m								
		E 0.60m										
				1.0	1.00m	CH	CLAY - medium to high plasticity, grey to grey-brown and brown.	M > w <sub>p</sub>			ALLUVIUM	
				1.5	1.50m	SC	Clayey SAND - medium to coarse grained, grey and orange-brown, fines of low plasticity.	M				
							Hole Terminated at 1.50 m Limit Of Required Investigation					
				2.0								
				2.5								

<b>LEGEND:</b>		<b>Notes, Samples and Tests</b>		<b>Consistency</b>		<b>UCS (kPa)</b>	<b>Moisture Condition</b>
<b>Water</b>		U <sub>50</sub>	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 (Glass jar, sealed and chilled on site)	F	Firm	50 - 100	W Wet
Water Outflow		ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)	St	Stiff	100 - 200	w <sub>p</sub> Plastic Limit
<b>Strata Changes</b>		B	Bulk Sample	VSt	Very Stiff	200 - 400	w <sub>L</sub> Liquid Limit
Gradational or transitional strata				H	Hard	>400	
Definitive or distinct strata change				Fb	Friable		
		<b>Field Tests</b>		<b>Density</b>			
		PID	Photoionisation detector reading (ppm)	V	Very Loose	Density Index <15%	
		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 - BOREHOLE

**CLIENT:** NEWCASTLE JOCKEY CLUB  
**PROJECT:** PROPOSED STABLES DEVELOPMENT  
**LOCATION:** CNR DARLING STREET & CHATHAM STREET,  
 BROADMEADOW

**BOREHOLE NO:** BH27  
**PAGE:** 1 OF 1  
**JOB NO:** NEW20P-0194  
**LOGGED BY:** BS  
**DATE:** 12/5/21

**DRILL TYPE:** 4WD TRUCK MOUNTED DRILL RIG  
**BOREHOLE DIAMETER:** 100 mm

**SURFACE RL:**  
**DATUM:**

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	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 Observed	E				SC	0.05m	FILL: Clayey SAND - fine grained, brown, fines of low plasticity, trace roots, with slag. FILL: Sandy GRAVEL - fine to medium grained, sub-angular to angular, dark grey to black, fine to medium grained sand, with some slag.	D			FILL / TOPSOIL FILL / COAL CHITTER
		GP					D - M					
		0.20m					CLAY - medium to high plasticity, grey to grey-brown and brown.	M > w <sub>p</sub>	ALLUVIUM			
		0.30m										
		E										
		0.40m										
0.60m		CH										
E												
0.70m												
				0.5								
				1.0			1.00m	Clayey SAND - fine to medium grained, grey to pale grey and orange-brown, fines of low to medium plasticity. Possibly cemented sand at 1.0 to 1.2m	M			
				1.5			1.50m					
							Hole Terminated at 1.50 m Limit Of Required Investigation					
				2.0								
				2.5								

<b>LEGEND:</b>		<b>Notes, Samples and Tests</b>		<b>Consistency</b>		<b>UCS (kPa)</b>	<b>Moisture Condition</b>
<b>Water</b>		U <sub>50</sub>	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 (Glass jar, sealed and chilled on site)	F	Firm	50 - 100	W Wet
Water Outflow		ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)	St	Stiff	100 - 200	W <sub>p</sub> Plastic Limit
<b>Strata Changes</b>		B	Bulk Sample	VSt	Very Stiff	200 - 400	W <sub>L</sub> Liquid Limit
Gradational or transitional strata				H	Hard	>400	
Definitive or distinct strata change				Fb	Friable		
		<b>Field Tests</b>		<b>Density</b>			
		PID	Photoionisation detector reading (ppm)	V	Very Loose	Density Index <15%	
		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%	

## **APPENDIX J:**

### **Data Validation Report**



**QA/QC DATA VALIDATION REPORT****Job No: NEW20P-0194-AB****Eurofins report: 795526-S, 795526-AID, 795526-W, ES2118733****1. SAMPLE HANDLING**

Item	Yes/No	Comments
Were the sample holding times met?	Yes	
Were the samples in proper custody between collection in the field and reaching the laboratory?	Yes	
Were the samples properly and adequately preserved?	Yes	
Were the samples received by the laboratory in good condition?	Yes	

**Sampling Handling was:**

<b>Satisfactory :</b>	✓	<b>Partially Satisfactory:</b>	<b>Unsatisfactory:</b>
-----------------------	---	--------------------------------	------------------------

**2. PRECISION AND ACCURACY ASSESSMENT**

Item	Yes/No	Comment
Was a NATA registered laboratory used?	Yes	-
Did the laboratory perform the requested tests?	Yes	-
Were the laboratory methods adopted NATA endorsed?	Yes	-
Were the appropriate test procedures followed?	Yes	-
Were the reporting limits satisfactory?	Yes	-
Was the NATA seal on the reports?	Yes	-
Were the reports signed by an authorised person?	Yes	-

**Laboratory Precision and Accuracy was:**

<b>Satisfactory :</b>	✓	<b>Partially Satisfactory:</b>	<b>Unsatisfactory:</b>
-----------------------	---	--------------------------------	------------------------

**3. FIELD QA/QC****Soil, Sediment and Water Samples**

	Soil/Sediment
No. Samples Analysed	38
No. of Duplicates	2
No. of Triplicates	1
No. of Wash Blanks	0
No. of Trip Blanks	1
No. of Trip Spikes	0

**No. Days Sampling**

Item	Soil
Number of Days Sampling	2
Number of Sampling Events	1

**Field Duplicates**

Item	Yes/No	Comments
Were an adequate number of field duplicates collected?	Yes	Duplicates collected at a rate of 1 per 19 samples.
Were RPDs within control limits? No Limit for 5-10 x EQL and 30% for >10 x EQL	Yes	It is noted that low concentrations can exaggerate the percentage differences with respect to small total concentrations, therefore where results for primary and duplicate sample were less than 10 time the LOR, the RPDs have been disregarded.

**Trip Blanks/Trip Spikes**

Item	Yes/No	Comments
Were an adequate number of trip blanks and trip spikes collected?	Yes	Trip blanks collected at a rate of one per sampling event
Were the trip blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals).	Yes	
Were the trip spikes within recovery limits (between 80% and 120%)	N/A	

**Rinsate Samples**

Item	Yes/No	Comments
Were an adequate number of rinsate samples used? (1 per day of using reusable sampling equipment – trowel, hand auger etc)	No	No rinsate samples were collected. Re-useable sampling equipment was decontaminated between sampling locations, in accordance with SOP, and therefore risk of cross-contamination is low.
Were the rinsate samples free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals).	N/A	

**4. LABORATORY INTERNAL QUALITY CONTROL PROCEDURES**

A) Type of QA/QC Sample	Yes/No	Comments
Laboratory Blanks/Reagent Blanks (at least 1 per batch)	Yes	
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples)	Yes	
Matrix Spikes, Matrix Spike Duplicates (1 for each soil type)	Yes	
Laboratory Control Spike	Yes	
Surrogate (where appropriate)	Yes	

Item	Yes/No	Comments
<b>B)</b> Were the laboratory blanks and/or reagent blanks free of contamination?	Yes	
<b>C)</b> Were the spike recoveries within control limits? I: Organics/inorganics/metals (50% to 150%) II: Phenols (20% to 130%)	Yes	
<b>D)</b> Were the RPDs of the laboratory duplicates within control limits?	Yes	
<b>E)</b> Were the surrogate recoveries within control limits?	Yes	

**Laboratory Internal QA/QC was:**

<b>Satisfactory :</b>	✓	<b>Partially Satisfactory:</b>	<b>Unsatisfactory:</b>
-----------------------	---	--------------------------------	------------------------

**5. DATA USABILITY**

<b>Item</b>	<b>Yes/No</b>	<b>Comments</b>
Was the data directly usable?	Yes	
Was the data usable with the following corrections/modifications? (see comments)	NA	
Was the data not usable?	NA	

## **APPENDIX K:**

### **Laboratory Reports**



	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for Uncensored Full Data Sets											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.115/06/2021 1:10:29 PM								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10												
11	Copper											
12												
13	General Statistics											
14	Total Number of Observations				12		Number of Distinct Observations				12	
15							Number of Missing Observations				0	
16	Minimum				7.7		Mean				57.73	
17	Maximum				350		Median				30.5	
18	SD				93.24		Std. Error of Mean				26.92	
19	Coefficient of Variation				1.615		Skewness				3.308	
20												
21	Normal GOF Test											
22	Shapiro Wilk Test Statistic				0.478		Shapiro Wilk GOF Test					
23	5% Shapiro Wilk Critical Value				0.859		Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic				0.411		Lilliefors GOF Test					
25	5% Lilliefors Critical Value				0.243		Data Not Normal at 5% Significance Level					
26	Data Not Normal at 5% Significance Level											
27												
28	Assuming Normal Distribution											
29	95% Normal UCL					95% UCLs (Adjusted for Skewness)						
30	95% Student's-t UCL				106.1		95% Adjusted-CLT UCL (Chen-1995)				129.5	
31							95% Modified-t UCL (Johnson-1978)				110.3	
32												
33	Gamma GOF Test											
34	A-D Test Statistic				1.243		Anderson-Darling Gamma GOF Test					
35	5% A-D Critical Value				0.755		Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic				0.28		Kolmogorov-Smirnov Gamma GOF Test					
37	5% K-S Critical Value				0.252		Data Not Gamma Distributed at 5% Significance Level					
38	Data Not Gamma Distributed at 5% Significance Level											
39												
40	Gamma Statistics											
41	k hat (MLE)				1.063		k star (bias corrected MLE)				0.853	
42	Theta hat (MLE)				54.3		Theta star (bias corrected MLE)				67.69	
43	nu hat (MLE)				25.51		nu star (bias corrected)				20.47	
44	MLE Mean (bias corrected)				57.73		MLE Sd (bias corrected)				62.51	
45						Approximate Chi Square Value (0.05)				11.2		
46	Adjusted Level of Significance				0.029		Adjusted Chi Square Value				10.16	
47												
48	Assuming Gamma Distribution											
49	95% Approximate Gamma UCL (use when n>=50))				105.5		95% Adjusted Gamma UCL (use when n<50)				116.2	
50												
51	Lognormal GOF Test											
52	Shapiro Wilk Test Statistic				0.892		Shapiro Wilk Lognormal GOF Test					
53	5% Shapiro Wilk Critical Value				0.859		Data appear Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic				0.188		Lilliefors Lognormal GOF Test					
55	5% Lilliefors Critical Value				0.243		Data appear Lognormal at 5% Significance Level					
56	Data appear Lognormal at 5% Significance Level											
57												

	A	B	C	D	E	F	G	H	I	J	K	L
58	Lognormal Statistics											
59	Minimum of Logged Data					2.041	Mean of logged Data					3.516
60	Maximum of Logged Data					5.858	SD of logged Data					0.923
61												
62	Assuming Lognormal Distribution											
63	95% H-UCL					111.7	90% Chebyshev (MVUE) UCL					91.01
64	95% Chebyshev (MVUE) UCL					109.9	97.5% Chebyshev (MVUE) UCL					136.2
65	99% Chebyshev (MVUE) UCL					187.9						
66												
67	Nonparametric Distribution Free UCL Statistics											
68	Data appear to follow a Discernible Distribution at 5% Significance Level											
69												
70	Nonparametric Distribution Free UCLs											
71	95% CLT UCL					102	95% Jackknife UCL					106.1
72	95% Standard Bootstrap UCL					100.1	95% Bootstrap-t UCL					288.9
73	95% Hall's Bootstrap UCL					291.5	95% Percentile Bootstrap UCL					108.2
74	95% BCA Bootstrap UCL					138.2						
75	90% Chebyshev(Mean, Sd) UCL					138.5	95% Chebyshev(Mean, Sd) UCL					175
76	97.5% Chebyshev(Mean, Sd) UCL					225.8	99% Chebyshev(Mean, Sd) UCL					325.5
77												
78	Suggested UCL to Use											
79	95% H-UCL					111.7						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												
86	ProUCL computes and outputs H-statistic based UCLs for historical reasons only.											
87	H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.											
88	It is therefore recommended to avoid the use of H-statistic based 95% UCLs.											
89	Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.											
90												
91												
92	Zinc											
93												
94	General Statistics											
95	Total Number of Observations					11	Number of Distinct Observations					11
96							Number of Missing Observations					0
97	Minimum					48	Mean					200.3
98	Maximum					820	Median					94
99	SD					231.3	Std. Error of Mean					69.74
100	Coefficient of Variation					1.155	Skewness					2.282
101												
102	Normal GOF Test											
103	Shapiro Wilk Test Statistic					0.683	Shapiro Wilk GOF Test					
104	5% Shapiro Wilk Critical Value					0.85	Data Not Normal at 5% Significance Level					
105	Lilliefors Test Statistic					0.309	Lilliefors GOF Test					
106	5% Lilliefors Critical Value					0.251	Data Not Normal at 5% Significance Level					
107	Data Not Normal at 5% Significance Level											
108												
109	Assuming Normal Distribution											
110	95% Normal UCL						95% UCLs (Adjusted for Skewness)					
111	95% Student's-t UCL					326.7	95% Adjusted-CLT UCL (Chen-1995)					366.2
112							95% Modified-t UCL (Johnson-1978)					334.7
113												
114	Gamma GOF Test											

	A	B	C	D	E	F	G	H	I	J	K	L
115	A-D Test Statistic				0.821	Anderson-Darling Gamma GOF Test						
116	5% A-D Critical Value				0.745	Data Not Gamma Distributed at 5% Significance Level						
117	K-S Test Statistic				0.306	Kolmogorov-Smirnov Gamma GOF Test						
118	5% K-S Critical Value				0.261	Data Not Gamma Distributed at 5% Significance Level						
119	Data Not Gamma Distributed at 5% Significance Level											
120												
121	Gamma Statistics											
122	k hat (MLE)				1.325	k star (bias corrected MLE)						1.024
123	Theta hat (MLE)				151.1	Theta star (bias corrected MLE)						195.5
124	nu hat (MLE)				29.16	nu star (bias corrected)						22.54
125	MLE Mean (bias corrected)				200.3	MLE Sd (bias corrected)						197.9
126						Approximate Chi Square Value (0.05)						12.74
127	Adjusted Level of Significance				0.0278	Adjusted Chi Square Value						11.56
128												
129	Assuming Gamma Distribution											
130	95% Approximate Gamma UCL (use when n>=50))				354.2	95% Adjusted Gamma UCL (use when n<50)						390.5
131												
132	Lognormal GOF Test											
133	Shapiro Wilk Test Statistic				0.895	Shapiro Wilk Lognormal GOF Test						
134	5% Shapiro Wilk Critical Value				0.85	Data appear Lognormal at 5% Significance Level						
135	Lilliefors Test Statistic				0.269	Lilliefors Lognormal GOF Test						
136	5% Lilliefors Critical Value				0.251	Data Not Lognormal at 5% Significance Level						
137	Data appear Approximate Lognormal at 5% Significance Level											
138												
139	Lognormal Statistics											
140	Minimum of Logged Data				3.871	Mean of logged Data						4.877
141	Maximum of Logged Data				6.709	SD of logged Data						0.89
142												
143	Assuming Lognormal Distribution											
144	95% H-UCL				428	90% Chebyshev (MVUE) UCL						344
145	95% Chebyshev (MVUE) UCL				415.5	97.5% Chebyshev (MVUE) UCL						514.6
146	99% Chebyshev (MVUE) UCL				709.4							
147												
148	Nonparametric Distribution Free UCL Statistics											
149	Data appear to follow a Discernible Distribution at 5% Significance Level											
150												
151	Nonparametric Distribution Free UCLs											
152	95% CLT UCL				315	95% Jackknife UCL						326.7
153	95% Standard Bootstrap UCL				311.4	95% Bootstrap-t UCL						535.1
154	95% Hall's Bootstrap UCL				742.7	95% Percentile Bootstrap UCL						323
155	95% BCA Bootstrap UCL				374.5							
156	90% Chebyshev(Mean, Sd) UCL				409.5	95% Chebyshev(Mean, Sd) UCL						504.3
157	97.5% Chebyshev(Mean, Sd) UCL				635.8	99% Chebyshev(Mean, Sd) UCL						894.2
158												
159	Suggested UCL to Use											
160	95% H-UCL				428							
161												
162	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
163	Recommendations are based upon data size, data distribution, and skewness.											
164	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
165	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
166												
167	ProUCL computes and outputs H-statistic based UCLs for historical reasons only.											
168	H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.											
169	It is therefore recommended to avoid the use of H-statistic based 95% UCLs.											
170	Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.											
171												

	A	B	C	D	E	F	G	H	I	J	K	L		
172														
173	Benzo(a)pyrene TEQ													
174														
175	General Statistics													
176	Total Number of Observations					19		Number of Distinct Observations				5		
177								Number of Missing Observations				0		
178	Minimum					0.6		Mean				0.932		
179	Maximum					3.1		Median				0.6		
180	SD					0.716		Std. Error of Mean				0.164		
181	Coefficient of Variation					0.768		Skewness				2.165		
182														
183	Normal GOF Test													
184	Shapiro Wilk Test Statistic					0.543		Shapiro Wilk GOF Test						
185	5% Shapiro Wilk Critical Value					0.901		Data Not Normal at 5% Significance Level						
186	Lilliefors Test Statistic					0.468		Lilliefors GOF Test						
187	5% Lilliefors Critical Value					0.197		Data Not Normal at 5% Significance Level						
188	Data Not Normal at 5% Significance Level													
189														
190	Assuming Normal Distribution													
191	95% Normal UCL							95% UCLs (Adjusted for Skewness)						
192	95% Student's-t UCL					1.216		95% Adjusted-CLT UCL (Chen-1995)				1.289		
193								95% Modified-t UCL (Johnson-1978)				1.23		
194														
195	Gamma GOF Test													
196	A-D Test Statistic					4.422		Anderson-Darling Gamma GOF Test						
197	5% A-D Critical Value					0.748		Data Not Gamma Distributed at 5% Significance Level						
198	K-S Test Statistic					0.484		Kolmogorov-Smirnov Gamma GOF Test						
199	5% K-S Critical Value					0.2		Data Not Gamma Distributed at 5% Significance Level						
200	Data Not Gamma Distributed at 5% Significance Level													
201														
202	Gamma Statistics													
203	k hat (MLE)					2.993		k star (bias corrected MLE)				2.556		
204	Theta hat (MLE)					0.311		Theta star (bias corrected MLE)				0.365		
205	nu hat (MLE)					113.7		nu star (bias corrected)				97.12		
206	MLE Mean (bias corrected)					0.932		MLE Sd (bias corrected)				0.583		
207								Approximate Chi Square Value (0.05)				75.39		
208	Adjusted Level of Significance					0.0369		Adjusted Chi Square Value				73.71		
209														
210	Assuming Gamma Distribution													
211	95% Approximate Gamma UCL (use when n>=50))					1.2		95% Adjusted Gamma UCL (use when n<50)				1.227		
212														
213	Lognormal GOF Test													
214	Shapiro Wilk Test Statistic					0.548		Shapiro Wilk Lognormal GOF Test						
215	5% Shapiro Wilk Critical Value					0.901		Data Not Lognormal at 5% Significance Level						
216	Lilliefors Test Statistic					0.477		Lilliefors Lognormal GOF Test						
217	5% Lilliefors Critical Value					0.197		Data Not Lognormal at 5% Significance Level						
218	Data Not Lognormal at 5% Significance Level													
219														
220	Lognormal Statistics													
221	Minimum of Logged Data					-0.511		Mean of logged Data				-0.247		
222	Maximum of Logged Data					1.131		SD of logged Data				0.539		
223														
224	Assuming Lognormal Distribution													
225	95% H-UCL					1.172		90% Chebyshev (MVUE) UCL				1.241		
226	95% Chebyshev (MVUE) UCL					1.398		97.5% Chebyshev (MVUE) UCL				1.615		
227	99% Chebyshev (MVUE) UCL					2.043								
228														

	A	B	C	D	E	F	G	H	I	J	K	L
229	Nonparametric Distribution Free UCL Statistics											
230	Data do not follow a Discernible Distribution (0.05)											
231												
232	Nonparametric Distribution Free UCLs											
233	95% CLT UCL				1.202	95% Jackknife UCL					1.216	
234	95% Standard Bootstrap UCL				1.192	95% Bootstrap-t UCL					1.369	
235	95% Hall's Bootstrap UCL				1.232	95% Percentile Bootstrap UCL					1.211	
236	95% BCA Bootstrap UCL				1.268							
237	90% Chebyshev(Mean, Sd) UCL				1.424	95% Chebyshev(Mean, Sd) UCL					1.647	
238	97.5% Chebyshev(Mean, Sd) UCL				1.957	99% Chebyshev(Mean, Sd) UCL					2.565	
239												
240	Suggested UCL to Use											
241	95% Chebyshev (Mean, Sd) UCL				1.647							
242												
243	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
244	Recommendations are based upon data size, data distribution, and skewness.											
245	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
246	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
247												



**Qualtest**  
**2 Murray Dwyer Circuit**  
**Mayfield West**  
**NSW 2304**



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 18217**

Accredited for compliance with ISO/IEC 17025-Testing  
 NATA is a signatory to the ILAC Mutual Recognition  
 Arrangement for the mutual recognition of the  
 equivalence of testing, medical testing, calibration,  
 inspection and proficiency testing scheme providers  
 reports.

**Attention:** Emma Coleman  
**Report** 795526-AID  
**Project Name** **NEWCASTLE JOCKEY CLUB**  
**Project ID** **NEW20P-0194**  
**Received Date** May 14, 2021  
**Date Reported** May 25, 2021

### Methodology:

Asbestos Fibre  
 Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

*NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*

Unknown Mineral  
 Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

*NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*

Subsampling Soil  
 Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

*NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*

Bonded asbestos-  
 containing material  
 (ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

*NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*

Limit of Reporting

The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).

The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).

*NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

**Project Name** NEWCASTLE JOCKEY CLUB  
**Project ID** NEW20P-0194  
**Date Sampled** May 12, 2021 to May 13, 2021  
**Report** 795526-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH13 0.0-0.2	21-My30204	May 12, 2021	Approximate Sample 794g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH15 0.0-0.2	21-My30207	May 12, 2021	Approximate Sample 603g Sample consisted of: Brown coarse-grained soil, coal, glass, debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Synthetic mineral fibre detected. Organic fibre detected. No trace asbestos detected.
BH16 0.0-0.2	21-My30209	May 12, 2021	Approximate Sample 780g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH17 0.0-0.2	21-My30210	May 12, 2021	Approximate Sample 376g Sample consisted of: Brown coarse-grained clayey soil, coal, debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH18 0.0-0.2	21-My30213	May 12, 2021	Approximate Sample 487g Sample consisted of: Brown coarse-grained soil, coal, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH20 0.0-0.2	21-My30216	May 12, 2021	Approximate Sample 646g Sample consisted of: Brown coarse-grained sandy soil, coal, organic debris, and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH21 0.0-0.2	21-My30218	May 12, 2021	Approximate Sample 579g Sample consisted of: Brown coarse-grained sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH21 0.4-0.5	21-My30219	May 12, 2021	Approximate Sample 691g Sample consisted of: Brown coarse-grained soil, brick, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH24 0.0-0.2	21-My30223	May 12, 2021	Approximate Sample 564g Sample consisted of: Brown coarse-grained sandy soil, coal and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH25 0.0-0.2	21-My30225	May 12, 2021	Approximate Sample 552g Sample consisted of: Brown coarse-grained soil, coal, glass, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH27 0.0-0.2	21-My30228	May 12, 2021	Approximate Sample 448g Sample consisted of: Brown coarse-grained soil, coal, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS2 0.0-0.2	21-My30235	May 13, 2021	Approximate Sample 787g Sample consisted of: Brown coarse-grained soil, glass, coal, brick and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS3 0.0-0.1	21-My30236	May 13, 2021	Approximate Sample 36g Sample consisted of: Brown coarse-grained sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS4 0.0-0.2	21-My30238	May 13, 2021	Approximate Sample 562g Sample consisted of: Brown coarse-grained sandy soil, coal, glass, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS6 0.0-0.2	21-My30241	May 13, 2021	Approximate Sample 586g Sample consisted of: Brown coarse-grained sandy soil, corroded metal, coal and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS7 0.0-0.2	21-My30243	May 13, 2021	Approximate Sample 736g Sample consisted of: Brown coarse-grained soil, coal, bitumen and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	May 17, 2021	Indefinite
Asbestos - LTM-ASB-8020	Sydney	May 17, 2021	Indefinite

## Australia

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**Company Name:** Qualtest  
**Address:** 2 Murray Dwyer Circuit  
Mayfield West  
NSW 2304  
  
**Project Name:** NEWCASTLE JOCKEY CLUB  
**Project ID:** NEW20P-0194

**Order No.:**  
**Report #:** 795526  
**Phone:** 02 4968 4468  
**Fax:** 02 4960 9775

**Received:** May 14, 2021 12:00 PM  
**Due:** May 21, 2021  
**Priority:** 5 Day  
**Contact Name:** Emma Coleman

**Eurofins Analytical Services Manager : Andrew Black**

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	BH13 0.0-0.1	May 12, 2021		Soil	N21-My30203							X		X		
2	BH13 0.0-0.2	May 12, 2021		Soil	N21-My30204		X									
3	BH14 0.0-0.1	May 12, 2021		Soil	N21-My30205							X		X		
4	BH15 0.0-0.1	May 12, 2021		Soil	N21-My30206						X	X		X		
5	BH15 0.0-0.2	May 12, 2021		Soil	N21-My30207		X									
6	BH16 0.0-0.1	May 12, 2021		Soil	N21-My30208							X		X		
7	BH16 0.0-0.2	May 12, 2021		Soil	N21-My30209		X									
8	BH17 0.0-0.2	May 12, 2021		Soil	N21-My30210		X									
9	BH17 0.4-0.5	May 12, 2021		Soil	N21-My30211							X		X		



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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
10	BH18 0.0-0.1	May 12, 2021		Soil	N21-My30212						X	X				
11	BH18 0.0-0.2	May 12, 2021		Soil	N21-My30213		X									
12	BH18 0.4-0.5	May 12, 2021		Soil	N21-My30214							X		X		
13	BH19 0.0-0.1	May 12, 2021		Soil	N21-My30215							X			X	
14	BH20 0.0-0.2	May 12, 2021		Soil	N21-My30216		X									
15	BH20 0.4-0.5	May 12, 2021		Soil	N21-My30217							X			X	
16	BH21 0.0-0.2	May 12, 2021		Soil	N21-My30218		X									
17	BH21 0.4-0.5	May 12, 2021		Soil	N21-My30219		X									
18	BH22 0.0-0.1	May 12, 2021		Soil	N21-My30220							X			X	
19	BH23 0.0-0.1	May 12, 2021		Soil	N21-My30221							X			X	
20	BH24 0.0-0.1	May 12, 2021		Soil	N21-My30222					X	X	X	X	X		

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
21	BH24 0.0-0.2	May 12, 2021		Soil	N21-My30223		X									
22	BH25 0.0-0.1	May 12, 2021		Soil	N21-My30224							X			X	
23	BH25 0.0-0.2	May 12, 2021		Soil	N21-My30225		X									
24	BH26 0.0-0.1	May 12, 2021		Soil	N21-My30226							X		X		
25	BH27 0.0-0.1	May 12, 2021		Soil	N21-My30227							X			X	
26	BH27 0.0-0.2	May 12, 2021		Soil	N21-My30228		X									
27	D.12.5.21	May 12, 2021		Soil	N21-My30229							X			X	
28	D1.12.5.21	May 12, 2021		Soil	N21-My30230							X		X		
29	TB.13.5.21	May 12, 2021		Water	N21-My30231											X
30	TB.13.5.21	May 12, 2021		Water	N21-My30232				X							
31	SS1 0.0-0.1	May 13, 2021		Soil	N21-My30233							X		X		

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
32	SS2 0.0-0.1	May 13, 2021		Soil	N21-My30234							X		X		
33	SS2 0.0-0.2	May 13, 2021		Soil	N21-My30235		X									
34	SS3 0.0-0.1	May 13, 2021		Soil	N21-My30236	X						X			X	
35	SS4 0.0-0.1	May 13, 2021		Soil	N21-My30237							X		X		
36	SS4 0.0-0.2	May 13, 2021		Soil	N21-My30238		X									
37	SS5 0.0-0.1	May 13, 2021		Soil	N21-My30239							X			X	
38	SS6 0.0-0.1	May 13, 2021		Soil	N21-My30240						X	X		X		
39	SS6 0.0-0.2	May 13, 2021		Soil	N21-My30241		X									
40	SS7 0.0-0.1	May 13, 2021		Soil	N21-My30242						X	X		X		
41	SS7 0.0-0.2	May 13, 2021		Soil	N21-My30243		X									
42	SS8 0.0-0.1	May 12, 2021		Soil	N21-My30244							X		X		

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
43	BH13 0.4-0.5	May 12, 2021		Soil	N21-My30282				X							
44	BH13 0.65-0.75	May 12, 2021		Soil	N21-My30283				X							
45	BH13 0.9-1.0	May 12, 2021		Soil	N21-My30284				X							
46	BH14 0.0-0.2	May 12, 2021		Soil	N21-My30285				X							
47	BH14 0.4-0.5	May 12, 2021		Soil	N21-My30286				X							
48	BH14 0.6-0.7	May 12, 2021		Soil	N21-My30287				X							
49	BH14 0.9-1.0	May 12, 2021		Soil	N21-My30288				X							
50	BH15 0.4-0.5	May 12, 2021		Soil	N21-My30289				X							
51	BH15 0.9-1.0	May 12, 2021		Soil	N21-My30290				X							
52	BH15 1.0-1.1	May 12, 2021		Soil	N21-My30291				X							

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
53	BH16 0.4-0.5	May 12, 2021		Soil	N21-My30292				X							
54	BH16 0.7-0.8	May 12, 2021		Soil	N21-My30293				X							
55	BH17 0.0-0.1	May 12, 2021		Soil	N21-My30294				X							
56	BH17 0.9-1.0	May 12, 2021		Soil	N21-My30295				X							
57	BH17 1.0-1.1	May 12, 2021		Soil	N21-My30296				X							
58	BH18 0.6-0.7	May 12, 2021		Soil	N21-My30297				X							
59	BH18 0.7-0.8	May 12, 2021		Soil	N21-My30298			X								
60	BH18 1.2-1.3	May 12, 2021		Soil	N21-My30299			X								
61	BH19 0.0-0.2	May 13, 2021		Soil	N21-My30300				X							
62	BH20 0.0-0.1	May 12, 2021		Soil	N21-My30301				X							
63	BH20 1.0-1.1	May 12, 2021		Soil	N21-My30302				X							



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Mayfield East NSW 2304  
PO Box 60 Wickham 2293  
Phone : +61 2 4968 8448  
NATA # 1261 Site # 25079

## New Zealand

**Auckland**  
35 O'Rourke Road  
Penrose, Auckland 1061  
Phone : +64 9 526 45 51  
IANZ # 1327

**Christchurch**  
43 Detroit Drive  
Rolleston, Christchurch 7675  
Phone : 0800 856 450  
IANZ # 1290

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Company Name:** Qualtest  
**Address:** 2 Murray Dwyer Circuit  
Mayfield West  
NSW 2304

**Project Name:** NEWCASTLE JOCKEY CLUB  
**Project ID:** NEW20P-0194

**Order No.:**  
**Report #:** 795526  
**Phone:** 02 4968 4468  
**Fax:** 02 4960 9775

**Received:** May 14, 2021 12:00 PM  
**Due:** May 21, 2021  
**Priority:** 5 Day  
**Contact Name:** Emma Coleman

**Eurofins Analytical Services Manager : Andrew Black**

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
64	BH21 0.0-0.1	May 12, 2021		Soil	N21-My30303				X							
65	BH21 0.7-0.8	May 12, 2021		Soil	N21-My30304				X							
66	BH22 0.0-0.2	May 12, 2021		Soil	N21-My30305				X							
67	BH22 0.4-0.55	May 12, 2021		Soil	N21-My30306				X							
68	BH22 0.55-0.85	May 12, 2021		Soil	N21-My30307				X							
69	BH23 0.0-0.2	May 12, 2021		Soil	N21-My30308				X							
70	BH23 0.4-0.5	May 12, 2021		Soil	N21-My30309				X							
71	BH23 0.5-0.6	May 12, 2021		Soil	N21-My30310				X							
72	BH25 0.3-0.4	May 12, 2021		Soil	N21-My30311				X							
73	BH26 0.0-0.2	May 12, 2021		Soil	N21-My30312				X							

## Australia

**Melbourne**  
6 Monterey Road  
Dandenong South VIC 3175  
Phone : +61 3 8564 5000  
NATA # 1261  
Site # 1254 & 14271

**Sydney**  
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16 Mars Road  
Lane Cove West NSW 2066  
Phone : +61 2 9900 8400  
NATA # 1261 Site # 18217

**Brisbane**  
1/21 Smallwood Place  
Murarrie QLD 4172  
Phone : +61 7 3902 4600  
NATA # 1261 Site # 20794

**Perth**  
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Welshpool WA 6106  
Phone : +61 8 9251 9600  
NATA # 1261  
Site # 23736

**Newcastle**  
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Mayfield East NSW 2304  
PO Box 60 Wickham 2293  
Phone : +61 2 4968 8448  
NATA # 1261 Site # 25079

## New Zealand

**Auckland**  
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Penrose, Auckland 1061  
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IANZ # 1327

**Christchurch**  
43 Detroit Drive  
Rolleston, Christchurch 7675  
Phone : 0800 856 450  
IANZ # 1290

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Company Name:** Qualtest  
**Address:** 2 Murray Dwyer Circuit  
Mayfield West  
NSW 2304

**Project Name:** NEWCASTLE JOCKEY CLUB  
**Project ID:** NEW20P-0194

**Order No.:**  
**Report #:** 795526  
**Phone:** 02 4968 4468  
**Fax:** 02 4960 9775

**Received:** May 14, 2021 12:00 PM  
**Due:** May 21, 2021  
**Priority:** 5 Day  
**Contact Name:** Emma Coleman

**Eurofins Analytical Services Manager : Andrew Black**

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
74	BH26 0.4-0.5	May 12, 2021		Soil	N21-My30313				X							
75	BH26 0.5-0.6	May 12, 2021		Soil	N21-My30314				X							
76	BH27 0.3-0.4	May 12, 2021		Soil	N21-My30315				X							
77	BH27 0.6-0.7	May 12, 2021		Soil	N21-My30316			X								
78	SS1 0.0-0.2	May 13, 2021		Soil	N21-My30317				X							
79	SS3 0.0-0.2	May 13, 2021		Soil	N21-My30318				X							
80	SS5 0.0-0.2	May 13, 2021		Soil	N21-My30319				X							
81	SS8 0.0-0.2	May 12, 2021		Soil	N21-My30320				X							
Test Counts						1	15	3	37	1	5	25	1	15	9	1

## Internal Quality Control Review and Glossary

### General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
5. This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

### Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

### Terms

<b>Dry</b>	Sample is dried by heating prior to analysis
<b>LOR</b>	Limit of Reporting
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>ISO</b>	International Standards Organisation
<b>AS</b>	Australian Standards
<b>WA DOH</b>	Reference document for the NEPM. Government of Western Australia, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2009), including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil (2011)
<b>NEPM</b>	National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended)
<b>ACM</b>	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded and/or sound condition. For the purposes of the NEPM, ACM is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
<b>AF</b>	Asbestos Fines. Asbestos containing materials, including friable, weathered and bonded materials, able to pass a 7mm x 7mm sieve. Considered under the NEPM as equivalent to "non-bonded / friable".
<b>FA</b>	Fibrous Asbestos. Asbestos containing materials in a friable and/or severely weathered condition. For the purposes of the NEPM, FA is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
<b>Friable</b>	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
<b>Trace Analysis</b>	Analytical procedure used to detect the presence of respirable fibres in the matrix.

## Comments

My30236: The sample received was not collected in an approved asbestos bag and was therefore sub-sampled from the 250mL glass jar. Valid sub-sampling procedures were applied so as to ensure that the sub-sample to be analysed accurately represented the sample received.

My30210, My30213, My30228: Samples received were less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

## Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

## Qualifier Codes/Comments

Code	Description
N/A	Not applicable

## Asbestos Counter/Identifier:

Laxman Dias Senior Analyst-Asbestos (NSW)

## Authorised by:

Chamath JHM Annakkage Senior Analyst-Asbestos (NSW)



**Glenn Jackson**  
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

\* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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# CHAIN OF CUSTODY RECORD

Environ. Environmental Testing ABN 90 005 085 321

☐ Sydney Laboratory

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PO Box 2400, Sydney NSW 1585  
Environ@envirotest.com.au

☐ Brisbane Laboratory

Unit 1/17 South Street, Brisbane QLD 4000  
PO Box 1800, Brisbane QLD 4000  
Environ@envirotest.com.au

☐ Perth Laboratory

Unit 2/11-13 South Street, Perth WA 6000  
PO Box 1950, Perth WA 6000  
Environ@envirotest.com.au

☐ Melbourne Laboratory

Unit 1/11-13 South Street, Melbourne VIC 3000  
PO Box 2000, Melbourne VIC 3000  
Environ@envirotest.com.au

<b>Company</b>		<b>QuaTest</b>		<b>Project Name</b>		<b>NEW20P-0194</b>		<b>Project Manager</b>		<b>Emma Coleman</b>		<b>Sampled by</b>		<b>Billy Snow</b>	
<b>Address</b>		2 Murray Dwyer Circuit Mayfield West NSW 2304		<b>Project Name</b>		Newcastle Jockey Club		<b>EDD Format</b>		Excel		<b>Handled over by</b>			
<b>Contact Name</b>		Emma Coleman		<b>Analyses</b>		Suite B7 (Metals, BTEX, PAHs, TRH)		Asbestos (NEPM %w/w)		Suite B4 (PAHs, BTEX, TRH)		OCPs			
<b>Phone No</b>		0423 359 411		<small>Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing.</small>											
<b>Special Directions</b>															
<b>Purchase Order</b>															
<b>Quote ID No</b>		180622QUAN-1													
<b>No</b>		<b>Client Sample ID</b>		<b>Sampled Date/Time</b>		<b>Matrix</b>									
1		BH13 0.0-0.1		12/05/21		SOIL		X							
2		BH13 0.0-0.2		12/05/21		SOIL		X							
3		BH13 0.4-0.5		12/05/21		SOIL									
4		BH13 0.65-0.75		12/05/21		SOIL									
5		BH13 0.9-1.0		12/05/21		SOIL									
6		BH14 0.0-0.1		12/05/21		SOIL		X							
7		BH14 0.0-0.2		12/05/21		SOIL									
8		BH14 0.4-0.5		12/05/21		SOIL									
9		BH14 0.6-0.7		12/05/21		SOIL									
10		BH14 0.9-1.0		12/05/21		SOIL									
		<b>Total Counts</b>		2		1									
<b>Method at Shipment</b>		<input type="checkbox"/> Courier #		<input type="checkbox"/> Hand Delivered		<input type="checkbox"/> Postal		<b>Name</b>		<b>Billy Snow</b>		<b>Signature</b>		<b>Date</b>	
<b>Laboratory Use Only</b>		<b>Received By</b>		<b>Signature</b>		<b>Signature</b>		<b>Date</b>		<b>Date</b>		<b>Time</b>		<b>Report No</b>	
		Emma		[Signature]		[Signature]		14/5/21		14/5/21		12pm		795526	





# CHAIN OF CUSTODY RECORD

Enabling Environmental Testing ABN 90 005 085 521

☐ Sydney Laboratory  
Unit F3 Bld F 16 Mars Road Sydney NSW 2005  
02 9550 8800 Email: enquiries@qualitest.com

☐ Brisbane Laboratory  
Unit 1/27 Millwood Place Brisbane QLD 4172  
07 2802 4800 Email: enquiries@qualitest.com

☐ Perth Laboratory  
Unit 2/101 Lake Highway (Kempson Rd) Perth WA 6105  
08 9251 1500 Email: enquiries@qualitest.com

☐ Melbourne Laboratory  
8 Montague Road Dingley Victoria VIC 3176  
03 9584 1500 Email: enquiries@qualitest.com

Company		Qualitest		Project Name		NEW20P-0194		Project Manager		Emma Coleman		Sample(s)		Billy Snow	
Address		2 Murray Dwyer Circuit Mayfield West NSW 2304		Newcastle Jockey Club				Excel				Handed over by			
Contact Name		Emma Coleman										Email for Invoice		accounts@qualitest.com.au	
Phone No		0429 359 411										Email for Results		bbybez@qualitest.com.au emmacoleman@qualitest.com.au stephencullen@qualitest.com.au billysnow@qualitest.com.au	
Special Directions															
Purchase Order															
Quote ID No		180622QUAN-1													
				Analyses Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing.											
				Suite B7 (Metals, BTEX, PAHs, TRH)											
				Asbestos (NEPM %w/w)											
				Suite B4 (PAHs, BTEX, TRH)											
				OCPs											
				pH and CEC											
No		Client Sample ID		Sampled Date/Time		Matrix									
				(dd/mm/yyyy hh:mm)		(Soil, Water, etc)									
1		BH15 0.0-0.1		12/05/21		SOIL		X				X		1	
2		BH15 0.0-0.2		12/05/21		SOIL				X				1	
3		BH15 0.4-0.5		12/05/21		SOIL								1	
4		BH15 0.9-1.0		12/05/21		SOIL								1	
5		BH15 1.0-1.1		12/05/21		SOIL								1	
6		BH16 0.0-0.1		12/05/21		SOIL		X						1	
7		BH16 0.0-0.2		12/05/21		SOIL				X				1	
8		BH16 0.4-0.5		12/05/21		SOIL								1	
9		BH16 0.7-0.8		12/05/21		SOIL								1	
10		BH17 0.0-0.1		12/05/21		SOIL								1	
				Total Counts		2		2		1				8 5	

Method of Shipment		<input type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered		<input type="checkbox"/> Postal		Name		Billy Snow		Signature		Date		14.5.21		Time		11:30	
Laboratory Use Only		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature				Date				Time		Temperature		Report No	
		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature				Date				Time					



# CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory

Unit 1, Level 10, 100 Macquarie Street, Sydney NSW 2000  
Tel: (02) 9221 5000 Email: [info@eurofins.com.au](mailto:info@eurofins.com.au)

☐ Brisbane Laboratory

Unit 12, Brisbane Water, 1000 Murrumbidgee Drive, Brisbane QLD 4000  
Tel: (07) 3502 4000 Email: [info@eurofins.com.au](mailto:info@eurofins.com.au)

☐ Perth Laboratory

Unit 2, 311 Leach Highway, Perth WA 6006  
Tel: (08) 9221 5000 Email: [info@eurofins.com.au](mailto:info@eurofins.com.au)

☐ Melbourne Laboratory

4 St Albans Road, Traralgon VIC 3175  
Tel: (03) 9524 5500 Email: [info@eurofins.com.au](mailto:info@eurofins.com.au)

Company		Qualitest		Project No		NEW20P-0194		Project Manager		Emma Coleman		Sample(s)		Billy Snow					
Address		2 Murray Dwyer Circuit Mayfield West NSW 2304		Project Name		Newcastle Jockey Club		EDQ Format		Excel		Handed over by							
Contact Name		Emma Coleman		Analyses Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing.		Suite B7 (Metals, BTEX, PAHs, TRH)		Asbestos (NEPM %w/w)		Suite B4 (PAHs, BTEX, TRH)		OCPs		Email for Invoice		accounts@qualitest.com.au			
Phone No		0429 359 411														Email for Results		libbyjoe@qualitest.com.au emmacoleman@qualitest.com.au stephculien@qualitest.com.au billysnow@qualitest.com.au	
Special Directions																Containers		Required Turnaround Time (TAT)	
Purchase Order																*Surcharge will apply			
Quote ID No		180622QUAN-1														Overnight (reporting by 9am) ♦ Same day ♦ 1 day ♦ 2 days ♦ 3 5 days (Standard) Other (			
Client Sample ID		Samp'd Date/Time		Matrix												Sample Comments			
1		BH17 0.0-0.2		12/05/21		SOIL										/ Dangerous Goods Hazard Warning			
2		BH17 0.4-0.5		12/05/21		SOIL										Page 3 of 9			
3		BH17 0.9-1.0		12/05/21		SOIL													
4		BH17 1.0-1.1		12/05/21		SOIL													
5		BH18 0.0-0.1		12/05/21		SOIL													
6		BH18 0.0-0.2		12/05/21		SOIL													
7		BH18 0.4-0.5		12/05/21		SOIL													
8		BH18 0.6-0.7		12/05/21		SOIL													
9		BH18 0.7-0.8		12/05/21		SOIL													
10		BH18 1.2-1.3		12/05/21		SOIL													
Method of Shipment		<input type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered		<input type="checkbox"/> Postal		Name		Billy Snow		Signature		Date		14.5.21		Time			
Laboratory Use Only		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Temperature		Report No					
Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		Time		Temperature		Report No							





# CHAIN OF CUSTODY RECORD

Eurofins Environmental Testing, ABN 60 005 085 521

☐ Sydney Laboratory  
Unit E3 Bld F 16 Moss Forest Lane, Crows Nest NSW 1585  
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☐ Brisbane Laboratory  
Unit 1 21 Smallwood Place, Murarie QLD 4172  
Tel: 2062 4000 Email: sales@eurofins.com.au

☐ Perth Laboratory  
Unit 2 21 Leach Highway, Rockingham WA 6116  
Tel: 9251 1000 Email: sales@eurofins.com.au

☐ Melbourne Laboratory  
3 Melbury Road, Brunswick North VIC 3175  
Tel: 03 9354 2000 Email: sales@eurofins.com.au

Company	Qualitest	Project No	NEW20P-0194	Project Manager	Emma Coleman	Sampled by	Billy Snow
Address	2 Murray Dwyer Circuit Mayfield West NSW 2304	Newcastle Jockey Club		Excel		Handed over by	
Contact Name	Emma Coleman					Email for Invoice	accounts@qualitest.com.au
Phone No	0429 359 411					Email for Results	lilyb@qualitest.com.au emma@qualitest.com.au steph@qualitest.com.au billysnow@qualitest.com.au
Special Directions						Containers	500mL Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS4984, WA Guidelines)
Purchase Order						Required Turnaround Time (TAT)	Overnight (reporting by 9am) Same day 2 days 5 days (Standard) Other
Quote ID No	180622QUAN-1					Change container type & size if necessary.	Default will be 5 days if not stated.

No	Client Sample ID	Sampled Date/Time	Matrix	Substrate	Volume (mL)	Analysis	Test Results	Comments
1	BH22 0.0-0.1	12/05/21	SOIL			Suite B7 (Metals, BTEX, PAHs, TRH)		
2	BH22 0.0-0.2	12/05/21	SOIL			Asbestos (NEPM %w/w)		
3	BH22 0.4-0.55	12/05/21	SOIL			Suite B4 (PAHs, BTEX, TRH)		
4	BH22 0.55-0.85	12/05/21	SOIL			OCPs		
5	BH23 0.0-0.1	12/05/21	SOIL			pH & CEC		
6	BH23 0.0-0.2	12/05/21	SOIL					
7	BH23 0.4-0.5	12/05/21	SOIL					
8	BH23 0.5-0.6	12/05/21	SOIL					
9	BH24 0.0-0.1	13/05/21	SOIL					
10	BH24 0.0-0.2	13/05/21	SOIL					
Total Counts		1	1	2	1	1		

Method of Shipment	<input type="checkbox"/> Courier (# )	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name	Billy Snow	Signature	Date	14.5.21	Time	11:30
--------------------	---------------------------------------	---	---------------------------------	------	------------	-----------	------	---------	------	-------

Laboratory Use Only	Received By	Received By	Signature	Date	Time	Temperature	Report No
	SVI   BNE   MEL   PER   ADL   WTL   DRW	SVI   BNE   MEL   PER   ADL   WTL   DRW					



# CHAIN OF CUSTODY RECORD

Environics Environmental Testing Australia Pty Ltd  
ABN 50 005 085 521

☐ Sydney Laboratory  
Unit F3 Bldg F 16 Mars  
16/22/21400 - 16/22/21400  
16/22/21400 - 16/22/21400

☐ Brisbane Laboratory  
Unit 1 & 21 Southwood Place Brisbane QLD 4122  
07 3302 8800 - 07 3302 8800  
07 3302 8800 - 07 3302 8800

☐ Perth Laboratory  
Unit 2 111 Leach Highway Kalamunda WA 6150  
08 9281 9000 - 08 9281 9000  
08 9281 9000 - 08 9281 9000

☐ Melbourne Laboratory  
10 Dandenong Road Dandenong Vic 3175  
03 9581 5500 - 03 9581 5500  
03 9581 5500 - 03 9581 5500

Company		Quatrest		Project Name		NEW20P-0194		Project Manager		Emma Coleman		Sampler(s)		Billy Snow	
Address		2 Murray Dwyer Circuit Mayfield West NSW 2304		Newcastle Jockey Club				END Format		Excel		Handed over by			
Contact Name		Emma Coleman										Email for Invoice		accounts@quatrest.com.au	
Phone No		0429 359 411										Email for Results		libby@quatrest.com.au emma@quatrest.com.au steph@quatrest.com.au billy@quatrest.com.au	
Special Directions												Containers		Required Turnaround Time (TAT)	
Purchase Order												500mL Plastic		Overnight (reporting by 9am) <input type="checkbox"/>	
Quote ID No		180622QUAN-1										250mL Plastic		Same day <input type="checkbox"/> 1 day <input type="checkbox"/>	
												125mL Plastic		2 days <input checked="" type="checkbox"/> 3 days (Standard) <input type="checkbox"/>	
												200mL Amber Glass		5 days (Standard) <input type="checkbox"/>	
												40mL VOA vial		Other (Asbestos AS4964, WA Guidelines) <input type="checkbox"/>	
												500mL PFAS Bottle		Other (Asbestos AS4964, WA Guidelines) <input type="checkbox"/>	
												Jar (Glass or HDPE)		Other (Asbestos AS4964, WA Guidelines) <input type="checkbox"/>	
														Sample Comments	
Client Sample ID		BH25 0.0-0.1		Sampled Date/Time		12/05/21		Matrix		Soil				/ Dangerous Goods Hazard Warning	
		BH25 0.0-0.2		12/05/21		SOIL									
		BH25 0.3-0.4		12/05/21		SOIL									
		BH26 0.0-0.1		12/05/21		SOIL									
		BH26 0.0-0.2		12/05/21		SOIL									
		BH26 0.4-0.5		12/05/21		SOIL									
		BH26 0.5-0.6		12/05/21		SOIL									
		BH27 0.0-0.1		12/05/21		SOIL									
		BH27 0.0-0.2		12/05/21		SOIL									
		BH27 0.3-0.4		12/05/21		SOIL									
		Total Counts		1		2		2							
Method of Shipment		<input type="checkbox"/> Courier (#)		<input type="checkbox"/> Hand Delivered		<input type="checkbox"/> Postal		Name		Billy Snow		Signature		Date	
Laboratory Use Only		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date		14.5.21		Time		11:30	
		Received By		SYD   BNE   MEL   PER   ADL   NTL   DRW		Signature		Date				Time		Report No	





# CHAIN OF CUSTODY RECORD

Environ | Environmental Testing | 1804 50 505 521

☐ Sydney Laboratory  
Unit 1 SH/5, 10 Years Road, Unit 100 West Ryde NSW 1585 2055  
02 9550 5050 | Environ@sydneylab.com.au

☐ Brisbane Laboratory  
Unit 1/20 Sandstone Place Brisbane QLD 4112  
07 7442 4500 | Environ@brisbanelab.com.au

☐ Perth Laboratory  
Unit 2/11 Leinster Highway, Perth WA 6105  
08 9251 1092 | Environ@perthlab.com.au

☐ Melbourne Laboratory  
10 Railway Road, Dandenong South VIC 3175  
03 9554 5000 | Environ@melbournelab.com.au

Company		Qualitest		Project No		NEW20P-0194		Project Manager		Emma Coleman		Sampler(s)		Billy Snow	
Address		2 Murray Dwyer Circuit Mayfield West NSW 2304		Project Name		Newcastle Jockey Club		EOD Format		Excel		Handed over by			
Contact Name		Emma Coleman		Analyses		Suite B7( Metals, BTEX, PAHs, TRH)		Asbestos (NEPM %w/w)		Suite B4 (PAHs, BTEX, TRH)		OCPs		BTEX	
Phone No		0429 359 411		When metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing.											
Special Directions															
Purchase Order															
Quote ID No		180622QUAN-1													
No		Client Sample ID		Sampled Date/Time dd/mm/yyyy hh:mm		Matrix Solid (S) Water (W)									
1		BH27 0.6-0.7		12/05/21		SOIL									
2		D.12.5.21		12/05/21		SOIL		X							
3		T.12.5.21		12/05/21		SOIL				X					
4		D1.12.5.21		12/05/21		SOIL		X							
5		T1.12.5.21		12/05/21		SOIL								SEND TO ALS	
6		TB.13.5.21		12/05/21		Water		X							
7		SS1 0.0-0.1		13/05/21		SOIL		X							
8		SS1 0.0-0.2		13/05/21		SOIL									
9		SS2 0.0-0.1		13/05/21		SOIL		X							
10		SS2 0.0-0.2		13/05/21		SOIL		X							
		Total Counts		3		1		1		1		1			
Method of Shipment		<input type="checkbox"/> Courier (# ) <input type="checkbox"/> Hand Delivered		<input type="checkbox"/> Postal		Name		Billy Snow		Signature		Date		14.5.21	
Laboratory Use Only		Received By		Received By		Signature		Signature		Date		Time		Temperature	
Eurofins Environment Testing Australia Pty Ltd		Received By		Signature		Signature		Date		Time		Report No			

Sample Comments  
/ Dangerous Goods Hazard Warning

500mL Plastic	<input type="checkbox"/>
250mL Plastic	<input type="checkbox"/>
125mL Plastic	<input type="checkbox"/>
200mL Amber Glass	<input type="checkbox"/>
40mL VOA vial	<input type="checkbox"/>
500mL PFAS Bottle	<input type="checkbox"/>
Jar (Glass or HDPE)	<input type="checkbox"/>
Other (Asbestos AS4984, WA Guidelines)	<input type="checkbox"/>

Containers	Required Turnaround Time (TAT)
Change container type & size if necessary.	Detail me in 3 days if possible.
Overnight (reporting by 9am) ♦	<input type="checkbox"/>
Same day ♦	<input type="checkbox"/>
2 days ♦	<input type="checkbox"/>
5 days (Standard)	<input type="checkbox"/>
Other	<input type="checkbox"/>

Email for invoice  
accounts@qualitest.com.au

Email for results  
bby@qualitest.com.au  
steph@qualitest.com.au  
billysnow@qualitest.com.au

Subsidiary of samples to this laboratory will be assigned to acceptance of samples | Environmental Testing Standard Terms and Conditions, unless request otherwise | A copy is available on request





Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory

☐ Brisbane Laboratory

Perth Laboratory

Unit 2: 1. A math assignment is available 9/12/25

☐ **Not applicable**

**Woolbourne Laboratory**  
2 Woolbourne Road, Christchurch, 8011, N.Z.

[illegible]

**Qualtest**  
**2 Murray Dwyer Circuit**  
**Mayfield West**  
**NSW 2304**



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 25079**

Accredited for compliance with ISO/IEC 17025 – Testing  
 NATA is a signatory to the ILAC Mutual Recognition  
 Arrangement for the mutual recognition of the  
 equivalence of testing, medical testing, calibration,  
 inspection and proficiency testing scheme providers  
 reports.

**Attention:** **Emma Coleman**

**Report** **795526-W**  
 Project name **NEWCASTLE JOCKEY CLUB**  
 Project ID **NEW20P-0194**  
 Received Date **May 14, 2021**

<b>Client Sample ID</b>			<b>TB.13.5.21</b>
<b>Sample Matrix</b>			<b>Water</b>
<b>Eurofins Sample No.</b>			<b>N21-My30231</b>
<b>Date Sampled</b>			<b>May 12, 2021</b>
Test/Reference	LOR	Unit	
Naphthalene <sup>N02</sup>	0.01	mg/L	< 0.01
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>			
TRH C6-C9	0.02	mg/L	< 0.02
<b>BTEX</b>			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	102
<b>Total Recoverable Hydrocarbons</b>			
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	0.02	mg/L	< 0.02

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	May 19, 2021	7 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Sydney	May 19, 2021	14 Days
Total Recoverable Hydrocarbons - Method: LTM-ORG-2010 TRH C6-C40	Sydney	May 19, 2021	7 Days



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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Company Name:** Qualtest  
**Address:** 2 Murray Dwyer Circuit  
Mayfield West  
NSW 2304

**Project Name:** NEWCASTLE JOCKEY CLUB  
**Project ID:** NEW20P-0194

**Order No.:**  
**Report #:** 795526  
**Phone:** 02 4968 4468  
**Fax:** 02 4960 9775

**Received:** May 14, 2021 12:00 PM  
**Due:** May 21, 2021  
**Priority:** 5 Day  
**Contact Name:** Emma Coleman

**Eurofins Analytical Services Manager : Andrew Black**

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	BH13 0.0-0.1	May 12, 2021		Soil	N21-My30203							X		X		
2	BH13 0.0-0.2	May 12, 2021		Soil	N21-My30204		X									
3	BH14 0.0-0.1	May 12, 2021		Soil	N21-My30205							X		X		
4	BH15 0.0-0.1	May 12, 2021		Soil	N21-My30206						X	X		X		
5	BH15 0.0-0.2	May 12, 2021		Soil	N21-My30207		X									
6	BH16 0.0-0.1	May 12, 2021		Soil	N21-My30208							X		X		
7	BH16 0.0-0.2	May 12, 2021		Soil	N21-My30209		X									
8	BH17 0.0-0.2	May 12, 2021		Soil	N21-My30210		X									
9	BH17 0.4-0.5	May 12, 2021		Soil	N21-My30211							X		X		

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**Company Name:** Qualtest  
**Address:** 2 Murray Dwyer Circuit  
Mayfield West  
NSW 2304

**Project Name:** NEWCASTLE JOCKEY CLUB  
**Project ID:** NEW20P-0194

**Order No.:**  
**Report #:** 795526  
**Phone:** 02 4968 4468  
**Fax:** 02 4960 9775

**Received:** May 14, 2021 12:00 PM  
**Due:** May 21, 2021  
**Priority:** 5 Day  
**Contact Name:** Emma Coleman

**Eurofins Analytical Services Manager : Andrew Black**

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
10	BH18 0.0-0.1	May 12, 2021		Soil	N21-My30212						X	X				
11	BH18 0.0-0.2	May 12, 2021		Soil	N21-My30213		X									
12	BH18 0.4-0.5	May 12, 2021		Soil	N21-My30214							X		X		
13	BH19 0.0-0.1	May 12, 2021		Soil	N21-My30215							X			X	
14	BH20 0.0-0.2	May 12, 2021		Soil	N21-My30216		X									
15	BH20 0.4-0.5	May 12, 2021		Soil	N21-My30217							X			X	
16	BH21 0.0-0.2	May 12, 2021		Soil	N21-My30218		X									
17	BH21 0.4-0.5	May 12, 2021		Soil	N21-My30219		X									
18	BH22 0.0-0.1	May 12, 2021		Soil	N21-My30220							X			X	
19	BH23 0.0-0.1	May 12, 2021		Soil	N21-My30221							X			X	
20	BH24 0.0-0.1	May 12, 2021		Soil	N21-My30222					X	X	X	X	X		

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Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
21	BH24 0.0-0.2	May 12, 2021		Soil	N21-My30223		X									
22	BH25 0.0-0.1	May 12, 2021		Soil	N21-My30224							X			X	
23	BH25 0.0-0.2	May 12, 2021		Soil	N21-My30225		X									
24	BH26 0.0-0.1	May 12, 2021		Soil	N21-My30226							X		X		
25	BH27 0.0-0.1	May 12, 2021		Soil	N21-My30227							X			X	
26	BH27 0.0-0.2	May 12, 2021		Soil	N21-My30228		X									
27	D.12.5.21	May 12, 2021		Soil	N21-My30229							X			X	
28	D1.12.5.21	May 12, 2021		Soil	N21-My30230							X		X		
29	TB.13.5.21	May 12, 2021		Water	N21-My30231											X
30	TB.13.5.21	May 12, 2021		Water	N21-My30232				X							
31	SS1 0.0-0.1	May 13, 2021		Soil	N21-My30233							X		X		

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Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
32	SS2 0.0-0.1	May 13, 2021		Soil	N21-My30234							X		X		
33	SS2 0.0-0.2	May 13, 2021		Soil	N21-My30235		X									
34	SS3 0.0-0.1	May 13, 2021		Soil	N21-My30236	X						X			X	
35	SS4 0.0-0.1	May 13, 2021		Soil	N21-My30237							X		X		
36	SS4 0.0-0.2	May 13, 2021		Soil	N21-My30238		X									
37	SS5 0.0-0.1	May 13, 2021		Soil	N21-My30239							X			X	
38	SS6 0.0-0.1	May 13, 2021		Soil	N21-My30240						X	X		X		
39	SS6 0.0-0.2	May 13, 2021		Soil	N21-My30241		X									
40	SS7 0.0-0.1	May 13, 2021		Soil	N21-My30242						X	X		X		
41	SS7 0.0-0.2	May 13, 2021		Soil	N21-My30243		X									
42	SS8 0.0-0.1	May 12, 2021		Soil	N21-My30244							X		X		

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**Project Name:** NEWCASTLE JOCKEY CLUB  
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**Received:** May 14, 2021 12:00 PM  
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Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
43	BH13 0.4-0.5	May 12, 2021		Soil	N21-My30282				X							
44	BH13 0.65-0.75	May 12, 2021		Soil	N21-My30283				X							
45	BH13 0.9-1.0	May 12, 2021		Soil	N21-My30284				X							
46	BH14 0.0-0.2	May 12, 2021		Soil	N21-My30285				X							
47	BH14 0.4-0.5	May 12, 2021		Soil	N21-My30286				X							
48	BH14 0.6-0.7	May 12, 2021		Soil	N21-My30287				X							
49	BH14 0.9-1.0	May 12, 2021		Soil	N21-My30288				X							
50	BH15 0.4-0.5	May 12, 2021		Soil	N21-My30289				X							
51	BH15 0.9-1.0	May 12, 2021		Soil	N21-My30290				X							
52	BH15 1.0-1.1	May 12, 2021		Soil	N21-My30291				X							



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Rolleston, Christchurch 7675  
Phone : 0800 856 450  
IANZ # 1290

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

**Company Name:** Qualtest  
**Address:** 2 Murray Dwyer Circuit  
Mayfield West  
NSW 2304

**Project Name:** NEWCASTLE JOCKEY CLUB  
**Project ID:** NEW20P-0194

**Order No.:**  
**Report #:** 795526  
**Phone:** 02 4968 4468  
**Fax:** 02 4960 9775

**Received:** May 14, 2021 12:00 PM  
**Due:** May 21, 2021  
**Priority:** 5 Day  
**Contact Name:** Emma Coleman

**Eurofins Analytical Services Manager : Andrew Black**

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
53	BH16 0.4-0.5	May 12, 2021		Soil	N21-My30292				X							
54	BH16 0.7-0.8	May 12, 2021		Soil	N21-My30293				X							
55	BH17 0.0-0.1	May 12, 2021		Soil	N21-My30294				X							
56	BH17 0.9-1.0	May 12, 2021		Soil	N21-My30295				X							
57	BH17 1.0-1.1	May 12, 2021		Soil	N21-My30296				X							
58	BH18 0.6-0.7	May 12, 2021		Soil	N21-My30297				X							
59	BH18 0.7-0.8	May 12, 2021		Soil	N21-My30298			X								
60	BH18 1.2-1.3	May 12, 2021		Soil	N21-My30299			X								
61	BH19 0.0-0.2	May 13, 2021		Soil	N21-My30300				X							
62	BH20 0.0-0.1	May 12, 2021		Soil	N21-My30301				X							
63	BH20 1.0-1.1	May 12, 2021		Soil	N21-My30302				X							

## Australia

**Melbourne**  
6 Monterey Road  
Dandenong South VIC 3175  
Phone : +61 3 8564 5000  
NATA # 1261  
Site # 1254 & 14271

**Sydney**  
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16 Mars Road  
Lane Cove West NSW 2066  
Phone : +61 2 9900 8400  
NATA # 1261 Site # 18217

**Brisbane**  
1/21 Smallwood Place  
Murarrie QLD 4172  
Phone : +61 7 3902 4600  
NATA # 1261 Site # 20794

**Perth**  
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Welshpool WA 6106  
Phone : +61 8 9251 9600  
NATA # 1261  
Site # 23736

**Newcastle**  
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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
64	BH21 0.0-0.1	May 12, 2021		Soil	N21-My30303				X							
65	BH21 0.7-0.8	May 12, 2021		Soil	N21-My30304				X							
66	BH22 0.0-0.2	May 12, 2021		Soil	N21-My30305				X							
67	BH22 0.4-0.55	May 12, 2021		Soil	N21-My30306				X							
68	BH22 0.55-0.85	May 12, 2021		Soil	N21-My30307				X							
69	BH23 0.0-0.2	May 12, 2021		Soil	N21-My30308				X							
70	BH23 0.4-0.5	May 12, 2021		Soil	N21-My30309				X							
71	BH23 0.5-0.6	May 12, 2021		Soil	N21-My30310				X							
72	BH25 0.3-0.4	May 12, 2021		Soil	N21-My30311				X							
73	BH26 0.0-0.2	May 12, 2021		Soil	N21-My30312				X							

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
74	BH26 0.4-0.5	May 12, 2021		Soil	N21-My30313				X							
75	BH26 0.5-0.6	May 12, 2021		Soil	N21-My30314				X							
76	BH27 0.3-0.4	May 12, 2021		Soil	N21-My30315				X							
77	BH27 0.6-0.7	May 12, 2021		Soil	N21-My30316			X								
78	SS1 0.0-0.2	May 13, 2021		Soil	N21-My30317				X							
79	SS3 0.0-0.2	May 13, 2021		Soil	N21-My30318				X							
80	SS5 0.0-0.2	May 13, 2021		Soil	N21-My30319				X							
81	SS8 0.0-0.2	May 12, 2021		Soil	N21-My30320				X							
Test Counts						1	15	3	37	1	5	25	1	15	9	1

## Internal Quality Control Review and Glossary

### General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

**\*\*NOTE:** pH duplicates are reported as a range NOT as RPD

### Units

<b>mg/kg:</b> milligrams per kilogram	<b>mg/L:</b> milligrams per litre	<b>ug/L:</b> micrograms per litre
<b>ppm:</b> Parts per million	<b>ppb:</b> Parts per billion	<b>%:</b> Percentage
<b>org/100mL:</b> Organisms per 100 millilitres	<b>NTU:</b> Nephelometric Turbidity Units	<b>MPN/100mL:</b> Most Probable Number of organisms per 100 millilitres

### Terms

<b>Dry</b>	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
<b>LOR</b>	Limit of Reporting.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>CRM</b>	Certified Reference Material - reported as percent recovery.
<b>Method Blank</b>	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
<b>Surr - Surrogate</b>	The addition of a like compound to the analyte target and reported as percentage recovery.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>USEPA</b>	United States Environmental Protection Agency
<b>APHA</b>	American Public Health Association
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>QSM</b>	US Department of Defense Quality Systems Manual Version 5.3
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>NC</b>	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
<b>TEQ</b>	Toxic Equivalency Quotient

### QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

### QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

## Quality Control Results

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Method Blank</b>								
Naphthalene			mg/L	< 0.01		0.01	Pass	
<b>Method Blank</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>								
TRH C6-C9			mg/L	< 0.02		0.02	Pass	
<b>Method Blank</b>								
<b>BTEX</b>								
Benzene			mg/L	< 0.001		0.001	Pass	
Toluene			mg/L	< 0.001		0.001	Pass	
Ethylbenzene			mg/L	< 0.001		0.001	Pass	
m&p-Xylenes			mg/L	< 0.002		0.002	Pass	
o-Xylene			mg/L	< 0.001		0.001	Pass	
Xylenes - Total*			mg/L	< 0.003		0.003	Pass	
<b>Method Blank</b>								
<b>Total Recoverable Hydrocarbons</b>								
TRH C6-C10			mg/L	< 0.02		0.02	Pass	
<b>LCS - % Recovery</b>								
Naphthalene			%	92		70-130	Pass	
<b>LCS - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>								
TRH C6-C9			%	105		70-130	Pass	
<b>LCS - % Recovery</b>								
<b>BTEX</b>								
Benzene			%	104		70-130	Pass	
Toluene			%	100		70-130	Pass	
Ethylbenzene			%	102		70-130	Pass	
m&p-Xylenes			%	99		70-130	Pass	
o-Xylene			%	107		70-130	Pass	
Xylenes - Total*			%	102		70-130	Pass	
<b>LCS - % Recovery</b>								
<b>Total Recoverable Hydrocarbons</b>								
TRH C6-C10			%	106		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>								
				Result 1				
Naphthalene	S21-My32964	NCP	%	92		70-130	Pass	
<b>Spike - % Recovery</b>								
				Result 1				
TRH C6-C9	S21-My32964	NCP	%	112		70-130	Pass	
<b>Spike - % Recovery</b>								
				Result 1				
Benzene	S21-My32964	NCP	%	97		70-130	Pass	
Toluene	S21-My32964	NCP	%	97		70-130	Pass	
Ethylbenzene	S21-My32964	NCP	%	99		70-130	Pass	
m&p-Xylenes	S21-My32964	NCP	%	95		70-130	Pass	
o-Xylene	S21-My32964	NCP	%	99		70-130	Pass	
Xylenes - Total*	S21-My32964	NCP	%	96		70-130	Pass	
<b>Spike - % Recovery</b>								
				Result 1				
TRH C6-C10	S21-My32964	NCP	%	116		70-130	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
				Result 1	Result 2	RPD			
Naphthalene	S21-My40483	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH C6-C9	S21-My40483	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
<b>Duplicate</b>									
<b>BTEX</b>				Result 1	Result 2	RPD			
Benzene	S21-My40483	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S21-My40483	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S21-My40483	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S21-My40483	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S21-My40483	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S21-My40483	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons</b>				Result 1	Result 2	RPD			
TRH C6-C10	S21-My40483	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	

## Comments

### Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

### Qualifier Codes/Comments

Code	Description
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

### Authorised by:

Andrew Black                      Analytical Services Manager  
 Roopesh Rangarajan            Senior Analyst-Volatile (NSW)



**Glenn Jackson**  
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

\* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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## Sample Receipt Advice

**Company name:** Qualtest  
**Contact name:** Emma Coleman  
**Project name:** NEWCASTLE JOCKEY CLUB  
**Project ID:** NEW20P-0194  
**Turnaround time:** 5 Day  
**Date/Time received:** May 14, 2021 12:00 PM  
**Eurofins reference:** 795526

## Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✓ Split sample sent to requested external lab.
- ✓ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

## Notes

Trip spike not received. | Bag not received for SS3 0.0-0.1, unable to analyse for AsbWA. Logged for Asb instead. | BH18 0.7-0.8, BH18 1.2-1.3 and BH27 0.6-0.7 not received.

## Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

**Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com**

Results will be delivered electronically via email to Emma Coleman - emmacoleman@qualtest.com.au.

**Qualtest**  
**2 Murray Dwyer Circuit**  
**Mayfield West**  
**NSW 2304**



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 25079**

Accredited for compliance with ISO/IEC 17025 – Testing  
 NATA is a signatory to the ILAC Mutual Recognition  
 Arrangement for the mutual recognition of the  
 equivalence of testing, medical testing, calibration,  
 inspection and proficiency testing scheme providers  
 reports.

**Attention:** Emma Coleman

**Report** 795526-S  
**Project name** NEWCASTLE JOCKEY CLUB  
**Project ID** NEW20P-0194  
**Received Date** May 14, 2021

Client Sample ID			BH13 0.0-0.1	BH14 0.0-0.1	BH15 0.0-0.1	BH16 0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N21-My30203	N21-My30205	N21-My30206	N21-My30208
Date Sampled			May 12, 2021	May 12, 2021	May 12, 2021	May 12, 2021
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	23	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	150	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	210	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	383	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	67	73	80	93
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			BH13 0.0-0.1 Soil N21-My30203 May 12, 2021	BH14 0.0-0.1 Soil N21-My30205 May 12, 2021	BH15 0.0-0.1 Soil N21-My30206 May 12, 2021	BH16 0.0-0.1 Soil N21-My30208 May 12, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	99	101	104	102
p-Terphenyl-d14 (surr.)	1	%	106	108	98	108
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	200	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	200	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	400	< 100
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	< 2	10	15	2.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	20	13	17
Copper	5	mg/kg	7.7	24	350	17
Lead	5	mg/kg	8.3	8.5	410	5.8
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	20	17	12
Zinc	5	mg/kg	85	69	2900	48
% Moisture	1	%	3.0	5.4	13	9.1
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4,4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.2	mg/kg	-	-	< 0.2	-
Toxaphene	0.1	mg/kg	-	-	< 0.1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.2	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.2	-
Dibutylchloroendate (surr.)	1	%	-	-	98	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	104	-



Client Sample ID			BH17 0.4-0.5 Soil N21-My30211 May 12, 2021	BH18 0.0-0.1 Soil N21-My30212 May 12, 2021	BH18 0.4-0.5 Soil N21-My30214 May 12, 2021	BH19 0.0-0.1 Soil N21-My30215 May 12, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	25	-	27	< 20
TRH C15-C28	50	mg/kg	250	-	140	< 50
TRH C29-C36	50	mg/kg	< 50	-	< 50	91
TRH C10-C36 (Total)	50	mg/kg	275	-	167	91
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	72	-	68	99
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	-	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	-	< 20	< 20
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	0.6	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	0.6	< 0.5
Phenanthrene	0.5	mg/kg	0.6	-	0.7	< 0.5
Pyrene	0.5	mg/kg	0.6	-	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	1.8	-	1.3	< 0.5
2-Fluorobiphenyl (surr.)	1	%	109	-	110	103
p-Terphenyl-d14 (surr.)	1	%	111	-	115	110
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	280	-	150	< 100
TRH >C34-C40	100	mg/kg	< 100	-	< 100	110
TRH >C10-C40 (total)*	100	mg/kg	280	-	150	110

Client Sample ID			BH17 0.4-0.5 Soil N21-My30211 May 12, 2021	BH18 0.0-0.1 Soil N21-My30212 May 12, 2021	BH18 0.4-0.5 Soil N21-My30214 May 12, 2021	BH19 0.0-0.1 Soil N21-My30215 May 12, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	38	-	4.3	-
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	-
Chromium	5	mg/kg	8.4	-	5.4	-
Copper	5	mg/kg	110	-	20	-
Lead	5	mg/kg	130	-	10.0	-
Mercury	0.1	mg/kg	< 0.1	-	< 0.1	-
Nickel	5	mg/kg	17	-	8.7	-
Zinc	5	mg/kg	620	-	19	-
% Moisture	1	%	16	27	27	21
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4,4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.2	mg/kg	-	< 0.2	-	-
Toxaphene	0.1	mg/kg	-	< 0.1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.2	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.2	-	-
Dibutylchloroendate (surr.)	1	%	-	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	101	-	-

Client Sample ID			BH20 0.4-0.5 Soil N21-My30217 May 12, 2021	BH22 0.0-0.1 Soil N21-My30220 May 12, 2021	BH23 0.0-0.1 Soil N21-My30221 May 12, 2021	BH24 0.0-0.1 Soil N21-My30222 May 12, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	110	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	110	< 50	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	65	81	74	77
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	2.8	< 0.5	1.7
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	3.1	0.6	1.9
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	3.3	1.2	2.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.6
Benz(a)anthracene	0.5	mg/kg	< 0.5	1.5	< 0.5	1.3
Benzo(a)pyrene	0.5	mg/kg	< 0.5	2.2	< 0.5	1.2
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	1.2	< 0.5	1.3
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	1.9	< 0.5	0.8
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	1.8	< 0.5	1.0
Chrysene	0.5	mg/kg	< 0.5	1.9	< 0.5	1.2
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	4.4	< 0.5	3.8
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	1.4	< 0.5	0.7
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	1.2	< 0.5	2.8
Pyrene	0.5	mg/kg	< 0.5	4.5	< 0.5	3.3
Total PAH*	0.5	mg/kg	< 0.5	22	< 0.5	18
2-Fluorobiphenyl (surr.)	1	%	106	103	104	99
p-Terphenyl-d14 (surr.)	1	%	114	100	108	99
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	200	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	200	< 100	< 100

Client Sample ID			BH20 0.4-0.5	BH22 0.0-0.1	BH23 0.0-0.1	BH24 0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N21-My30217	N21-My30220	N21-My30221	N21-My30222
Date Sampled			May 12, 2021	May 12, 2021	May 12, 2021	May 12, 2021
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	-	-	-	4.0
Cadmium	0.4	mg/kg	-	-	-	< 0.4
Chromium	5	mg/kg	-	-	-	9.8
Copper	5	mg/kg	-	-	-	35
Lead	5	mg/kg	-	-	-	60
Mercury	0.1	mg/kg	-	-	-	< 0.1
Nickel	5	mg/kg	-	-	-	9.3
Zinc	5	mg/kg	-	-	-	97
% Moisture	1	%	31	16	38	22
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	-	28
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	-	5.9
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	-	-	< 0.1
4,4'-DDD	0.05	mg/kg	-	-	-	< 0.05
4,4'-DDE	0.05	mg/kg	-	-	-	< 0.05
4,4'-DDT	0.05	mg/kg	-	-	-	< 0.05
a-BHC	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-BHC	0.05	mg/kg	-	-	-	< 0.05
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.2	mg/kg	-	-	-	< 0.2
Toxaphene	0.1	mg/kg	-	-	-	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	-	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	-	< 0.2
Dibutylchloroendate (surr.)	1	%	-	-	-	134
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	97
<b>Cation Exchange Capacity</b>						
Cation Exchange Capacity	0.05	meq/100g	-	-	-	11

Client Sample ID			BH25 0.0-0.1 Soil N21-My30224 May 12, 2021	BH26 0.0-0.1 Soil N21-My30226 May 12, 2021	BH27 0.0-0.1 Soil N21-My30227 May 12, 2021	D.12.5.21 Soil N21-My30229 May 12, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	56	82	93
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	56	82	93
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	76	76	77	82
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	1.3	1.9	2.3
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	1.5	2.2	2.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.8	2.4	2.8
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	0.9	1.3	1.3
Benzo(a)pyrene	0.5	mg/kg	< 0.5	1.0	1.5	1.8
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	0.6	0.9	1.2
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	0.8	1.2	1.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	0.7	1.2	1.4
Chrysene	0.5	mg/kg	< 0.5	1.0	1.4	1.6
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	3.5	3.6	3.9
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	0.6	0.8	1.0
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	2.2	1.2	1.0
Pyrene	0.5	mg/kg	< 0.5	3.2	3.5	4.0
Total PAH*	0.5	mg/kg	< 0.5	14.5	16.6	18.7
2-Fluorobiphenyl (surr.)	1	%	104	108	110	94
p-Terphenyl-d14 (surr.)	1	%	110	109	107	94
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	120	150
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	120	150



Client Sample ID			BH25 0.0-0.1 Soil N21-My30224 May 12, 2021	BH26 0.0-0.1 Soil N21-My30226 May 12, 2021	BH27 0.0-0.1 Soil N21-My30227 May 12, 2021	D.12.5.21 Soil N21-My30229 May 12, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	-	4.2	-	-
Cadmium	0.4	mg/kg	-	< 0.4	-	-
Chromium	5	mg/kg	-	37	-	-
Copper	5	mg/kg	-	26	-	-
Lead	5	mg/kg	-	55	-	-
Mercury	0.1	mg/kg	-	< 0.1	-	-
Nickel	5	mg/kg	-	63	-	-
Zinc	5	mg/kg	-	94	-	-
% Moisture	1	%	45	15	20	15

Client Sample ID			D1.12.5.21 Soil N21-My30230 May 12, 2021	SS1 0.0-0.1 Soil N21-My30233 May 13, 2021	SS2 0.0-0.1 Soil N21-My30234 May 13, 2021	SS3 0.0-0.1 Soil N21-My30236 May 13, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 100
TRH C15-C28	50	mg/kg	< 50	< 50	88	68
TRH C29-C36	50	mg/kg	< 50	< 50	100	320
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	188	388
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	87	INT	79	91
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 250
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			D1.12.5.21 Soil N21-My30230 May 12, 2021	SS1 0.0-0.1 Soil N21-My30233 May 13, 2021	SS2 0.0-0.1 Soil N21-My30234 May 13, 2021	SS3 0.0-0.1 Soil N21-My30236 May 13, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	97	97	97	75
p-Terphenyl-d14 (surr.)	1	%	101	95	97	63
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 250
TRH >C16-C34	100	mg/kg	< 100	< 100	190	340
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	170
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	190	510
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	9.6	2.6	8.5	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	15	18	6.8	-
Copper	5	mg/kg	20	21	38	-
Lead	5	mg/kg	9.2	6.8	49	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	16	13	9.4	-
Zinc	5	mg/kg	68	57	270	-
% Moisture	1	%	4.8	11	14	31

Client Sample ID			SS4 0.0-0.1 Soil N21-My30237 May 13, 2021	SS5 0.0-0.1 Soil N21-My30239 May 13, 2021	SS6 0.0-0.1 Soil N21-My30240 May 13, 2021	SS7 0.0-0.1 Soil N21-My30242 May 13, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 100
TRH C15-C28	50	mg/kg	73	< 50	52	310
TRH C29-C36	50	mg/kg	110	< 50	58	570
TRH C10-C36 (Total)	50	mg/kg	183	< 50	110	880
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	80	75	87	85

Client Sample ID			SS4 0.0-0.1	SS5 0.0-0.1	SS6 0.0-0.1	SS7 0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N21-My30237	N21-My30239	N21-My30240	N21-My30242
Date Sampled			May 13, 2021	May 13, 2021	May 13, 2021	May 13, 2021
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 250
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	0.7	< 0.5	0.9	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	0.6	< 0.5	1.0	< 0.5
Total PAH*	0.5	mg/kg	1.3	< 0.5	2.9	< 0.5
2-Fluorobiphenyl (surr.)	1	%	98	96	91	90
p-Terphenyl-d14 (surr.)	1	%	96	94	99	78
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 250
TRH >C16-C34	100	mg/kg	130	< 100	< 100	760
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	360
TRH >C10-C40 (total)*	100	mg/kg	130	< 100	< 100	1120
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	3.6	-	5.6	5.8
Cadmium	0.4	mg/kg	0.5	-	0.6	1.4
Chromium	5	mg/kg	7.1	-	17	26
Copper	5	mg/kg	20	-	59	50
Lead	5	mg/kg	180	-	220	500
Mercury	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Nickel	5	mg/kg	6.9	-	17	16
Zinc	5	mg/kg	190	-	390	820
% Moisture	1	%	12	28	22	9.9
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	< 1
4,4'-DDD	0.05	mg/kg	-	-	< 0.05	< 0.5
4,4'-DDE	0.05	mg/kg	-	-	< 0.05	< 0.5
4,4'-DDT	0.05	mg/kg	-	-	< 0.05	< 0.5
a-BHC	0.05	mg/kg	-	-	< 0.05	< 0.5

Client Sample ID			SS4 0.0-0.1	SS5 0.0-0.1	SS6 0.0-0.1	SS7 0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N21-My30237	N21-My30239	N21-My30240	N21-My30242
Date Sampled			May 13, 2021	May 13, 2021	May 13, 2021	May 13, 2021
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Aldrin	0.05	mg/kg	-	-	< 0.05	< 0.5
b-BHC	0.05	mg/kg	-	-	< 0.05	< 0.5
d-BHC	0.05	mg/kg	-	-	< 0.05	< 0.5
Dieldrin	0.05	mg/kg	-	-	< 0.05	< 0.5
Endosulfan I	0.05	mg/kg	-	-	< 0.05	< 0.5
Endosulfan II	0.05	mg/kg	-	-	< 0.05	< 0.5
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	< 0.5
Endrin	0.05	mg/kg	-	-	< 0.05	< 0.5
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	< 0.5
Endrin ketone	0.05	mg/kg	-	-	< 0.05	< 0.5
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	< 0.5
Heptachlor	0.05	mg/kg	-	-	< 0.05	< 0.5
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	< 0.5
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	< 0.5
Methoxychlor	0.2	mg/kg	-	-	< 0.2	< 0.5
Toxaphene	0.1	mg/kg	-	-	< 0.1	< 10
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	< 0.5
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.2	< 1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.2	< 1
Dibutylchloroendate (surr.)	1	%	-	-	121	85
Tetrachloro-m-xylene (surr.)	1	%	-	-	91	97

Client Sample ID			SS8 0.0-0.1
Sample Matrix			Soil
Eurofins Sample No.			N21-My30244
Date Sampled			May 12, 2021
Test/Reference	LOR	Unit	
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	62
TRH C10-C36 (Total)	50	mg/kg	62
<b>BTEX</b>			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	89
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>			
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20

<b>Client Sample ID</b>			<b>SS8 0.0-0.1</b>
<b>Sample Matrix</b>			<b>Soil</b>
<b>Eurofins Sample No.</b>			<b>N21-My30244</b>
<b>Date Sampled</b>			<b>May 12, 2021</b>
Test/Reference	LOR	Unit	
<b>Polycyclic Aromatic Hydrocarbons</b>			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	93
p-Terphenyl-d14 (surr.)	1	%	91
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>			
TRH >C10-C16	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
<b>Heavy Metals</b>			
Arsenic	2	mg/kg	3.8
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	7.4
Copper	5	mg/kg	45
Lead	5	mg/kg	89
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	9.4
Zinc	5	mg/kg	83
% Moisture	1	%	13



## Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	May 20, 2021	14 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Sydney	May 20, 2021	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	May 20, 2021	14 Days
Eurofins Suite B4			
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	May 20, 2021	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	May 20, 2021	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 20, 2021	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	May 17, 2021	14 Days
Conductivity (1:5 aqueous extract at 25°C as rec.) - Method: LTM-INO-4030 Conductivity	Sydney	May 21, 2021	7 Days
Cation Exchange Capacity - Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage	Melbourne	May 21, 2021	180 Days
pH (1:5 Aqueous extract at 25°C as rec.) - Method: LTM-GEN-7090 pH in soil by ISE	Sydney	May 20, 2021	7 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	May 20, 2021	14 Days

## Australia

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6 Monterey Road  
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Site # 1254 & 14271

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NATA # 1261 Site # 18217

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**Company Name:** Qualtest  
**Address:** 2 Murray Dwyer Circuit  
Mayfield West  
NSW 2304

**Project Name:** NEWCASTLE JOCKEY CLUB  
**Project ID:** NEW20P-0194

**Order No.:**  
**Report #:** 795526  
**Phone:** 02 4968 4468  
**Fax:** 02 4960 9775

**Received:** May 14, 2021 12:00 PM  
**Due:** May 21, 2021  
**Priority:** 5 Day  
**Contact Name:** Emma Coleman

**Eurofins Analytical Services Manager : Andrew Black**

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	BH13 0.0-0.1	May 12, 2021		Soil	N21-My30203							X		X		
2	BH13 0.0-0.2	May 12, 2021		Soil	N21-My30204		X									
3	BH14 0.0-0.1	May 12, 2021		Soil	N21-My30205							X		X		
4	BH15 0.0-0.1	May 12, 2021		Soil	N21-My30206						X	X		X		
5	BH15 0.0-0.2	May 12, 2021		Soil	N21-My30207		X									
6	BH16 0.0-0.1	May 12, 2021		Soil	N21-My30208							X		X		
7	BH16 0.0-0.2	May 12, 2021		Soil	N21-My30209		X									
8	BH17 0.0-0.2	May 12, 2021		Soil	N21-My30210		X									
9	BH17 0.4-0.5	May 12, 2021		Soil	N21-My30211							X		X		

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**Eurofins Analytical Services Manager : Andrew Black**

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
10	BH18 0.0-0.1	May 12, 2021		Soil	N21-My30212						X	X				
11	BH18 0.0-0.2	May 12, 2021		Soil	N21-My30213		X									
12	BH18 0.4-0.5	May 12, 2021		Soil	N21-My30214							X		X		
13	BH19 0.0-0.1	May 12, 2021		Soil	N21-My30215							X			X	
14	BH20 0.0-0.2	May 12, 2021		Soil	N21-My30216		X									
15	BH20 0.4-0.5	May 12, 2021		Soil	N21-My30217							X			X	
16	BH21 0.0-0.2	May 12, 2021		Soil	N21-My30218		X									
17	BH21 0.4-0.5	May 12, 2021		Soil	N21-My30219		X									
18	BH22 0.0-0.1	May 12, 2021		Soil	N21-My30220							X			X	
19	BH23 0.0-0.1	May 12, 2021		Soil	N21-My30221							X			X	
20	BH24 0.0-0.1	May 12, 2021		Soil	N21-My30222					X	X	X	X	X		

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
21	BH24 0.0-0.2	May 12, 2021		Soil	N21-My30223		X									
22	BH25 0.0-0.1	May 12, 2021		Soil	N21-My30224							X			X	
23	BH25 0.0-0.2	May 12, 2021		Soil	N21-My30225		X									
24	BH26 0.0-0.1	May 12, 2021		Soil	N21-My30226							X		X		
25	BH27 0.0-0.1	May 12, 2021		Soil	N21-My30227							X			X	
26	BH27 0.0-0.2	May 12, 2021		Soil	N21-My30228		X									
27	D.12.5.21	May 12, 2021		Soil	N21-My30229							X			X	
28	D1.12.5.21	May 12, 2021		Soil	N21-My30230							X		X		
29	TB.13.5.21	May 12, 2021		Water	N21-My30231											X
30	TB.13.5.21	May 12, 2021		Water	N21-My30232				X							
31	SS1 0.0-0.1	May 13, 2021		Soil	N21-My30233							X		X		

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
32	SS2 0.0-0.1	May 13, 2021		Soil	N21-My30234							X		X		
33	SS2 0.0-0.2	May 13, 2021		Soil	N21-My30235		X									
34	SS3 0.0-0.1	May 13, 2021		Soil	N21-My30236	X						X			X	
35	SS4 0.0-0.1	May 13, 2021		Soil	N21-My30237							X		X		
36	SS4 0.0-0.2	May 13, 2021		Soil	N21-My30238		X									
37	SS5 0.0-0.1	May 13, 2021		Soil	N21-My30239							X			X	
38	SS6 0.0-0.1	May 13, 2021		Soil	N21-My30240						X	X		X		
39	SS6 0.0-0.2	May 13, 2021		Soil	N21-My30241		X									
40	SS7 0.0-0.1	May 13, 2021		Soil	N21-My30242						X	X		X		
41	SS7 0.0-0.2	May 13, 2021		Soil	N21-My30243		X									
42	SS8 0.0-0.1	May 12, 2021		Soil	N21-My30244							X		X		



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**Project Name:** NEWCASTLE JOCKEY CLUB  
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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
43	BH13 0.4-0.5	May 12, 2021		Soil	N21-My30282				X							
44	BH13 0.65-0.75	May 12, 2021		Soil	N21-My30283				X							
45	BH13 0.9-1.0	May 12, 2021		Soil	N21-My30284				X							
46	BH14 0.0-0.2	May 12, 2021		Soil	N21-My30285				X							
47	BH14 0.4-0.5	May 12, 2021		Soil	N21-My30286				X							
48	BH14 0.6-0.7	May 12, 2021		Soil	N21-My30287				X							
49	BH14 0.9-1.0	May 12, 2021		Soil	N21-My30288				X							
50	BH15 0.4-0.5	May 12, 2021		Soil	N21-My30289				X							
51	BH15 0.9-1.0	May 12, 2021		Soil	N21-My30290				X							
52	BH15 1.0-1.1	May 12, 2021		Soil	N21-My30291				X							

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
53	BH16 0.4-0.5	May 12, 2021		Soil	N21-My30292				X							
54	BH16 0.7-0.8	May 12, 2021		Soil	N21-My30293				X							
55	BH17 0.0-0.1	May 12, 2021		Soil	N21-My30294				X							
56	BH17 0.9-1.0	May 12, 2021		Soil	N21-My30295				X							
57	BH17 1.0-1.1	May 12, 2021		Soil	N21-My30296				X							
58	BH18 0.6-0.7	May 12, 2021		Soil	N21-My30297				X							
59	BH18 0.7-0.8	May 12, 2021		Soil	N21-My30298			X								
60	BH18 1.2-1.3	May 12, 2021		Soil	N21-My30299			X								
61	BH19 0.0-0.2	May 13, 2021		Soil	N21-My30300				X							
62	BH20 0.0-0.1	May 12, 2021		Soil	N21-My30301				X							
63	BH20 1.0-1.1	May 12, 2021		Soil	N21-My30302				X							

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Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
64	BH21 0.0-0.1	May 12, 2021		Soil	N21-My30303				X							
65	BH21 0.7-0.8	May 12, 2021		Soil	N21-My30304				X							
66	BH22 0.0-0.2	May 12, 2021		Soil	N21-My30305				X							
67	BH22 0.4-0.55	May 12, 2021		Soil	N21-My30306				X							
68	BH22 0.55-0.85	May 12, 2021		Soil	N21-My30307				X							
69	BH23 0.0-0.2	May 12, 2021		Soil	N21-My30308				X							
70	BH23 0.4-0.5	May 12, 2021		Soil	N21-My30309				X							
71	BH23 0.5-0.6	May 12, 2021		Soil	N21-My30310				X							
72	BH25 0.3-0.4	May 12, 2021		Soil	N21-My30311				X							
73	BH26 0.0-0.2	May 12, 2021		Soil	N21-My30312				X							

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**Project Name:** NEWCASTLE JOCKEY CLUB  
**Project ID:** NEW20P-0194

**Order No.:**  
**Report #:** 795526  
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**Received:** May 14, 2021 12:00 PM  
**Due:** May 21, 2021  
**Priority:** 5 Day  
**Contact Name:** Emma Coleman

**Eurofins Analytical Services Manager : Andrew Black**

Sample Detail						Asbestos - AS4964	Asbestos - WA guidelines	CANCELLED	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271													X			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
74	BH26 0.4-0.5	May 12, 2021		Soil	N21-My30313				X							
75	BH26 0.5-0.6	May 12, 2021		Soil	N21-My30314				X							
76	BH27 0.3-0.4	May 12, 2021		Soil	N21-My30315				X							
77	BH27 0.6-0.7	May 12, 2021		Soil	N21-My30316			X								
78	SS1 0.0-0.2	May 13, 2021		Soil	N21-My30317				X							
79	SS3 0.0-0.2	May 13, 2021		Soil	N21-My30318				X							
80	SS5 0.0-0.2	May 13, 2021		Soil	N21-My30319				X							
81	SS8 0.0-0.2	May 12, 2021		Soil	N21-My30320				X							
Test Counts						1	15	3	37	1	5	25	1	15	9	1

## Internal Quality Control Review and Glossary

### General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

**\*\*NOTE:** pH duplicates are reported as a range NOT as RPD

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

**MPN/100mL:** Most Probable Number of organisms per 100 millilitres

### Terms

<b>Dry</b>	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
<b>LOR</b>	Limit of Reporting.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>CRM</b>	Certified Reference Material - reported as percent recovery.
<b>Method Blank</b>	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
<b>Surr - Surrogate</b>	The addition of a like compound to the analyte target and reported as percentage recovery.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>USEPA</b>	United States Environmental Protection Agency
<b>APHA</b>	American Public Health Association
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>QSM</b>	US Department of Defense Quality Systems Manual Version 5.3
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>NC</b>	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
<b>TEQ</b>	Toxic Equivalency Quotient

### QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

### QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

**Quality Control Results**

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
<b>Method Blank</b>							
<b>BTEX</b>							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
<b>Method Blank</b>							
<b>Polycyclic Aromatic Hydrocarbons</b>							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
<b>Method Blank</b>							
<b>Heavy Metals</b>							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
<b>Method Blank</b>							



Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
<b>Method Blank</b>							
<b>Organochlorine Pesticides</b>							
Chlordane - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 0.1			0.1	Pass	
<b>LCS - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>							
TRH C6-C9	%	91			70-130	Pass	
TRH C10-C14	%	89			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>BTEX</b>							
Benzene	%	93			70-130	Pass	
Toluene	%	96			70-130	Pass	
Ethylbenzene	%	96			70-130	Pass	
m&p-Xylenes	%	96			70-130	Pass	
o-Xylene	%	95			70-130	Pass	
Xylenes - Total*	%	96			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
Naphthalene	%	92			70-130	Pass	
TRH C6-C10	%	91			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Polycyclic Aromatic Hydrocarbons</b>							
Acenaphthene	%	107			70-130	Pass	
Acenaphthylene	%	106			70-130	Pass	
Anthracene	%	102			70-130	Pass	
Benz(a)anthracene	%	101			70-130	Pass	
Benzo(a)pyrene	%	108			70-130	Pass	
Benzo(b&j)fluoranthene	%	98			70-130	Pass	
Benzo(g,h,i)perylene	%	102			70-130	Pass	
Benzo(k)fluoranthene	%	111			70-130	Pass	
Chrysene	%	120			70-130	Pass	
Dibenz(a,h)anthracene	%	95			70-130	Pass	
Fluoranthene	%	118			70-130	Pass	
Fluorene	%	108			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Indeno(1.2.3-cd)pyrene			%	91			70-130	Pass	
Naphthalene			%	118			70-130	Pass	
Phenanthrene			%	109			70-130	Pass	
Pyrene			%	121			70-130	Pass	
LCS - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions									
TRH >C10-C16		%	86				70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic		%	101				80-120	Pass	
Cadmium		%	102				80-120	Pass	
Chromium		%	104				80-120	Pass	
Copper		%	101				80-120	Pass	
Lead		%	105				80-120	Pass	
Mercury		%	109				80-120	Pass	
Nickel		%	104				80-120	Pass	
Zinc		%	99				80-120	Pass	
LCS - % Recovery									
Conductivity (1:5 aqueous extract at 25°C as rec.)		%	85				70-130	Pass	
LCS - % Recovery									
Organochlorine Pesticides									
Chlordanes - Total		%	94				70-130	Pass	
4.4'-DDD		%	79				70-130	Pass	
4.4'-DDE		%	93				70-130	Pass	
4.4'-DDT		%	117				70-130	Pass	
a-BHC		%	86				70-130	Pass	
Aldrin		%	94				70-130	Pass	
b-BHC		%	87				70-130	Pass	
d-BHC		%	86				70-130	Pass	
Dieldrin		%	83				70-130	Pass	
Endosulfan I		%	87				70-130	Pass	
Endosulfan II		%	88				70-130	Pass	
Endosulfan sulphate		%	77				70-130	Pass	
Endrin		%	71				70-130	Pass	
Endrin aldehyde		%	76				70-130	Pass	
Endrin ketone		%	80				70-130	Pass	
g-BHC (Lindane)		%	94				70-130	Pass	
Heptachlor		%	79				70-130	Pass	
Heptachlor epoxide		%	92				70-130	Pass	
Hexachlorobenzene		%	93				70-130	Pass	
Methoxychlor		%	112				70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9		N21-My30203	CP	%	78			70-130	Pass
Spike - % Recovery									
BTEX				Result 1					
Benzene		N21-My30203	CP	%	81			70-130	Pass
Toluene		N21-My30203	CP	%	84			70-130	Pass
Ethylbenzene		N21-My30203	CP	%	82			70-130	Pass
m&p-Xylenes		N21-My30203	CP	%	84			70-130	Pass
o-Xylene		N21-My30203	CP	%	82			70-130	Pass
Xylenes - Total*		N21-My30203	CP	%	84			70-130	Pass
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1				
Naphthalene	N21-My30203	CP	%	86		70-130	Pass	
TRH C6-C10	N21-My30203	CP	%	77		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Heavy Metals</b>				Result 1				
Zinc	S21-My32393	NCP	%	88		75-125	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1				
TRH C10-C14	N21-My30205	CP	%	89		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1				
Acenaphthene	S21-My21715	NCP	%	96		70-130	Pass	
Acenaphthylene	S21-My21715	NCP	%	88		70-130	Pass	
Anthracene	S21-My21715	NCP	%	76		70-130	Pass	
Benz(a)anthracene	S21-My21715	NCP	%	74		70-130	Pass	
Benzo(a)pyrene	S21-My21715	NCP	%	76		70-130	Pass	
Benzo(b&j)fluoranthene	S21-My21715	NCP	%	81		70-130	Pass	
Benzo(g,h,i)perylene	S21-My21715	NCP	%	74		70-130	Pass	
Benzo(k)fluoranthene	S21-My21715	NCP	%	80		70-130	Pass	
Chrysene	S21-My21715	NCP	%	80		70-130	Pass	
Dibenz(a,h)anthracene	S21-My21715	NCP	%	71		70-130	Pass	
Fluoranthene	S21-My21715	NCP	%	99		70-130	Pass	
Fluorene	S21-My21715	NCP	%	86		70-130	Pass	
Indeno(1,2,3-cd)pyrene	S21-My21715	NCP	%	77		70-130	Pass	
Naphthalene	S21-My21715	NCP	%	103		70-130	Pass	
Phenanthrene	S21-My21715	NCP	%	80		70-130	Pass	
Pyrene	S21-My21715	NCP	%	96		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1				
TRH >C10-C16	N21-My30205	CP	%	90		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Organochlorine Pesticides</b>				Result 1				
Chlordanes - Total	S21-My26790	NCP	%	114		70-130	Pass	
4,4'-DDD	S21-My26790	NCP	%	79		70-130	Pass	
4,4'-DDE	S21-My26790	NCP	%	109		70-130	Pass	
a-BHC	S21-My26790	NCP	%	92		70-130	Pass	
Aldrin	S21-My26790	NCP	%	115		70-130	Pass	
b-BHC	S21-My26790	NCP	%	77		70-130	Pass	
d-BHC	S21-My26790	NCP	%	81		70-130	Pass	
Dieldrin	S21-My26790	NCP	%	105		70-130	Pass	
Endosulfan I	S21-My26790	NCP	%	100		70-130	Pass	
Endosulfan II	S21-My26790	NCP	%	97		70-130	Pass	
Endosulfan sulphate	S21-My26790	NCP	%	95		70-130	Pass	
Endrin	S21-My26790	NCP	%	78		70-130	Pass	
Endrin aldehyde	S21-My26790	NCP	%	87		70-130	Pass	
Endrin ketone	S21-My26790	NCP	%	91		70-130	Pass	
g-BHC (Lindane)	S21-My26790	NCP	%	110		70-130	Pass	
Heptachlor	S21-My26790	NCP	%	78		70-130	Pass	
Heptachlor epoxide	S21-My26790	NCP	%	106		70-130	Pass	
Hexachlorobenzene	S21-My26790	NCP	%	108		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Heavy Metals</b>				Result 1				
Arsenic	N21-My30233	CP	%	113		75-125	Pass	
Cadmium	N21-My30233	CP	%	117		75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium	N21-My30233	CP	%	111			75-125	Pass	
Copper	N21-My30233	CP	%	103			75-125	Pass	
Lead	N21-My30233	CP	%	111			75-125	Pass	
Mercury	N21-My30233	CP	%	114			75-125	Pass	
Nickel	N21-My30233	CP	%	107			75-125	Pass	
<b>Spike - % Recovery</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1					
TRH C6-C9	N21-My30239	CP	%	84			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>BTEX</b>				Result 1					
Benzene	N21-My30239	CP	%	74			70-130	Pass	
Toluene	N21-My30239	CP	%	85			70-130	Pass	
Ethylbenzene	N21-My30239	CP	%	90			70-130	Pass	
m&p-Xylenes	N21-My30239	CP	%	87			70-130	Pass	
o-Xylene	N21-My30239	CP	%	83			70-130	Pass	
Xylenes - Total*	N21-My30239	CP	%	86			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1					
Naphthalene	N21-My30239	CP	%	74			70-130	Pass	
TRH C6-C10	N21-My30239	CP	%	84			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH C6-C9	N21-My30203	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	N21-My30203	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	N21-My30203	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	N21-My30203	CP	mg/kg	< 50	< 50	<1	30%	Pass	
<b>Duplicate</b>									
<b>BTEX</b>				Result 1	Result 2	RPD			
Benzene	N21-My30203	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	N21-My30203	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	N21-My30203	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	N21-My30203	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	N21-My30203	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	N21-My30203	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD			
Naphthalene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	N21-My30203	CP	mg/kg	< 20	< 20	<1	30%	Pass	
<b>Duplicate</b>									
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD			
Acenaphthene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Naphthalene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	N21-My30203	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	N21-My30203	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	N21-My30203	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	N21-My30203	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S21-My26793	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S21-My26793	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S21-My26793	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	N21-My30217	CP	%	31	31	1.0	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	N21-My30221	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C10-C14	N21-My30221	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	N21-My30221	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	N21-My30221	CP	mg/kg	< 50	< 50	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	N21-My30221	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	N21-My30221	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	N21-My30221	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	N21-My30221	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	N21-My30221	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total*	N21-My30221	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	N21-My30221	CP	mg/kg	< 20	< 20	<1	30%	Pass

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	N21-My30221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	N21-My30221	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	N21-My30221	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	N21-My30221	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Conductivity (1:5 aqueous extract at 25°C as rec.)	S21-My38547	NCP	uS/cm	32	31	2.2	30%	Pass
pH (1:5 Aqueous extract at 25°C as rec.)	N21-My30222	CP	pH Units	5.9	6.0	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	N21-My30230	CP	mg/kg	9.6	9.4	2.0	30%	Pass
Cadmium	N21-My30230	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	N21-My30230	CP	mg/kg	15	14	1.0	30%	Pass
Copper	N21-My30230	CP	mg/kg	20	18	11	30%	Pass
Lead	N21-My30230	CP	mg/kg	9.2	7.9	16	30%	Pass
Mercury	N21-My30230	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	N21-My30230	CP	mg/kg	16	16	1.0	30%	Pass
Zinc	N21-My30230	CP	mg/kg	68	50	30	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	N21-My30234	CP	%	14	16	14	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	N21-My30237	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	N21-My30237	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	N21-My30237	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	N21-My30237	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	N21-My30237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	N21-My30237	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total*	N21-My30237	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	N21-My30237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	N21-My30237	CP	mg/kg	< 20	< 20	<1	30%	Pass



<b>Duplicate</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD		
TRH C6-C9	N21-My30239	CP	mg/kg	< 20	< 20	<1	30%	Pass
<b>Duplicate</b>								
<b>BTEX</b>				Result 1	Result 2	RPD		
Benzene	N21-My30239	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	N21-My30239	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	N21-My30239	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	N21-My30239	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	N21-My30239	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total*	N21-My30239	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
<b>Duplicate</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD		
Naphthalene	N21-My30239	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	N21-My30239	CP	mg/kg	< 20	< 20	<1	30%	Pass

## Comments

### Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

### Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

### Authorised by:

Andrew Black	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Charl Du Preez	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)



**Glenn Jackson**  
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

\* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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## CERTIFICATE OF ANALYSIS

**Work Order** : **ES2118733**  
**Client** : **QUALTEST LABORATORY( NSW) PTY LTD**  
**Contact** : **EMMA COLEMAN**  
**Address** : **8 IRONBARK CLOSE WARABROOK**  
**NEW SOUTH WALES 4053**  
**Telephone** : **02 4968 4468**  
**Project** : **NEW20P-0194 Newcastle Jockey Club**  
**Order number** : **----**  
**C-O-C number** : **----**  
**Sampler** : **BILLY SNOW**  
**Site** : **----**  
**Quote number** : **EN/333**  
**No. of samples received** : **2**  
**No. of samples analysed** : **1**

**Page** : 1 of 6  
**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** : 19-May-2021 15:00  
**Date Analysis Commenced** : 21-May-2021  
**Issue Date** : 26-May-2021 17:28



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
- 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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Inorganics, Smithfield, NSW
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, 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 Contact 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), Dibenzo(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.
- 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.



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		T.12.5.21	----	----	----	----
		Sampling date / time		12-May-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2118733-001	-----	-----	-----	-----
				Result	----	----	----	----
<b>EA055: Moisture Content (Dried @ 105-110°C)</b>								
Moisture Content	----	1.0	%	15.5	----	----	----	----
<b>EG005(ED093)T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	5	----	----	----	----
Copper	7440-50-8	5	mg/kg	23	----	----	----	----
Lead	7439-92-1	5	mg/kg	126	----	----	----	----
Nickel	7440-02-0	2	mg/kg	6	----	----	----	----
Zinc	7440-66-6	5	mg/kg	128	----	----	----	----
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	1.6	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	4.9	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	5.2	----	----	----	----
Benzo(a)anthracene	56-55-3	0.5	mg/kg	1.8	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	1.9	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	2.6	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	2.1	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	1.2	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	1.6	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	23.9	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	2.8	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	3.0	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	3.3	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	T.12.5.21	----	----	----	----
Sampling date / time					12-May-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2118733-001	-----	-----	-----	-----
Result					----	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		140	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		240	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		220	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		220	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		84.5	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		85.1	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%		81.6	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		101	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		108	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		105	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		95.8	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		94.3	----	----	----	----





Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	T.12.5.21	----	----	----	----
				Sampling date / time	12-May-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2118733-001	-----	-----	-----	-----
				Result	----	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		99.1	----	----	----	----



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2118733	Page	: 1 of 4
Client	: QUALTEST LABORATORY( NSW) PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: EMMA COLEMAN	Telephone	: +61-2-8784 8555
Project	: NEW20P-0194 Newcastle Jockey Club	Date Samples Received	: 19-May-2021
Site	: ----	Issue Date	: 26-May-2021
Sampler	: BILLY SNOW	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

#### Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



## Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) T.12.5.21	12-May-2021	----	----	----	25-May-2021	26-May-2021	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) T.12.5.21	12-May-2021	25-May-2021	08-Nov-2021	✓	25-May-2021	08-Nov-2021	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) T.12.5.21	12-May-2021	25-May-2021	09-Jun-2021	✓	26-May-2021	09-Jun-2021	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) T.12.5.21	12-May-2021	21-May-2021	26-May-2021	✓	24-May-2021	30-Jun-2021	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) T.12.5.21	12-May-2021	21-May-2021	26-May-2021	✓	24-May-2021	26-May-2021	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) T.12.5.21	12-May-2021	21-May-2021	26-May-2021	✓	24-May-2021	26-May-2021	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) T.12.5.21	12-May-2021	21-May-2021	26-May-2021	✓	24-May-2021	26-May-2021	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> ) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na <sub>2</sub> SO <sub>4</sub> and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.