Doyalson Wyee RSL Club Limited
Care of
Urbis Pty Ltd

Asbestos in Soils Assessment

49-65 Wentworth Avenue and
80, 90, 100 and 110 Pacific Highway
Doyalson NSW

1 November 2019

57611/125538

JBS&G

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Executive Summary

JBS&G Australia Pty Ltd (JBS&G) was engaged by Doyalson Wyee RSL Club Limited (DWRC, the client) via Urbis Pty ltd (Urbis) to undertake an assessment of potential asbestos in soil contamination associated with a portion of the property located at 49-68 Wentworth Avenue and 80, 90, 100 and 110 Pacific Highway, Doyalson, NSW (the site). The site location and layout are shown on **Figure 1** and **Figure 2** respectively. The site's legal identification is provided in **Table 2.1**. The area subject to assessment within this data gap investigation (DGI) is marked on **Figure 4** 'Management Area'.

The management area is currently used for recreational (sports fields and endurance course) and associated commercial/industrial maintenance land uses. Historically the site has been used for potentially contaminating land uses comprising light agricultural/horticultural, forestry and importation of fill materials.

JBS&G conducted a detailed site investigation (DSI, JBS&G 2019[1]), at the site to characterise potential contamination such that conclusions regarding its suitability for the proposed development could be made. The investigation identified the presence of asbestos containing material (ACM) within soils, previous investigations, as summarised in **Section 3**, have the potential to pose human health risks to current site users.

To evaluate potential human health risks posed by the presence of ACM in soils, the client required a detailed asbestos assessment be undertaken. JBS&G has conducted an asbestos in soils assessment, as documented herein, in general accordance with the methodology outlined in NEPC (2013[2]), including a multiple lines of evidence approach for determination of potential risks to site users under the current occupational scenario.

Based on the scope of investigation works completed, and subject to the limitations presented in **Section 10**, the following conclusions are provided:

- The management area has been subjected to detailed assessment by inspection of site surfaces, intrusive soil investigations and activity-based asbestos in air monitoring to provide multiple lines of evidence for consideration in determination of potential risks to current site users under a non-intrusive (recreational and general site maintenance) site usage scenario;
- No unacceptable risks to site users who occupy the site for general recreational and/or surficial maintenance purposes (i.e. non-intrusive usage) have been identified within the management area;
- No unacceptable aesthetic issues or potential for contaminant migration has been identified at the site subject to the maintenance of site surfaces;
- Due to the presence of aesthetic impacts and potentially asbestos impacted soils within the deeper soils, identified within the DSI (JBS&G 2019) ongoing management will be required to ensure that potential risks through exposure to deep soils remain low and acceptable; and

It is recommended that the Environmental Management Plan (EMP) provided concurrently with this assessment is implemented.

[1] *Detailed Site Investigation – 49-68 Wentworth Avenue and 80, 90, 100 and 110 Pacific Highway, Doyalson, NSW*. JBS&G Australia Pty Ltd reference 56387/123975 (Rev B) dated 6 September 2019. JBS&G (2019).

[2] *National Environment Protection (Assessment of Site Contamination) Measure*, 2013, National Environment Protection Council, 2013, NEPC 2013.

1. Introduction and Background

1.1 Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Doyalson Wyee RSL Club Limited (DWRC, the client) via Urbis Pty ltd (Urbis) to undertake an assessment of potential asbestos in soil contamination associated with the property located at 49-68 Wentworth Avenue and 80, 90, 100 and 110 Pacific Highway, Doyalson, NSW (the site). The site location and layout are shown on **Figure 1** and **Figure 2** respectively. The site's legal identification is provided in **Table 2.1**.

The site is currently used for commercial (RSL Club and amenities) and recreational (sports fields and endurance course) land uses. Historically the site has been used for potentially contaminating land uses comprising light agricultural/horticultural and forestry.

JBS&G conducted a detailed site investigation (DSI, JBS&G 2019[3]), at the site to characterise potential contamination such that conclusions regarding its suitability for the proposed development could be made. The investigation identified the presence of asbestos containing material (ACM) within soils, previous investigations, as summarised in **Section 3**, have the potential to pose human health risks to current site users.

To evaluate potential human health risks posed by the presence of ACM in soils, the client required a detailed asbestos assessment be undertaken. JBS&G has conducted an asbestos in soils assessment, as documented herein, in general accordance with the methodology outlined in NEPC (2013[4]), including a multiple lines of evidence approach for determination of potential risks to site users under the current occupational scenario.

1.2 Objectives

The objectives of the assessment were to determine whether the levels of asbestos within the management area on the site pose a potential human health risk to site occupants under the ongoing recreational/open space and commercial/industrial occupation and to further determine whether the levels pose a potential human health risk to potentially sensitive receptors in proximity of the site.

1.3 Scope of Works

To achieve the objectives of the investigation, the following scope of works was implemented:

- Previous environmental assessment reports were reviewed including GHD (2018[5]) and JBS&G (2019a[6]);
- A conceptual site model (CSM) was developed as relevant to the assessed site extent, relevant site media, contaminant transport mechanisms, exposure pathways and susceptible receptors;
- Development of a sampling, analytical and quality plan (SAQP) to direct soil assessment activities, including identification of critical environmental data and relevant assessment/management decisions;

[3] *Detailed Site Investigation – 49-68 Wentworth Avenue and 80, 90, 100 and 110 Pacific Highway, Doyalson, NSW*. JBS&G Australia Pty Ltd reference 56387/123975 (Rev B) dated 6 September 2019. JBS&G (2019).

[4] *National Environment Protection (Assessment of Site Contamination) Measure*, 2013, National Environment Protection Council, 2013, NEPC 2013.

[5] *Preliminary Site Investigation – Final Report, Doyalson Wyee RSL Structure Plan*. GHD reference 2127104-92423 dated May 2018, GHD 2018.

[6] *Detailed Site Investigation – 49-68 Wentworth Avenue and 80, 90, 100 and 110 Pacific Highway, Doyalson, NSW*. JBS&G Australia Pty Ltd reference 56387/123975 (Rev B) dated 6 September 2019. JBS&G (2019).

- Detailed inspection of surfaces across the relevant site area by Competent Persons[7];
- A program of soil inspection, screening, sampling and laboratory analysis was implemented by advancement of forty-five boreholes across the site area;
- Monitoring for asbestos fibres in air at multiple locations proximal to the area of soil sampling during soil disturbance activities in accordance with *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres* [NOHSC: 3003(2005)].
- Confirmation that the field and laboratory assessment program was of sufficient quality to be relied upon to facilitate making of decisions documented in the SAQP;
- Comparison of field and soil analytical results with published guidance criteria (i.e. NEPC (2013) and WHS (2017[8])) and evaluation of data in the context of the decision questions developed in the SAQP; and
- Documentation of the process within this asbestos assessment DGI.

[7] As defined within SWA (2016) and detailed further in **Section 5.2**
[8] *Work Health and Safety Regulations 2017*

2. Site Condition

2.1 Site Location and Description

The location of the site is shown in **Figure 1**. The location of the area subjected to detailed asbestos assessment is shown contextually within **Figure 2.** Site details are summarised in **Table 2.1**. The area of the site subjected to detailed asbestos assessment has additionally been identified in **Figure 2** as the 'Extent of IEMP and Management Area'

Table 2.1: Summary of Site Details

Site Legal Identifier (as shown on Figure 2 and 3)	Lots 1 to 9 DP 215875, Lot 1 DP 503655, Lot 11 DP 2400685, Lot 49 DP 707586 and Lot 7 DP 240685
Site Address	Lots 1 to 9 DP 215875 – 49-65 Wentworth Avenue, Doyalson, NSW, 2262 Lot 1 DP 503655 – 80 Pacific Highway, Doyalson, NSW, 2262 Lot 11 DP 2400685 – 90 Pacific Highway, Doyalson, NSW, 2262 Lot 49 DP 707586 – 100 Pacific Highway, Doyalson, NSW, 2262 Lot 7 DP 240685 – 110 Pacific Highway, Doyalson, NSW, 2262
Site Area	34.78 ha
Local Government Authority	Central Coast Council (Council)
County/Parish	Munmorah
Site Geographic Coordinates (Map Grid of Australia (MGA) 56)	Refer to **Figure 2**
Registered Site Owner	Doyalson Wyee RSL Club Ltd
Current Zoning (Wyong Local Environmental Plan (LEP) 2013)	RE2 (Private Recreation) Lots 1 to 9 DP 215875, Lot 1 DP 503655 and Lot 11 DP 2400685 RU6 (Transition) Lot 49 DP 707586 and Lot 7 DP 240685
Previous Land Uses	Agriculture/horticulture, forestry, sports facilities
Current Land Uses	Commercial (RSL club and amenities) and Recreational (sports fields and endurance course)
Proposed Land Uses	Mixed-use Precinct (residential allotments, retail/commercial incl. childcare centre and recreational/open space)

2.2 Site Condition

The site condition as relevant to the asbestos assessment is summarised following. A detailed site inspection was conducted on 22 October 2019 by Ryan Lill and Michael Swinfield, two of JBS&G's trained and experienced environmental consultants.

The management area is an irregularly shaped parcel of land occupying approximately 3.5 hectares (ha). The management area comprised an active sports and recreational field comprising tiered and levelled playing surfaces and surrounding areas. The management area was observed to be raised from the surrounding site, consistent with the historical identification of site filling within the area.

The management area was predominantly covered be well established landscaped grass surfaces with minimal (<5 %) exposed soils observed. The area was generally absent larger flora with minimal exceptions noted to comprise small trees and shrubbery on the approximate area boundaries. Exposed soils comprised a mixture of sandy clays and silty sands, consistent with the shallow soil profile reported in **Section 7.1**.

The southwest portion of the area was occupied by evaporation trenches associated with sports field operations. Portions of the southwestern site area were noted to be sodden.

A change room building was present on the western corner of the sports fields, which is partially established within the management area.

2.3 Surrounding Land Use

The management area is situated within the broader site with adjacent land uses summarised below.

- North – the broader property, comprising a heavily vegetated area followed by another recreational facility;
- East – heavily vegetated bushland followed by decommissioned coal conveyor system, beyond this is bushland and Colongra Lake;
- South – Wentworth Avenue and residential houses, beyond which are rural residential properties. A Metro Petroleum service station and Doyalson Fire Station are located southwest on Pacific Highway; and
- West – Doyalson Wyee RSL exists west of the site in addition to further recreational (sports fields) facilities.

2.4 Topography

Review of topographic information obtained from the Spatial Information Exchange Viewer (LPI 2019[9]) indicated that the elevation of the site ranges from approximately 20 m Australian Height Datum (AHD) in the south western portion to approximately 10 m AHD at the eastern boundary. The landscape is described as gently undulating rises with slope gradients <10 %.

Regionally, the topography slopes to the north and east, with the Pacific Highway to the immediate west of the site following a ridge between Mannering and Colongra lakes.

2.5 Geology and Soils

Reference to the 1:100 000 Gosford - Lake Macquarie geological map (Och *et al.*, 2015[10]), indicates that the site is predominantly underlain by the Munmorah Conglomerate which forms one of the lower stratigraphic units of the Narrabeen Group. The Munmorah Conglomerate is characterised by the presence of conglomerate, pebbly sandstones and grey-green shales. Quaternary alluvial deposits associated with the present lake system are found to the north east of the site consisting of sands, silts and gravels. The site lies within a mining subsidence district indicating potential for the land to sink due to historical extraction of coal.

Reference to the eSPADE NSW Soil and Land Information database (OEH 2019[11]) indicates that the site is situated predominantly on the Doyalson (do) soil landscape which consists of a dominant brown loose loamy sand with a coarse-grained texture. The soil profile consists of four main horizons with various properties as described in **Table 2.2**. The soil generally has high permeability but is susceptible to seasonal localised waterlogging.

Table 2.2: Soil Type Summary

Soil Horizon	Typical depth (m)	Soil Description Summary
Do1	0-0.1	Brown loose loamy sand, coarse grained, loose or gravelly, often water repellent
Do2	0.1-0.3	Yellowish brown clayey sand, hard-setting when dry, acidic (pH 4.5-5.5)
Do3	0.3-0.6	Bright yellow brown sandy clay loam, often orange mottled, porous, conglomerate and sandstone pebbles
Do4	0.6-1.1	Light grey sandy clay, can be acidic (pH 4.5-6.0)

2.6 Hydrology

The topography of the site suggests surface water could enter the site from the south/south west, however, the south western portion of site consists of an engineered carpark and surface water would likely be channelled into stormwater infrastructure and eventually toward Colongra Lake.

[9] *'Spatial Information Exchange Viewer'*, NSW Land and Property Information, Accessed 20 August 2019, https://maps.six.nsw.gov.au/

[10] Och et al. 2015, Gosford-Lake Macquarie 1:100 000 Geological Sheets 9131 & 9231, Geological Survey of New South Wales, Sydney

[11] *'eSPADE NSW Soil and Land Information'*, NSW Office of Environment and Heritage, Accessed 20 August 2019, http://www.environment.nsw.gov.au/eSpade2Webapp

The site makes up part of the Colongra Lake catchment and is predominantly covered in grass and vegetation (trees and scrub). It is anticipated that water infiltration into the subsurface would be low to moderate when precipitation is light. Heavy or prolonged precipitation would quickly waterlog the soils at rates reflective of the Doyalson (do) soil landscape, and then runoff into drainage channels.

Manning Lake (0.15 km north west) is unlikely to be directly impacted by water exiting the site as drainage channels are present along Pacific Highway which would capture the majority of surface flow from site.

During the site inspection, two dams and several waterbodies associated with the endurance course were identified as shown in **Figure 4.**

2.7 Hydrogeology

Licensed groundwater bore information was obtained from the NSW Department of Primary Industries groundwater mapping portal (BOM 2019[12]). A review of the licensed bore information indicated that there are three groundwater wells within 1.5 km of the site. The details of these bores are noted in **Table 2.3**.

Table 2.3: Summary of Registered Groundwater Bores

Bore ID	Use	Standing water level (mbgs)	Well Depth	Elevation (m AHD)	Distance from site	Coordinates
GW027930	Water supply	Unknown	29.9m	Unknown	0.55km South-west of site	E: 362389.00 N: 6325714.00
GW027933	Water supply	Unknown	Unknown	Unknown	0.55km South-west of site	E: 362415.00 N: 6325653.00
GW027929	Water supply	Unknown	29.3m	32.21	0.60km South-west of site	E: 362390.00 N: 6325653.00

Groundwater within the site is expected to generally flow east toward Colongra Lake. With the site situated mid-gradient between Mannering and Colongra Lakes, groundwater may migrate south-east from Mannering Lake through the northern portion of the site. Groundwater may also enter the site from the south west consistent with the site topography.

2.8 Acid Sulfate Soils

Acid sulfate soils (ASS) are generally associated with low-lying coastal areas, including estuarine flood plains, rivers and creeks. A review of the eSPADE NSW acid sulphate risk mapping (OEH 2019[13]) identified the far south eastern boundary of the site is considered to have a low probability of ASS at >3m depth.

2.9 Meteorology

A review of average climatic data for the nearest Bureau of Meteorology monitoring locations for rainfall (Gorokan) and temperature (Norah Head) (BOM, 2019 [14]) indicates the site is located within the following meteorological setting:

- Mean maximum temperature ranges from 17.5°C in July to 26.2°C in January, while mean minimum temperature ranges from 9.7°C in July to 20.0°C in February; and

[12] Australian Bureau of Meteorology, 2019, Australian Groundwater explorer, http://www.bom.gov.au/water/groundwater/explorer/map.shtml. Accessed 06 August 2019

[13] *'eSPADE NSW Soil and Land Information'*, NSW Office of Environment and Heritage - accessed 20 August 2019, https://www.environment.nsw.gov.au/eSpade2Webapp#

[14] Commonwealth of Australia, 2019 Bureau of Meteorology, http://www.bom.gov.au/climate/data/ Product IDCJCM0028 prepared on 16 August 2019 - accessed by JBS&G on 20 August 2019

- The average annual rainfall is approximately 1217 mm. On average, July received the least amount of rain with a mean rainfall of 67.5 mm, while June receives the most rain, with a mean of 139.9 mm.

3. Existing Environmental Assessments

Contamination investigations have previously been conducted in relation to the broader site and include:

- *Urbis Pty Ltd Doyalson Wyee RSL Structure Plan Preliminary Site Investigation Final Report*. GHD Pty Ltd dated May 2018, GHD (2018); and
- *Detailed Site Investigation – 49-68 Wentworth Avenue and 80, 90, 100 and 110 Pacific Highway, Doyalson, NSW*. JBS&G Australia Pty Ltd reference 56387/123975 (Rev B) dated 6 September 2019. JBS&G (2019).

3.1 Structure Plan Preliminary Site Investigation Final Report (GHD 2018)

GHD Pty Ltd (GHD) completed a preliminary site investigation (PSI) which comprised a desktop review and site inspection to evaluate the potential for contamination to exist in distinct areas of environmental concern (AECs) at the site. GHD identified potentially contaminating site infrastructure and historical activities including:

- Storage of chemicals absent engineering controls in several areas of the site;
- Importation of fill used for site grading activities;
- Potential former industrial use of 110 Pacific Highway;
- Uncontrolled dumping and storage of waste materials at several areas over the site;
- Leaking irrigation systems;
- Incineration and associated coal bunker and ash/coke stockpiles.

In addition, GHD (2018) identified that the site was in proximity of a per- and poly-fluoroalkyl substance (PFAS) investigation area associated with the Munmorah and Colongra Power Stations.

GHD (2018) reported that current and future use of the site by recreational users, maintenance workers and residents provided potentially complete exposure pathways between the identified AECs and site receptors.

3.2 Detailed Site Investigation (JBS&G 2019)

JBS&G completed a DSI at the site which incorporated development of a CSM and SAQP based on desktop review of available site environmental and site history information, including GHD (2018). An intrusive investigation program was undertaken including:

- Advancement of systematic and targeted soil bores / test pits across accessible areas of the site at 165 locations;
- Field screening, sampling and subsequent laboratory analysis of soils and sediments for COPCs including heavy metals, polycyclic aromatic hydrocarbons (PAHs), total recoverable hydrocarbons (TRHs), benzene, toluene, ethylbenzene and xylene (BTEX compounds), volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), organochlorine pesticides (OCPs), PFAS and asbestos; and
- Installation of eight monitoring wells targeting AECs, groundwater and surface water monitoring/sampling activities and subsequent analysis for COPCS (heavy metals, TRHs, BTEX, VOCs, PAHs and PFAS) and general environmental characteristics (pH, electrical conductivity, alkalinity, ammonia and nitrate).

Environmental data produced by the investigation have been reviewed and are considered to be of appropriate quality to be relied upon for the asbestos assessment presented herein, as further discussed in **Section 6.2**. Environmental data as relevant to the site asbestos assessment is provided

in **Table B** and **Table C** and sample locations are shown on **Figure 4**. Assessment findings are presented following:

- The soil sampling program did not identify gross and/or widespread contamination at the site. Concentrations of COPCs analysed within soils and sediments were less than the adopted screening values with the exception of:
    - Non-friable asbestos fragments at sample locations TP35, TP35, TP36, and BH153, this material was considered to represent an aesthetic issue and a potential human health issue;
    - Isolated anthropogenic materials in fill at sample locations TP08, TP10, TP23, TP24, TP35, TP36, TP144 and TP146 and was confined to a limited area within the eastern and southern portions of the sports field. This material was considered to represent an aesthetic issue;
    - It is noted that, while asbestos was identified in isolated samples, observations of inert waste and other building-material related inclusions were noted, indicating the potential for more widespread asbestos impact within this discrete fill profile. The impacted fill material was reported to be confined to a dry to wet dark grey, orange and brown sandy gravelly clay / sandy clay material and associated with the importation of fill to extend the sports fields between 1994 and 2005; and
    - Carcinogenic PAHs were reported at a concentration that exceeded sensitive land use criteria in shallow fill underlying asphalt pavement of a car park at location BH001. This occurrence was inferred to be associated with the asphalt pavement which is to be removed as part of pavement demolition during future redevelopment works. It does not represent an unacceptable risk to current or future site users.
- The groundwater assessment program did not identify exceedances of health-based assessment criteria with the exception of copper and lead at MW07, and PFAS at MW01 and MW04. The reported concentrations only marginally exceeded adopted screening criteria and were inferred to be the result of regional background contamination;
- Surface water assessment identified elevated concentrations of heavy metals and non-metallic inorganics (ammonia) at various locations across the site. The exceedances were reported to require management during future development; and
- Based on the findings of the investigation, it was considered that the site could be made suitable for the proposed land use subject to remediation and/or management of non-friable (bonded) asbestos and aesthetic impacts in soils.

3.3 Use of Existing Environmental Data

The asbestos in soils data set obtained within JBS&G (2019) has been considered within this assessment.

The DSI does not present quantified estimates of the concentration of asbestos in soils based on observations made during field-based soil screening/sampling within the management area. As such, the incorporation of asbestos data from JBS&G (2019) is limited to estimates based on laboratory data for AF/FA as determined by Australian Standard (AS) 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples.

4. Conceptual Site Model

NEPC (2013) identifies a CSM as a representation of site related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The development of a CSM is an essential part of all site assessments.

- Known and potential sources of contamination and contaminants of concern including the mechanism(s) of contamination;
- Potentially affected media (soil, sediment, groundwater, surface water, indoor and ambient air);
- Human and ecological receptors;
- Potential and complete exposure pathways; and
- Any potential preferential pathways for vapour migration (if potential for vapours identified).

Based on the extent of site contamination characterisation activities undertaken, and the absence of identified potential human health risks pertaining to non-asbestos contamination, the CSM has been defined following as restricted to the potential health risks associated with the asbestos impact to soils in the management area of asbestos impact.

4.1 Known and Potential Sources of Contamination

Asbestos containing material has been identified occurring as fibre cement sheeting within deep (>0.3 m bgs) soils in the management area. The ACM cooccurs with anthropogenic materials, specifically building and demolition wastes. This indicates that, historically, asbestos impacted material has been imported to the site and used as fill material, or has otherwise been sourced from historical demolition activities as undertaken on the site. ACM was not positively confirmed at all soil historical sampling intervals (JBS&G 2019), though was detected at sufficient sample locations to consider that it is not restricted to hotspots of material and is likely present throughout the deeper fill material profile. Laboratory analysis has indicated that asbestos fines and friable asbestos (AF/FA) are not also present in soils as affected by the ACM.

Previous environmental data derived from intrusive investigation of shallow soils within the management area has not identified ACM or AF/FA within the shallow soil profile.

No ACM has been identified on site surfaces.

4.2 Potential and Complete Exposure Pathways

Future human receptors on the site can be characterised as consisting of:

- Recreational users of the management area (non-intrusive users);
- Landscapers / gardening personnel as present on the site to maintain areas of site landscaping within the management area (intrusive and non-intrusive users); and
- Potential future sub-surface maintenance / excavation workers (intrusive users)).

The anticipated exposure of the identified receptors is limited to the top 0.3 m of soils under typical operational usage. Recreational users and general maintenance workers (gardeners, groundsmen, etc.) will not require to access deep (>0.3 m bgl) soils at the site (i.e. non-intrusive usage). As such the exposure medium for these users is limited to shallow soils.

Potential future sub-surface maintenance / excavation workers and landscapers/gardeners who require to access deeper soils (>0.3 m bgl) may be exposed to asbestos contamination within the deeper soil profile (i.e. intrusive usage).

Receptors will be potentially exposed to soil contaminants by oral, dermal and inhalation pathways. Oral and dermal exposures have not been considered any further as asbestos is not toxic by these pathways. Inhalation exposures will potentially occur by the release of fibres from impacted soils into human breathing zones.

Where asbestos fibres are released from soils on the site there is a potential that residential occupants in proximity (south) of the management area may be affected. Potentially complete exposure pathways may occur where airborne respirable asbestos fibres migrate to the extent of these properties. Residential dwellings are located in close proximity along Wentworth Avenue.

4.3 Preferential Pathways

A range of preferential pathways are currently present on the site as associated with near surface fill horizons and potential services present across the site area (i.e. drainage lines, sumps, pits etc.).

These preferential pathways are not considered significant as asbestos occurs as a solid and is not readily transportable within the sub-surface.

4.4 Complete Source-Pathway-Receptor Linkages

Potentially complete source-pathway-receptor linkages are considered to be limited to potential inhalation exposures of fibres of on-site receptors and residential properties in proximity of the site.

4.5 Data Gaps

Based on review of the existing environmental data, the following data gaps have been identified:

- Nature and extent of asbestos contamination within shallow (<0.3 m bgl) soils to which non-intrusive users are exposed; and
- Nature and extent of asbestos contamination within deep (>0.3 m bgl) soils to which only intrusive users are exposed.

This DGI aims to provide environmental data to inform human health risk screening for the ongoing occupation of the management area for non-intrusive site usage. In accordance with NEPC (2013), investigation for the presence of bonded ACM was not completed below the likely maximum depth of disturbance for non-intrusive land uses. The anticipated depth of exposure for typical recreational site users is limited to the shallowest 0.3 m of soils, as present underlying the currently vegetated surfaces.

Detailed characterisation of asbestos impacts below 0.3 m bgs has not been undertaken at sufficient density to quantify the risks posed to site users who may encounter such soils (**Section 4.2**). Review of the limited existing asbestos assessment data exists for the deeper (>0.3 m bgs) soil profile did not identify gross asbestos contamination of soils. Due to the presence of aesthetic impacts within the deeper soils (**Section 3.2**) ongoing management will be required to ensure that potential risks by exposure to materials representing a risk of physical harm (e.g. building and demolition wastes) are mitigated.

On this basis, and in accordance with Section 11.3 of Schedule B2- Guideline on Site Characterisation (NEPC 2013), investigation of deep soils is not required at this stage in site operations. Intrusive site usage within the management area will be managed managed under an Environmental Management Plan (EMP) until such time as future asbestos quantification works demonstrate that the asbestos impacts do not comprise contamination.

5. Sampling, Analytical and Quality Plan

5.1 Data Quality Objectives

Data quality objectives (DQOs) were developed for the investigation, as discussed in the following sections.

5.1.1 State the Problem

Detailed characterisation of asbestos impacts within surficial and shallow (<0.3 m bgs) soils has not been undertaken to assess the potential the risks posed to site users who may encounter such soils (**Section 4.2**). Additional environmental data is required to be obtained from site surfaces and the upper most 0.3 m of soils within the management area to assess the potential human health risks posed by the presence of asbestos.

5.1.2 Identify the Decision

The following decisions have been adapted as appropriate from the decision-making process for assessing urban redevelopment sites detailed in EPA (2017[15]), the following decisions must be made:

1. Are there any potentially unacceptable risks to likely future on site receptors undertaking non-intrusive site activities posed by the presence of asbestos at the site?
2. Are there any aesthetic issues at the site?
3. Is there any evidence of, or potential for, migration of contaminants from the site?

5.1.3 Identify Inputs into the Decision

Inputs identified to make the decisions nominated above include:

- Historical site information;
- Inspection of the assessment area ground surface;
- The collection and interpretation of environmental data through collection and analysis of soil and air samples;
- Laboratory analysis of samples of potentially contaminated media for asbestos impacts; and
- Confirmation that data generated by sample analysis were of sufficient quality to allow reliable comparison to assessment criteria as undertaken by assessment of quality assurance / quality control (QA/QC).

5.1.4 Define the Study Boundaries

The study boundaries (lateral extents) are limited to the site boundaries as described in **Section 2.1**, with additional reference made to potentially sensitive downgradient receptors located within residential properties along Wentworth Avenue.

The vertical extent of the investigation was to a maximum depth of 0.3 m bgs. Previous environmental data has been provided for the broader site which reports soil investigation activities to a depth of 10.1 m bgs, though this has not been relied upon to make the decisions identified in **Section 5.1.2.**

[15] Contaminated Sites: Guidelines for the NSW Site Auditor Scheme, 3rd Edition, NSW EPA, 2017 (EPA 2017)

5.1.5 Develop the Decision Rules

The decision rules adopted to answer the decisions identified in **Sections 5.1.2** are summarised in **Table 5.1**. Analytical data for the assessed media was assessed against NEPC (2013) and WHS (2017) criteria as listed in **Section 5.1.6.**

Table 5.1: Summary of Decision Rules

Decisions Required to be Made	Decision Rule
1. Are there any potentially unacceptable risks to on-site future receptors posed by the presence of asbestos at the site?	Analytical data will be compared against NEPC (2013) and WHS (2017) criteria (**Section 5.1.6**). If asbestos concentrations are identified which exceeded the NEPC (2013) criteria, the answer to the decision was **Yes**. Otherwise the answer to the decision was **No**.
2. Are there any aesthetic issues?	If there were any visible asbestos on the ground surface or surficial (<0.1 m bgs) soils, any unacceptable odours or soil discolouration, or excessive extraneous/foreign/waste materials, the answer to the decision was **Yes**. Otherwise, the answer to the decision was **No**.
3. Is there any evidence of, or potential for, migration of contaminants from the site?	Based on assessment results, is there any evidence of, or the potential for, migration of unacceptable contaminant concentrations from the site? If yes, the answer to the decisions was **Yes**. Otherwise, the answer to the decision was **No**.

5.1.6 Assessment Criteria

For the purpose of evaluating the asbestos contamination status at the site, reported concentrations were compared against the following criteria:

- NEPC (2013) Generic land use criteria for asbestos in soils:
  - Health Screening Level (HSL) C: public recreational open space land use for bonded ACM – 0.02 % w/w;
  - HSL D: commercial/industrial land use, bonded ACM – 0.05 % w/w;
  - Asbestos fines / friable asbestos for all land uses – 0.001 % w/w; and
  - Visible asbestos for all land uses.
- *Work Health and Safety Regulation 2017*: Regulation 419 Work Involving Asbestos or ACM – Prohibitions and Exceptions:
  - 5AI) the presence of any visible ACM as determined by a competent person; and
  - 5AII) if friable asbestos is visible – does not contain more than trace levels of asbestos determined in accordance with AS 5944:2004: 0.01 % w/w.
- *Work Health and Safety Regulation 2017*: Regulation 476 Work Involving Asbestos or ACM – Prohibitions and Exceptions:
  - 1A) Action if respirable fibre level too high: if respirable asbestos fibre levels are recorded at the asbestos removal area at 0.01 fibres/ml or more

5.1.7 Specific Limits on Decision Error

This step is to establish the decision maker's tolerable limits on decision errors, which are used to establish performance goals for limiting uncertainty in the data. Data generated during this project must be appropriate to allow decisions to be made with confidence.

Specific limits for this project have been adopted in accordance with the appropriate guidance from the NEPC (2013), appropriate Data Quality Indicators (DQIs, used to assess quality assurance / quality control) and standard JBS&G procedures for field sampling and handling.

To assess the usability of the data prior to making decisions, the data will be assessed against pre-determined DQIs for to precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS parameters). The acceptable limit on decision error is 95% compliance with DQIs.

The pre-determined DQIs established for the project are discussed below in relation to the PARCCS parameters and are shown in **Table 5.2**.

- **Precision** – measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples.
- **Accuracy** – measures the bias in a measurement system. The accuracy of the laboratory data that are generated during this study is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.
- **Representativeness** – expresses the degree which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.
- **Comparability** – expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; and ensuring analysing laboratories use consistent analysis techniques; and reporting methods.
- **Completeness** – is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.
- **Sensitivity** – expresses the appropriateness of the chosen field and laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted site assessment criteria.

Table 5.2: Data Quality Indicators

Data Quality Indicators	Frequency	Data Quality Criteria
Precision		
Blind duplicates (intra laboratory)	1 / 20 samples/media	Results in agreement [1]
Split Duplicated (Inter laboratory)	1 / 20 samples/media	Results in agreement [1]
Accuracy		
Agreement between field and laboratory analytical data	All samples	Results in agreement [1]
Representativeness		
Sampling appropriate for media and analytes	All samples	-[2]
Comparability		
Standard operating procedures for sample collection & handling	All Samples	All Samples
Standard laboratory analytical methods used for all analyses	All Samples	NATA accreditation
Consistent field conditions, sampling staff and laboratory analysis	All Samples	All samples[2]
Limits of reporting appropriate and consistent	All Samples	All samples[2]
Completeness		
Sample description and COCs completed and appropriate	All Samples	All samples[2]
Appropriate documentation	All Samples	All samples[2]
Satisfactory frequency and result for QC samples		95% compliance
Data from critical samples is considered valid	-	Critical samples valid
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria	All samples	LOR ≤ site assessment criteria

[1] Laboratory method AS4964-2002 is limited in its ability to quantitatively determine the concentrations of asbestos in soils, as described in detail in NEPC (2013). On this basis, the determination will be made on a detect/non-detect basis rather than the reported concentrations.
2 Detailed assessment of the appropriateness of sampling for the media and analyte will be presented in the quality assurance / quality control section.

5.1.8 Optimise the design for collecting data

Multiple lines of evidence have been relied upon to support decision making in accordance with **Table 5.1**. The design of data collection for each line of evidence is discussed separately following. With reference to Section 4 of Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater (S4/B1 NEPC 2013)

Detailed Inspection of the Site Surfaces

To provide preliminary input to Tier 2 analysis, data was collected for consideration in the qualitative assessment of risks posed by asbestos (S4/B1 NEPC 2013). A detailed inspection of site surfaces was undertaken, as documented in **Section 2.2**. The purpose of the inspection was to identify pertinent details defined by NEPC (2013) as:

- *"the nature and extent of contamination; the site-specific exposure scenario(s) including the intensity of relevant site activities;*
- *the impact of any mitigating factors such as soil type and soil moisture conditions (and likely variation);*
- *the proposed remediation and management measures; and the final use of the site."*

Site inspections were undertaken by two competent persons as defined in *How to Manage and Control Asbestos in the Workplace: Code of Practice* (SWA 2016).

Intrusive Soil Investigations

Previous investigations indicated that soils through the management area comprised a shallow top-soil layer, typically extending from the ground surface to between 0.3 m and 0.5 m bgl. The top-soil material was absent building and demolition wastes. In accordance with WA DOH (2009), where the

presence of '*uncontrolled fill material without mixed building waste*' is identified, the likelihood of asbestos within shallow soils was considered to be '*possible*'. WA DOH (2009) recommends adopting a judgemental sampling approach or systematic sampling approach at half the EPA (1995) density. The adopted sampling density was 45 boreholes on a systematic grid basis over the management area (3.5 ha) as shown on **Figure 4**, noted to be greater than double the WA DOH (2009) recommendation.

No opportunity currently exists for more intrusive sampling methodologies (i.e. test pitting). Soils were excavated using hand tools (hand auger) as was necessitated by the ongoing use of the management area for recreational purposes.

Activity Based Asbestos in Air Sampling

As part of JBS&G (2018), air monitoring was conducted from boundary locations as shown in the asbestos in air monitoring report **Appendix A**, proximal to soil disturbance activities undertaken during sampling. The field investigations included manual excavations within the material subject to asbestos assessment. The sample data is considered to be representative of potential airborne asbestos concentrations which may be generated during ground disturbance works by non-intrusive site usage (**Section 4.2**) workers as well as localised soil disturbance which could be expected during localised soil disturbance by recreational users of the site.

5.2 Soil Assessment Methodology

Boreholes were advanced using a 85 mm diameter hand auger to a depth of 0.3 m bgs at 45 locations. Soils were excavated and placed onto contrasting plastic sheeting to facilitate inspection. The volume of soil inspected at each sample location was approximately 1.7 L, noted to be less than the WA DOH (2009) minimum sample volume recommendation, though considered to be adequate for the purpose of the investigation given the adopted borehole spatial density substantially exceeded the recommended minimum, field and laboratory limits of reporting and the current conceptual understanding of the subject medium.

Two samples were submitted for laboratory analysis (per Australian Standard AS 4964 – 2004: from each borehole, one from 0-0.15 m and one from 0.15-0.3 m bgs.

Duplicate and Triplicate Sample Preparation

Soil duplicate and triplicate samples were obtained during sampling using the above sampling methods. The collected primary samples were divided laterally into three samples with minimal disturbance and placed in separate 500 mL sample bag. Each sample was then labelled with a primary, duplicate or triplicate sample identification before being placed in the same esky for laboratory transport.

Decontamination

Prior to the commencement of sampling activities, non-disposable sampling equipment (hand auger) were cleaned with a water/detergent spray, rinsed with water and then air dried. The equipment was then inspected to ensure that no soil, oil, debris or other contaminants were apparent on the equipment prior to the commencement of works. Sampling equipment was subsequently decontaminated using the above process between each sampling location. Decontamination field sheets for field works are provided in **Appendix B**.

New nitrile gloves were utilised for the collection of each soil sample to avoid cross contamination between samples and locations.

5.3 Laboratory Analysis

JBS&G contracted Eurofins | MGT (Eurofins) as the primary laboratory all analyses. The secondary laboratory for the investigation was Envirolab Services Pty Ltd (Envirolab). Both laboratories are NATA accredited for the requested analysis. In addition, the laboratories were required to meet

JBS&G's internal QA/QC requirements. Laboratory analysis of samples was conducted as summarised in **Table 6.3**. Copies of the laboratories Certificates of Analysis are provided in **Appendix C.**

In addition to the above analyses, for QA/QC purposes field duplicates and triplicates were analysed at a rate of 1/18 for soil primary samples.

Table 1.3: Laboratory Analysis Schedule

Potentially Effected Media	Number of Sample Locations	Requested Analysis
Surface soils (<0.3 m bgs) in assessment area	45	Asbestos NEPM (500g) – 90 samples

6. Quality Assurance / Quality Control

An assessment of QA/QC was undertaken by determination of DQIs for the data generated as part of the assessment activities as outlined in **Section 6.1.7**.

The data reliability assessment was completed by comparison against the PARCCS parameters of Precision, Accuracy, Representativeness, Completeness, Comparability and Sensitivity as presented in **Appendix D**.

The field sampling, inspection and handling procedures produced QA/QC results which indicated that the data set is of an acceptable quality and suitable for use in site characterisation.

The NATA certified laboratory results indicate that the project laboratories were generally achieving levels of performance within their recommended control limits during the period when the samples from this program were analysed.

On the basis of the results of the field and laboratory QA/QC program, the data set is of an acceptable quality upon which to draw conclusions regarding the environmental condition of the assessment area.

7. Results

7.1 Soil Observations

Field observations as encountered at the site during the intrusive investigation are summarised below. Sample locations are shown on **Figure 4** and a summary of soil analytical data with comparison to the adopted site criteria is presented in **Table A**. Borelogs are provided in **Appendix E**.

All sample locations in the assessment area (to target depth of 0.3 m bgs) comprised fill materials observed as damp to moist grey and orange sand and sandy clays with trace inclusions of gravels, rootlets and clay clasts.

No anthropogenic inclusions were identified within the soils subject to this intrusive investigation.

7.2 Soil Analytical Results

Ninety primary samples were submitted for laboratory analysis. The laboratory reports indicated that there were no positive detections of asbestos in any of the 90 primary samples or any of the field duplicate samples analysed.

7.3 Asbestos Fibres in Air Results

Five air samples were collected and analysed in accordance with NOHSC:3003(2005). Samples were collected over a minimum period of 6 hours and 19 minutes with a minimum volume of approximately 730 L. The laboratory reported that no asbestos was detected at the reporting limit of 0.01 fibres / mL, which is less than the action criteria identified in **Section 5.1.6**.

8. Discussion

Based on the decision-making process for assessing urban redevelopment sites detailed in EPA (2017) and discussed in **Section 5.1.2** the decisions required to be made are discussed below.

8.1 Are there any potentially unacceptable risks to likely future on site receptors undertaking non-intrusive site activities posed by the presence of asbestos at the site?

All samples submitted for asbestos for both soils and air analysis returned a non-detect result, and were below the adopted site criteria. As such, for continued 'non-intrusive' land uses as defined in **Section 4.2** this assessment has not identified any potentially unacceptable risks posed by the presence of asbestos within the management area.

In accordance with the decision-making process presented in **Table 5.1** the answer to the decision question '**No**'.

8.2 Are there any aesthetic issues at the site?

Based on available site investigation data, the following discussion is provided:

- No unacceptable aesthetic issues (including anthropogenic materials and/or ACM) were observed on accessible site surfaces as reported by the current or historical investigations within the management area; and
- Shallow (<0.3 m bgs) soils were observed to be free of anthropogenic inclusions (including ACM), staining, odours, or other indicators of potentially unacceptable aesthetic impacts.

In accordance with the decision-making process presented in **Table 5.1** the answer is to the decision question '**No**'.

Notwithstanding, historical identification of substantial proportions of anthropogenic wastes in deeper soils (>0.3 m bgs) within the management area will require to be managed as discussed in **Section 8.4** and **Section 9**. The presence of these constituents may comprise aesthetic issues if not appropriately managed. This is noted to be outside the scope assessment for the current DGI.

8.3 Is there any evidence of, or potential for, migration of contaminates from the site?

The investigation works conducted hitherto have not identified gross and/or widespread asbestos impacts which present a significant risk of potential offsite migration. This has been corroborated by the absence of detectable levels of asbestos in air monitoring undertaken during surficial soil disturbance activities documented herein.

In accordance with the decision-making process presented in **Table 5.1** the answer is to the decision question '**No**'.

8.4 Ongoing Site Management

A site management strategy is required to ensure that potential asbestos impacts and known aesthetic issues present within the deeper soil profile do not result in unacceptable risks to site users. The site management strategy shall not apply to non-intrusive site activities, but requires to be provisioned such that the ongoing maintenance of site surfaces is achieved to ensure that deeper soil impacts do not become exposed during future site operations.

9. Conclusions and Recommendations

Based on the scope of investigation works completed, and subject to the limitations presented in **Section 10**, the following conclusions are provided:

- The management area has been subjected to detailed assessment by inspection of site surfaces, intrusive soil investigations and activity-based asbestos in air monitoring to provide multiple lines of evidence for consideration in determination of potential risks to current site users under a non-intrusive (recreational and general site maintenance) site usage scenario;
- No unacceptable risks to site users who occupy the site for general recreational and/or surficial maintenance purposes (i.e. non-intrusive usage) have been identified within the management area;
- No unacceptable aesthetic issues or potential for contaminant migration has been identified at the site subject to the maintenance of site surfaces;
- Due to the presence of aesthetic impacts and potentially asbestos impacted soils within the deeper soils, identified within the DSI (JBS&G 2019) ongoing management will be required to ensure that potential risks through exposure to deep soils remain low and acceptable; and

It is recommended that the Environmental Management Plan (EMP) provided concurrently with this assessment is implemented.

10. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Figures

Legend

- Approximate Site Boundary
- Coal Conveyour Systems

JBS&G

Job No: 57611	
Client: Urbis Pty Ltd	
Version: R01 Rev A	Date 24/10/2019
Drawn By: AS	Checked By: RL

Scale 1:15,000

0 175 350

metres

Coord. Sys. GDA 1994 MGA Zone 56

Pacific Hwy and Wentworth Ave, Doyalson NSW

SITE LOCATION

FIGURE 1

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Urbis Pty Ltd\57611 HHRA Doyalson\GIS\Maps\R01 Rev A\57611_01_Sitelocation.mxd
Reference: Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA

	Easting	Northing
A	362737.407	6326401.156
B	363268.110	6326317.710
C	363167.179	6325795.900
D	363129.137	6325741.108
E	362510.288	6325839.129
F	362639.587	6326017.426
G	362539.000	6325787.314
H	362504.086	6325814.896
I	362516.363	6325862.500
J	362617.393	6325983.027
K	362639.690	6326017.545

Legend

- Approximate Site Boundary
- Cadastre
- Jemena Gasline
- Stockpiles
- Evaporation Trenches/Septic
- Surface Water

JBS&G

Job No: 57611

Client: Urbis Pty Ltd

Version: R01 RevA | Date 24/10/2019

Drawn By: AS | Checked By: RL

Scale 1:4,000

0 40 80
metres

Coord. Sys. GDA 1994 MGA Zone 56

Pacific Hwy and Wentworth Ave, Doyalson NSW

SITE LAYOUT AND FEATURES

FIGURE 2

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Urbis Pty Ltd\57611 HHRA Doyalson\GIS\Maps\R01 Rev A\57611_02_SiteLayoutandFeatures.mxd
Reference: www.nearmap.com - Imagery 20190520

TP035 Analyte	Date	Presence/ Absence	Criteria
Non-friable Asbestos	14/08/2019	Presence	HSL

TP153 Analyte	Date	Presence/ Absence	Criteria
Chrysotile Asbestos	14/08/2019	Presence	HSL

TP036 Analyte	Date	Presence/ Absence	Criteria
Non-friable Asbestos	14/08/2019	Presence	HSL

Legend

- Approximate Site Boundary
- Cadastre

Sample Locations

- Borehole
- Borehole/Monitoring well
- Surface water

JBS&G

Job No: 57611

Client: Urbis Pty Ltd

Version: R01 Rev A | Date 24/10/2019

Drawn By: AS/RF | Checked By: RL

Scale 1:5,000

0 50 100

metres

Coord. Sys. GDA 1994 MGA Zone 56

Pacific Hwy and Wentworth Ave, Doyalson NSW

HISTORICAL SAMPLE LOCATIONS AND EXCEEDANCES

FIGURE 3

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Urbis Pty Ltd\57611 HHRA Doyalson\GIS\Maps\R01 Rev A\57611_03_HistoricalSampleLocations_Exceedances.mxd
Reference: www.nearmap.com - Imagery 20190520

Legend

- Approximate Site Boundary
- Cadastre
- Remediation Area
- Proposed Sample Locations

JBS&G

Job No: 57611	
Client: Urbis Pty Ltd	
Version: R01 Rev A	Date 24/10/2019
Drawn By: AS	Checked By: RL
Scale 1:2,200	

0 25 50
metres

Coord. Sys. GDA 1994 MGA Zone 56

Pacific Hwy and Wentworth Ave, Doyalson NSW

EXTENT OF REMEDIATION AND PROPOSED SAMPLE LOCATIONS

FIGURE 4

File Name: \\JBSG-NSW-FS01\Company Data\Projects\Urbis Pty Ltd\57611 HHRA Doyalson\GIS\Maps\R01 Rev A\57611_04_ManagementArea.mxd
Reference: www.nearmap.com - Imagery 20190520

Summary Tables

Table A - Soil Analytical Data (Asbestos)
Project Number: 57611
Project Name: HHRA Doyalson

	Asbestos										Asbestos
	Approx. Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos ID in Soil
	g	%w/w	%w/w	g	g	g	g	g	g	g	Comment
EQL											Presence/ Abesence
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL C		0.02[#1]									
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL			0.001[#2]								
Work Health Safety Regulatio 2017 Friable Asbestos			0.01								

Sample ID	Investigation	Matrix Description	Sample Date	Lab Report	Sample Code										
Surface Soils (0.0 - 0.3 m bgs)															
HHRA_BH01_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33886	574	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH01_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33887	678	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH02_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33888	604	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH02_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33889	617	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH03_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33890	558	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH03_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33891	571	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH04_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33892	551	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH04_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33893	663	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH05_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33894	583	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH05_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33895	709	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH06_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33896	564	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH06_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33897	634	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH07_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33898	462	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH07_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33899	608	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH08_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33900	532	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH08_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33901	524	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH09_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33902	588	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH09_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33903	658	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH10_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33839	391	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH10_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33840	640	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH11_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33867	560	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH11_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33868	611	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH12_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33869	507	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH12_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33870	494	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH13_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33871	611	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH13_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33872	507	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH14_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33873	530	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH14_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33874	518	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH15_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33875	406	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH15_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33876	403	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH16_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33877	576	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH16_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33878	562	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH17_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33879	500	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH17_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33880	643	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH18_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33881	476	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH18_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33882	504	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH19_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33883	611	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH19_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33884	641	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH20_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33841	700	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH20_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33842	638	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH21_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33905	293	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH21_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33906	420	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH22_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33907	546	0	0	0	0	0	0	0	0	0	Absense
HHRA_QC01	DGI (JBS&G 2019)	HHRA_BH22_0.00-0.15	22-Oct-2019	683935	S19-Oc33904	514	0	0	0	0	0	0	0	0	0	Absense
HHRA-QA01	DGI (JBS&G 2019)	HHRA_BH22_0.00-0.15	22-Oct-2019	228999	228999-1	464	-	<0.001	-	<0.01	-	-	-	-	<0.1	Absense
HHRA_BH22_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33908	603	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH23_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33909	693	0	0	0	0	0	0	0	0	0	Absense

Table A - Soil Analytical Data (Asbestos)
Project Number: 57611
Project Name: HHRA Doyalson

	Asbestos										Asbestos
	Approx. Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos ID in Soil
	g	%w/w	%w/w	g	g	g	g	g	g	g	Comment
EQL											Presence/ Abesence
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL C		0.02[#1]									
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL			0.001[#2]								
Work Health Safety Regulatio 2017 Friable Asbestos			0.01								

Sample ID	Investigation	Matrix Description	Sample Date	Lab Report	Sample Code										
HHRA_QC02	DGI (JBS&G 2019)	HHRA_BH23_0.00-0.15	22-Oct-2019	683935	S19-Oc33885	501	0	0	0	0	0	0	0	0	0	Absense
HHRA-QA02	DGI (JBS&G 2019)	HHRA_BH23_0.00-0.15	22-Oct-2019	228999	228999-2	718	-	<0.001	-	<0.01	-	-	-	-	<0.1	Absense
HHRA_BH23_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33910	521	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH24_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33911	676	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH24_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33912	534	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH25_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33913	566	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH25_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33914	561	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH26_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33915	541	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH26_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33916	617	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH27_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33917	529	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH27_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33918	631	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH28_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33919	570	0	0	0	0	0	0	0	0	0	Absense
HHRA_QC03	DGI (JBS&G 2019)	HHRA_BH28_0.00-0.15	22-Oct-2019	683935	S19-Oc33923	676	0	0	0	0	0	0	0	0	0	Absense
HHRA-QA03	DGI (JBS&G 2019)	HHRA_BH28_0.00-0.15	22-Oct-2019	228999	228999-3	592	-	<0.001	-	<0.01	-	-	-	-	<0.1	Absense
HHRA_BH28_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33920	593	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH29_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33921	731	0	0	0	0	0	0	0	0	0	Absense
HHRA_QC04	DGI (JBS&G 2019)	HHRA_BH29_0.00-0.15	22-Oct-2019	683935	S19-Oc33866	648	0	0	0	0	0	0	0	0	0	Absense
HHRA-QA04	DGI (JBS&G 2019)	HHRA_BH29_0.00-0.15	22-Oct-2019	228999	228999-4	633	-	<0.001	-	<0.01	-	-	-	-	<0.1	Absense
HHRA_BH29_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33922	664	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH30_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33843	596	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH30_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33844	546	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH31_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33848	775	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH31_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33849	650	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH32_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33850	371	0	0	0	0	0	0	0	0	0	Absense
HHRA_QC05	DGI (JBS&G 2019)	HHRA_BH32_0.00-0.15	22-Oct-2019	683935	S19-Oc33847	600	0	0	0	0	0	0	0	0	0	Absense
HHRA-QA05	DGI (JBS&G 2019)	HHRA_BH32_0.00-0.15	22-Oct-2019	228999	228999-5	646	-	<0.001	-	<0.01	-	-	-	-	<0.1	Absense
HHRA_BH32_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33851	541	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH33_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33852	554	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH33_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33853	592	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH34_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33854	573	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH34_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33855	619	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH35_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33856	668	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH35_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33857	719	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH36_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33858	636	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH36_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33859	637	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH37_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33860	552	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH37_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33861	621	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH38_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33862	563	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH38_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33863	457	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH39_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33864	550	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH39_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33865	504	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH40_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33845	600	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH40_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33846	617	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH41_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33829	783	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH41_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33830	594	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH42_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33831	523	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH42_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33832	789	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH43_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33833	656	0	0	0	0	0	0	0	0	0	Absense

Table A - Soil Analytical Data (Asbestos)
Project Number: 57611
Project Name: HHRA Doyalson

						Asbestos										Asbestos
						Approx. Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos ID in Soil
						g	%w/w	%w/w	g	g	g	g	g	g	g	Comment
EQL																Presence/ Abesence
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL C							0.02[#1]									
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL								0.001[#2]								
Work Health Safety Regulatio 2017 Friable Asbestos								0.01								
Sample ID	**Investigation**	**Matrix Description**	**Sample Date**	**Lab Report**	**Sample Code**											
HHRA_BH43_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33834	588	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH44_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33835	649	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH44_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33836	651	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH45_0.00-0.15	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33837	553	0	0	0	0	0	0	0	0	0	Absense
HHRA_BH45_0.15-0.30	DGI (JBS&G 2019)	Fill	22-Oct-2019	683935	S19-Oc33838	558	0	0	0	0	0	0	0	0	0	Absense
TP06_0.0-0.1	DSI (JBSG 2019)	Fill	13/08/2019	671221	S19-Au20150	601	0	0	0	0	0	0	0	0	0	Absense
TP07_0.0-0.1	DSI (JBSG 2019)	Fill	13/08/2019	671221	S19-Au20147	561	0	0	0	0	0	0	0	0	0	Absense
TP08_0.0-0.1	DSI (JBSG 2019)	Fill	13/08/2019	671221	S19-Au20141	625	0	0	0	0	0	0	0	0	0	Absense
TP09 0.0-0.1	DSI (JBSG 2019)	Fill	13/08/2019	671628	S19-Au23515	609	0	0	0	0	0	0	0	0	0	Absense
TP10 0.0-0.1	DSI (JBSG 2019)	Fill	13/08/2019	671628	S19-Au23519	592	0	0	0	0	0	0	0	0	0	Absense
TP11 0.0-0.1	DSI (JBSG 2019)	Fill	13/08/2019	671628	S19-Au23511	634	0	0	0	0	0	0	0	0	0	Absense
TP19 0.0-0.1	DSI (JBSG 2019)	Fill	13/08/2019	671628	S19-Au23535	531	0	0	0	0	0	0	0	0	0	Absense
TP20_0.0-0.1	DSI (JBSG 2019)	Fill	13/08/2019	671221	S19-Au20144	625	0	0	0	0	0	0	0	0	0	Absense
TP21 0.0-0.1	DSI (JBSG 2019)	Fill	14/08/2019	671628	S19-Au23570	790	0	0	0	0	0	0	0	0	0	Absense
BH22 0.0-0.1	DSI (JBSG 2019)	Fill	14/08/2019	671628	S19-Au23479	308	0	0	0	0	0	0	0	0	0	Absense
TP23 0.0-0.1	DSI (JBSG 2019)	Fill	14/08/2019	671628	S19-Au23572	685	0	0	0	0	0	0	0	0	0	Absense
TP24 0.0-0.05	DSI (JBSG 2019)	Fill	14/08/2019	671628	S19-Au23575	519	0	0	0	0	0	0	0	0	0	Absense
TP33_0.0-0.1	DSI (JBSG 2019)	Fill	12/08/2019	671221	S19-Au20167	630	0	0	0	0	0	0	0	0	0	Absense
TP35 0.0-0.1	DSI (JBSG 2019)	Fill	14/08/2019	671628	S19-Au23583	690	0	0	0	0	0	0	0	0	0	Absense
TP36 0.0-0.15	DSI (JBSG 2019)	Fill	14/08/2019	671628	S19-Au23588	734	0	0	0	0	0	0	0	0	0	Absense
BH152 0.0-0.1	DSI (JBSG 2019)	Fill	14/08/2019	671628	S19-Au23548	373	0	0	0	0	0	0	0	0	0	Absense
Soils at Depth (>0.3 m bgs)																
TP23 2.9-3.0	DSI (JBSG 2019)	Fill	14/08/2019	671628	S19-Au23574	731	0	0	0	0	0	0	0	0	0	Absense
TP24 1.4-1.5	DSI (JBSG 2019)	Fill	14/08/2019	671628	S19-Au23576	798	0	0	0	0	0	0	0	0	0	Absense
TP33_0.9-1.0	DSI (JBSG 2019)	Fill	12/08/2019	671221	S19-Au20168	627	0	0	0	0	0	0	0	0	0	Absense
QC02	DSI (JBSG 2019)	TP33_0.9-1.0	12/08/2019	671221	S19-Au20176	446	0	0	0	0	0	0	0	0	0	Absense
QA02	DSI (JBSG 2019)	TP33_0.9-1.0	14/08/2019	224101	224101-2	511	0	0	0	0	0	0	0	0	0	Absense
Fragments																
TP08_FRAG01	DSI (JBSG 2019)	TP08 at 3.5 m bgs	13/08/2019	671221	S19-Au20153	38	0	0	0	0	0	0	0	0	0	Absense
TP35 FRAG01	DSI (JBSG 2019)	TP35 at 2.0 m bgs	14/08/2019	671628	S19-Au23586	33	0	0	0	0	0	0	0	0	0	**Presence**
TP35 FRAG02	DSI (JBSG 2019)	TP35 at 3.0 m bgs	14/08/2019	671628	S19-Au23587	85	0	0	0	0	0	0	0	0	0	**Presence**
TP36 FRAG01	DSI (JBSG 2019)	TP36 at 0.5 m bgs	14/08/2019	671628	S19-Au23590	75	0	0	0	0	0	0	0	0	0	**Presence**
BH153 FRAG-01	DSI (JBSG 2019)	TP153 at 2.1 m bgs	14/08/2019	671628	S19-Au23554	42	0	0	0	0	0	0	0	0	0	**Presence**
Statistical Summary of 500 ml Asbestos Analysis																
Number of Results						#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
Number of Detects						0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration						#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
Minimum Detect						#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
Maximum Concentration						#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
Maximum Detect						#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
Average Concentration						#NAME?	#NAME?	0	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
Median Concentration						#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
Standard Deviation						#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
Number of Guideline Exceedances						#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
Number of Guideline Exceedances(Detects Only)						#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?

Env Stds Comments

Table A - Soil Analytical Data (Asbestos)
Project Number: 57611
Project Name: HHRA Doyalson

	Asbestos										Asbestos
	Approx. Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos ID in Soil
	g	%w/w	%w/w	g	g	g	g	g	g	g	Comment
EQL											Presence/ Abesence
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL C		0.02[#1]									
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL			0.001[#2]								
Work Health Safety Regulatio 2017 Friable Asbestos			0.01								

Sample ID	Investigation	Matrix Description	Sample Date	Lab Report	Sample Code

#1:Residential A with garden/accessible soil also includes children's day care centres, preschools and primary schools.
#2:The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures (refer Section 4.10). This screening level is not applicable to free fibres.

Table A(2) - Soil Analytical Data (Asbestos)
Project Number: 56387
Project Name: Doyalson DSI

					Asbestos										Asbestos
					Approx. Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos ID in Soil
					g	%w/w	%w/w	g	g	g	g	g	g	g	Comment
EQL															Presence/ Abesence
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A						0.01[#1]									
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL							0.001[#2]								
Sample ID	**Matrix Description**	**Sample Date**	**Lab Report**	**Sample Code**											
BH001/MW01 0.0-0.1	Fill	12/08/2019	671221	S19-Au20121	537	0	0	0	0	0	0	0	0	0	Absense
BH002/MW02 0.0-0.1	Fill	12/08/2019	671221	S19-Au20123	550	0	0	0	0	0	0	0	0	0	Absense
BH003 0.0-0.1	Fill	12/08/2019	671221	S19-Au20126	283	0	0	0	0	0	0	0	0	0	Absense
BH004/MW03 0.2-0.3	Fill	14/08/2019	671628	S19-Au23500	504	0	0	0	0	0	0	0	0	0	Absense
QC05	BH004/MW03 0.2-0.3	14/08/2019	671628	S19-Au23555	407	0	0	0	0	0	0	0	0	0	Absense
BH005 0.0-0.1	Fill	14/08/2019	671628	S19-Au23502	212	0	0	0	0	0	0	0	0	0	Absense
TP06_0.0-0.1	Fill	13/08/2019	671221	S19-Au20150	601	0	0	0	0	0	0	0	0	0	Absense
TP07_0.0-0.1	Fill	13/08/2019	671221	S19-Au20147	561	0	0	0	0	0	0	0	0	0	Absense
TP08_0.0-0.1	Fill	13/08/2019	671221	S19-Au20141	625	0	0	0	0	0	0	0	0	0	Absense
TP09 0.0-0.1	Fill	13/08/2019	671628	S19-Au23515	609	0	0	0	0	0	0	0	0	0	Absense
TP10 0.0-0.1	Fill	13/08/2019	671628	S19-Au23519	592	0	0	0	0	0	0	0	0	0	Absense
TP11 0.0-0.1	Fill	13/08/2019	671628	S19-Au23511	634	0	0	0	0	0	0	0	0	0	Absense
BH15 0.0-0.1	Fill	14/08/2019	671628	S19-Au23505	386	0	0	0	0	0	0	0	0	0	Absense
BH17 0.0-0.1	Fill	14/08/2019	671628	S19-Au23508	458	0	0	0	0	0	0	0	0	0	Absense
TP18 0.0-0.1	Fill	14/08/2019	671628	S19-Au23568	795	0	0	0	0	0	0	0	0	0	Absense
TP19 0.0-0.1	Fill	13/08/2019	671628	S19-Au23535	531	0	0	0	0	0	0	0	0	0	Absense
TP20_0.0-0.1	Fill	13/08/2019	671221	S19-Au20144	625	0	0	0	0	0	0	0	0	0	Absense
TP21 0.0-0.1	Fill	14/08/2019	671628	S19-Au23570	790	0	0	0	0	0	0	0	0	0	Absense
BH22 0.0-0.1	Fill	14/08/2019	671628	S19-Au23479	308	0	0	0	0	0	0	0	0	0	Absense
TP23 0.0-0.1	Fill	14/08/2019	671628	S19-Au23572	685	0	0	0	0	0	0	0	0	0	Absense
TP23 2.9-3.0	Fill	14/08/2019	671628	S19-Au23574	731	0	0	0	0	0	0	0	0	0	Absense
TP24 0.0-0.05	Fill	14/08/2019	671628	S19-Au23575	519	0	0	0	0	0	0	0	0	0	Absense
TP24 1.4-1.5	Fill	14/08/2019	671628	S19-Au23576	798	0	0	0	0	0	0	0	0	0	Absense
BH25/MW04 0.0-0.1	Natural	14/08/2019	671628	S19-Au23481	387	0	0	0	0	0	0	0	0	0	Absense
BH27 0.0-0.1	Fill	13/08/2019	671628	S19-Au23546	506	0	0	0	0	0	0	0	0	0	Absense
TP28 0.0-0.1	Fill	14/08/2019	671628	S19-Au23578	792	0	0	0	0	0	0	0	0	0	Absense
BH29 0.0-0.1	Fill	14/08/2019	671628	S19-Au23486	406	0	0	0	0	0	0	0	0	0	Absense
BH32 0.0-0.1	Fill	14/08/2019	671628	S19-Au23580	232	0	0	0	0	0	0	0	0	0	Absense
TP33_0.0-0.1	FIll	12/08/2019	671221	S19-Au20167	630	0	0	0	0	0	0	0	0	0	Absense
TP33_0.9-1.0	Fill	12/08/2019	671221	S19-Au20168	627	0	0	0	0	0	0	0	0	0	Absense
QC02	TP33_0.9-1.0	12/08/2019	671221	S19-Au20176	446	0	0	0	0	0	0	0	0	0	Absense
QA02	TP33_0.9-1.0	14/08/2019	224101	224101-2	511	0	0	0	0	0	0	0	0	0	Absense
TP35 0.0-0.1	Fill	14/08/2019	671628	S19-Au23583	690	0	0	0	0	0	0	0	0	0	Absense
TP36 0.0-0.15	Fill	14/08/2019	671628	S19-Au23588	734	0	0	0	0	0	0	0	0	0	Absense
BH38/MW05 0.0-0.1	Fill	13/08/2019	671628	S19-Au23542	474	0	0	0	0	0	0	0	0	0	Absense
BH39 0.0-0.1	Fill	13/08/2019	671628	S19-Au23544	439	0	0	0	0	0	0	0	0	0	Absense
TP40 0.0-0.1	Natural	14/08/2019	671628	S19-Au23591	790	0	0	0	0	0	0	0	0	0	Absense
TP41 0.0-0.1	Fill	14/08/2019	671628	S19-Au23593	625	0	0	0	0	0	0	0	0	0	Absense
TP42 0.0-0.1	Fill	14/08/2019	671628	S19-Au23595	713	0	0	0	0	0	0	0	0	0	Absense
QC06	TP42 0.0-0.1	14/08/2019	671628	S19-Au23596	689	0	0	0	0	0	0	0	0	0	Absense
QA06	TP42 0.0-0.1	14/08/2019	224101	224101-6	750	0	0	0	0	0	0	0	0	0	Absense
TP43_0.0-0.1	Natural	12/08/2019	671221	S19-Au20169	655	0	0	0	0	0	0	0	0	0	Absense
TP44_0.0-0.1	Fill	12/08/2019	671221	S19-Au20170	465	0	0	0	0	0	0	0	0	0	Absense
TP45_0.0-0.1	Natural	12/08/2019	671221	S19-Au20172	403	0	0	0	0	0	0	0	0	0	Absense
TP46_0.0-0.1	Natural	12/08/2019	671221	S19-Au20173	632	0	0	0	0	0	0	0	0	0	Absense
TP47_0.0-0.1	Natural	12/08/2019	671221	S19-Au20175	588	0	0	0	0	0	0	0	0	0	Absense
TP48_0.0-0.1	Natural	12/08/2019	671221	S19-Au20177	470	0	0	0	0	0	0	0	0	0	Absense
TP49_0.0-0.1	Fill	12/08/2019	671221	S19-Au20178	529	0	0	0	0	0	0	0	0	0	Absense
TP50_0.0-0.1	Fill	12/08/2019	671221	S19-Au20180	590	0	0	0	0	0	0	0	0	0	Absense
TP51_0.0-0.1	Fill	12/08/2019	671221	S19-Au20154	1037	0	0	0	0	0	0	0	0	0	Absense
TP52_0.0-0.5	Fill	12/08/2019	671221	S19-Au20166	762	0	0	0	0	0	0	0	0	0	Absense
TP53_0.0-0.1	Fill	12/08/2019	671221	S19-Au20164	842	0	0	0	0	0	0	0	0	0	Absense
TP54 0.0-0.1	Fill	14/08/2019	671628	S19-Au23558	745	0	0	0	0	0	0	0	0	0	Absense
BH59_0.0-0.1	Natural	15/08/2019	671915	S19-Au25381	264	0	0	0	0	0	0	0	0	0	Absense
TP60_0.0-0.1	Natural	12/08/2019	671221	S19-Au20181	710	0	0	0	0	0	0	0	0	0	Absense
TP61_0.0-0.1	Natural	12/08/2019	671221	S19-Au20182	700	0	0	0	0	0	0	0	0	0	Absense
TP62_0.0-0.1	Natural	12/08/2019	671221	S19-Au20184	636	0	0	0	0	0	0	0	0	0	Absense
TP63_0.4-0.5	Fill	12/08/2019	671221	S19-Au20157	682	0	0	0	0	0	0	0	0	0	Absense
TP64_0.0-0.1	Fill	12/08/2019	671221	S19-Au20159	554	0	0	0	0	0	0	0	0	0	Absense
BH70/MW08 0.0-0.1	Fill	13/08/2019	671628	S19-Au23540	512	0	0	0	0	0	0	0	0	0	Absense
QC03	BH70/MW08 0.0-0.1	13/08/2019	671628	S19-Au23541	422	0	0	0	0	0	0	0	0	0	Absense
QA03	BH70/MW08 0.0-0.1	14/08/2019	224101	224101-3	409	0	0	0	0	0	0	0	0	0	Absense
BH77_0.0-0.1	Fill	15/08/2019	671915	S19-Au25385	529	0	0	0	0	0	0	0	0	0	Absense

Table A(2) - Soil Analytical Data (Asbestos)
Project Number: 56387
Project Name: Doyalson DSI

					Asbestos										Asbestos
					Approx. Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Asbestos ID in Soil
					g	%w/w	%w/w	g	g	g	g	g	g	g	Comment
EQL															Presence/ Abesence
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL A						0.01[#1]									
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL							0.001[#2]								
Sample ID	**Matrix Description**	**Sample Date**	**Lab Report**	**Sample Code**											
TP082_0.0-0.1	Fill	15/08/2019	671915	S19-Au25415	87	0	0	0	0	0	0	0	0	0	Absense
TP083_0.0-0.1	Natural	15/08/2019	671915	S19-Au25396	857	0	0	0	0	0	0	0	0	0	Absense
TP085_0.0-0.1	Natural	15/08/2019	671915	S19-Au25406	735	0	0	0	0	0	0	0	0	0	Absense
TP093_0.0-0.1	Natural	15/08/2019	671915	S19-Au25411	540	0	0	0	0	0	0	0	0	0	Absense
TP094_0.0-0.1	Natural	15/08/2019	671915	S19-Au25422	605	0	0	0	0	0	0	0	0	0	Absense
TP099_0.0-0.1	Natural	15/08/2019	671915	S19-Au25527	405	0	0	0	0	0	0	0	0	0	Absense
TP104_0.0-0.1	Natural	15/08/2019	671915	S19-Au25428	637	0	0	0	0	0	0	0	0	0	Absense
TP105_0.0-0.1	Natural	15/08/2019	671915	S19-Au25426	546	0	0	0	0	0	0	0	0	0	Absense
BH113_0.0-0.1	Natural	15/08/2019	671915	S19-Au25856	498	0	0	0	0	0	0	0	0	0	Absense
BH115/MW06 0.0-0.1	Fill	13/08/2019	671221	S19-Au20130	326	0	0	0	0	0	0	0	0	0	Absense
BH115/MW06 0.2-0.3	Natural	13/08/2019	671221	S19-Au20131	579	0	0	0	0	0	0	0	0	0	Absense
TP117_0.0-0.1	Natural	15/08/2019	671915	S19-Au25504	469	0	0	0	0	0	0	0	0	0	Absense
BH135/MW07 0.0-0.1	Natural	13/08/2019	671221	S19-Au20133	463	0	0	0	0	0	0	0	0	0	Absense
TP137_0.0-0.1	Fill	12/08/2019	671221	S19-Au20162	996	0	0	0	0	0	0	0	0	0	Absense
TP139_0.0-0.1	Fill	12/08/2019	671221	S19-Au20160	761	0	0	0	0	0	0	0	0	0	Absense
TP140_0.0-0.1	Fill	12/08/2019	671221	S19-Au20158	731	0	0	0	0	0	0	0	0	0	Absense
TP141_0.0-0.1	Fill	12/08/2019	671221	S19-Au20155	763	0	0	0	0	0	0	0	0	0	Absense
BH142 0.0-0.1	Fill	12/08/2019	671221	S19-Au20127	421	0	0	0	0	0	0	0	0	0	Absense
BH143 0.0-0.1	Fill	12/08/2019	671221	S19-Au20129	268	0	0	0	0	0	0	0	0	0	Absense
TP144 0.0-0.1	Fill	13/08/2019	671628	S19-Au23522	608	0	0	0	0	0	0	0	0	0	Absense
TP144 2.9-3.0	Fill	13/08/2019	671628	S19-Au23525	788	0	0	0	0	0	0	0	0	0	Absense
TP145 0.4-0.5	Fill	13/08/2019	671628	S19-Au23531	679	0	0	0	0	0	0	0	0	0	Absense
BH147 0.0-0.1	Fill	13/08/2019	671628	S19-Au23547	369	0	0	0	0	0	0	0	0	0	Absense
BH150 0.0-0.1	Fill	14/08/2019	671628	S19-Au23498	307	0	0	0	0	0	0	0	0	0	Absense
BH152 0.0-0.1	Fill	14/08/2019	671628	S19-Au23548	373	0	0	0	0	0	0	0	0	0	Absense
TP154 0.0-0.1	Natural	14/08/2019	671628	S19-Au23565	655	0	0	0	0	0	0	0	0	0	Absense
TP155_0.0-0.05	Fill	15/08/2019	671915	S19-Au25413	870	0	0	0	0	0	0	0	0	0	Absense
TP156_0.0-0.1	Natural	15/08/2019	671915	S19-Au25424	651	0	0	0	0	0	0	0	0	0	Absense
TP157_0.0-0.1	Natural	15/08/2019	671915	S19-Au25421	624	0	0	0	0	0	0	0	0	0	Absense
TP158_0.0-0.1	Fill	15/08/2019	671915	S19-Au25419	512	0	0	0	0	0	0	0	0	0	Absense
TP159_0.0-0.1	Natural	15/08/2019	671915	S19-Au25394	782	0	0	0	0	0	0	0	0	0	Absense
TP161_0.0-0.1	Natural	15/08/2019	671915	S19-Au25403	438	0	0	0	0	0	0	0	0	0	Absense
TP162_0.2-0.3	Natural	15/08/2019	671915	S19-Au25418	561	0	0	0	0	0	0	0	0	0	Absense
BH163_0.0-0.1	Natural	16/08/2019	671915	S19-Au25534	446	0	0	0	0	0	0	0	0	0	Absense
BH164_0.0-0.1	Natural	16/08/2019	671915	S19-Au25532	408	0	0	0	0	0	0	0	0	0	Absense
Fragments															
TP08_FRAG01	TP08 at 3.5 m bgs	13/08/2019	671221	S19-Au20153	38	0	0	0	0	0	0	0	0	0	Absense
TP35 FRAG01	TP35 at 2.0 m bgs	14/08/2019	671628	S19-Au23586	33	0	0	0	0	0	0	0	0	0	**Presence**
TP35 FRAG02	TP35 at 3.0 m bgs	14/08/2019	671628	S19-Au23587	85	0	0	0	0	0	0	0	0	0	**Presence**
TP36 FRAG01	TP36 at 0.5 m bgs	14/08/2019	671628	S19-Au23590	75	0	0	0	0	0	0	0	0	0	**Presence**
BH153 FRAG-01	TP153 at 2.1 m bgs	14/08/2019	671628	S19-Au23554	42	0	0	0	0	0	0	0	0	0	**Presence**
GROUND FRAG01	Surface	16/08/2019	671915	S19-Au25558	18	0	0	0	0	0	0	0	0	0	Absense

Statistical Summary of 500 ml Asbestos Analysis

Number of Results	98	98	98	98	98	98	98	98	98	98	1
Number of Detects	98	98	98	98	98	98	98	98	98	98	1
Minimum Concentration	87	0	0	0	0	0	0	0	0	0	0
Minimum Detect	18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	1037	0	0	0	0	0	0	0	0	0	0
Maximum Detect	1037	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	572	0	0	0	0	0	0	0	0	0	
Median Concentration	583.5	0	0	0	0	0	0	0	0	0	0
Standard Deviation	173	0	0	0	0	0	0	0	0	0	
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments
#1:Residential A with garden/accessible soil also includes children's day care centres, preschools and primary schools.
#2:The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures (refer Section 4.10). This screening level is not applicable to free fibres.

Table A(1) - Soil Analytical Data
Project Number: 56387
Project Name: Doyalson DSI

	Metals & Metalloids								TRHs (NEPC 2013)							BTEXN							Polycyclic Aromatic Hydrocarbons																							
	Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C40 Fraction (Total)	>C10-C16 less Naphthalene (F2)	>C10-C16 Fraction	>C16-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Naphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Carcinogenic PAHs as B(a)P TEQ	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	PAHs (Total)	Phenanthrene	Pyrene	Total Positive PAHs
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	2	0.4	1	1	1	0.1	1	1	50	100	100	50	50	20	20	0.1	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.05	0.5	0.1	0.5	0.1	0.1		0.1	0.1	0.1	0.5	0.1	0.1	
Site Specific EILs (Fill)	100		640	180	1100		110	420														170																						
Site Specific EILs (Natural)	100		640	50	1100		8	150														170																						
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil										300[#1]	2800[#1]		120[#2]		180[#2]	50[#1]	70[#1]	85[#1]			105[#1]						0.7[#1]																		
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil										1300[#1]	5600[#1]		120[#2]		180[#2]	65[#1]	125[#1]	105[#1]			45[#1]						0.7[#1]																		
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse									1000[#3]	2500	10000			700[#4]																															
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Fine									1000[#3]	3500	10000			800[#4]																															
NEPM 2013 Soil HIL A	100[#8]	20	100[#9]	6000	300[#10]	40[#11]	400	7400										160[#12]															3[#13]			300[#14]						
NEPM 2013 Soil Clay - Saturation Limit													560[#5]		850[#6]	430[#7]	68[#7]	630[#7]			330[#7]	10[#7]																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m													280[#16]		50[#17]	0.7	NL	480			110	5																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m													NL[#16]		90[#17]	1	NL	NL			310	NL																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 2 to <4m													NL[#16]		150[#17]	2	NL	NL			NL	NL																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 4m+													NL[#16]		290[#17]	3	NL	NL			NL	NL																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m													110[#16]		45[#17]	0.5	55	160			40	3																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 1 to <2m													240[#16]		70[#17]	0.5	NL	220			60	NL																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 2 to <4m													440[#16]		110[#17]	0.5	NL	310			95	NL																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 4m+													NL[#16]		200[#17]	0.5	NL	540			170	NL																					

Sample ID	Soil Description	Sample Date	Lab Report	Sample Code																																												
BH001/MW01 0.0-0.1	Fill	12/08/2019	671221	S19-Au20121	2.5	<0.4	17	9.5	9.2	<0.1	11	19	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	1.9	<0.5	3.3	17	18	14	22	18	23	5.7	30.35	51	0.8	13	244.9	9.2	48	-
BH001/MW01 0.2-0.3	Fill	12/08/2019	671221	S19-Au20122	-	-	-	-	-	-	-	-	<50	190	<100	190	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH002/MW02 0.2-0.3	Fill	12/08/2019	671221	S19-Au20124	<2	<0.4	<5	<5	<5	2.1	<5	<5	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QC01	BH002/MW02 0.2-0.3	13/08/2019	671221	S19-Au20140	5	<0.4	43	20	10	<0.1	36	35	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QA01	BH002/MW02 0.2-0.3	14/08/2019	224101	224101-1	<4	<0.4	23	12	8	<0.1	19	19	<50	<100	<100	<50	<50	<25	<25	<0.2	<1	<0.5	<1	<2	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	<0.1	-	<0.1	<0.1	<0.172	<0.1	<0.1	<0.1	<1.3	<0.1	<0.1	<0.05
BH003 0.0-0.1	Fill	12/08/2019	671221	S19-Au20126	<2	<0.4	7.5	5.5	5.4	<0.1	9.5	17	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH004/MW03 0.0-0.1	Fill	14/08/2019	671628	S19-Au23499	<2	<0.4	7.5	5.5	7.2	<0.1	7	33	<50	140	<100	140	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH004/MW03 0.2-0.3	Fill	14/08/2019	671628	S19-Au23500	3.7	<0.4	8.8	<5	7	<0.1	<5	25	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QC05	BH004/MW03 0.2-0.3	14/08/2019	671628	S19-Au23555	<2	<0.4	<5	<5	5.2	<0.1	<5	11	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QA05	BH004/MW03 0.2-0.3	14/08/2019	224101	224101-5	6	<0.4	11	<1	8	<0.1	<1	3	<50	<100	<100	<50	<50	<25	<25	<0.2	<1	<0.5	<1	<2	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	<0.1	-	<0.1	<0.1	<0.172	<0.1	<0.1	<0.1	<1.3	<0.1	<0.1	<0.05
BH004/MW03 0.4-0.5	Fill	14/08/2019	671628	S19-Au23501	5.7	<0.4	15	<5	12	<0.1	<5	6.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH005 0.0-0.1	Fill	14/08/2019	671628	S19-Au23502	<2	<0.4	5.9	<5	5.6	<0.1	<5	14	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP06_0.4-0.5	Fill	13/08/2019	671221	S19-Au20151	<2	<0.4	6.8	6.5	13	<0.1	<5	30	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP06_2.4-2.5	Fill	13/08/2019	671221	S19-Au20152	<2	<0.4	6.4	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP07_0.0-0.1	Fill	13/08/2019	671221	S19-Au20147	-	-	-	-	-	-	-	-	<50	<100	150	150	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-
TP07_2.4-2.5	Fill	13/08/2019	671221	S19-Au20149	7.4	<0.4	8.1	6.1	11	<0.1	<5	26	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP08_0.0-0.1	Fill	13/08/2019	671221	S19-Au20141	5.4	<0.4	29	12	7	<0.1	20	44	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP08_2.9-3.0	Fill	13/08/2019	671221	S19-Au20142	-	-	-	-	-	-	-	-	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-
TP08_3.9-4.0	Fill	13/08/2019	671221	S19-Au20143	13	2.2	26	8.3	31	<0.1	<5	380	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP09 0.0-0.1	Fill	13/08/2019	671628	S19-Au23515	2.5	<0.4	7.3	6.4	13	<0.1	<5	36	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QC04	TP09 0.0-0.1	13/08/2019	671628	S19-Au23539	3.2	<0.4	11	<5	12	<0.1	<5	21	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QA04	TP09 0.0-0.1	14/08/2019	224101	224101-4	5	<0.4	7	6	9	<0.1	5	21	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	<0.1	-	<0.1	<0.1	<0.172	<0.1	<0.1	<0.1	<1.3	<0.1	<0.1	<0.05
TP09 0.4-0.5	Fill	13/08/2019	671628	S19-Au23516	-	-	-	-	-	-	-	-	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-
TP09 4.4-4.5	Natural	13/08/2019	671628	S19-Au23518	3.3	<0.4	13	<5	6.2	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP10 0.0-0.1	Fill	13/08/2019	671628	S19-Au23519	4.3	<0.4	15	5.5	10	<0.1	<5	31	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP10 1.4-1.5	Fill	13/08/2019	671628	S19-Au23520	2.7	<0.4	9.6	<5	5.1	<0.1	<5	17	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP10 2.9-3.0	Natural	13/08/2019	671628	S19-Au23521	<2	<0.4	5	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP11 0.4-0.5	Fill	13/08/2019	671628	S19-Au23512	6.6	<0.4	6.8	<5	5.6	<0.1	<5	14	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP11 1.4-1.5	Fill	13/08/2019	671628	S19-Au23513	12	<0.4	14	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP11 1.9-2.0	Natural	13/08/2019	671628	S19-Au23514	<2	<0.4	7	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP12 0.0-0.1	Reworked Natural	13/08/2019	671628	S19-Au23509	<2	<0.4	<5	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP12 0.9-1.0	Natural	13/08/2019	671628	S19-Au23510	5.1	<0.4	12	<5	14	<0.1	<5	<5	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH13_0.0-0.1	Sediment	15/08/2019	671915	S19-Au25383	<2	<0.4	8.5	<5	<5	<0.1	<5	<5	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH014 0.2-0.3	Fill	14/08/2019	671628	S19-Au23504	<2	<0.4	9.3	16	6.1	<0.1	9.4	33	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH15 0.0-0.1	Fill	14/08/2019	671628	S19-Au23505	<2	<0.4	9.9	13	6.1	<0.1	13	38	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH15 0.4-0.5	Natural	14/08/2019	671628	S19-Au23506	2.1	<0.4	11	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH16 0.0-0.1	Fill	14/08/2019	671628	S19-Au23507	<2	<0.4	<5	<5	<5	<0.1	<5	9	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH17 0.0-0.1	Fill	14/08/2019	671628	S19-Au23508	<2	<0.4	9.7	<5	6.7	<0.1	<5	32	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP18 0.0-0.1	Fill	14/08/2019	671628	S19-Au23568	<2	<0.4	5.5	<5	<5	<0.1	<5	15	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QC07	TP18 0.0-0.1	14/08/2019	671628	S19-Au25918	<2	<0.4	6.8	<5	5.2	<0.1	<5	14	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QC07	TP18 0.0-0.1	14/08/2019	671628	S19-Au25918	<2	<0.4	6.8	<5	5.2	<0.1	<5	14	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP18 1.4-1.5	Natural	14/08/2019	671628	S19-Au23569	<2	<0.4	6.3	<5	<5	<0.1	<5	<5	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP19 0.0-0.1	Fill	13/08/2019	671628	S19-Au23535	2.5	<0.4	24	13	5.2	<0.1	22	40	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP19 0.4-0.5	Fill	13/08/2019	671628	S19-Au23536	3.2	<0.4	13	<5	5.7	<0.1	<5	12	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP19 1.4-1.5	Fill	13/08/2019	671628	S19-Au23537	<2	<0.4	6.2	<5	<5	<0.1	<5	<5	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP19 2.4-2.5	Fill	13/08/2019	671628	S19-Au23538	3.6	<0.4	8.8	<5	6.4	<0.1	<5	14	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP20_0.9-1.0	Fill	13/08/2019	671221	S19-Au20145	-	-	-	-	-	-	-	-	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP20_3.4-3.5	Natural	13/08/2019	671221	S19-Au20146	<2	<0.4	9	<5	5.4	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP21 0.0-0.1	Fill	14/08/2019	671628	S19-Au23570	<2	<0.4	6.7	<5	5.8	<0.1	<5	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP21 0.9-1.0	Fill	14/08/2019	671628	S19-Au23571	3	<0.4	8.9	7	13	<0.1	<5	20	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH22 0.0-0.1	Fill	14/08/2019	671628	S19-Au23479	<2	<0.4	7.5	9.8	7.7	<0.1	<5	7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH22 0.9-1.0	Fill	14/08/2019	671628	S19-Au23480	4.3	<0.4	8.1	5.9	19	<0.1	<5	130	<50	170	<100	170	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP23 0.0-0.1	Fill	14/08/2019	671628	S19-Au23572	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP23 0.3-0.4	Fill	14/08/2019	671628	S19-Au23573	2.2	<0.4	14	14	14	<0.1	15	29	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP23 2.9-3.0	Fill	14/08/2019	671628	S19-Au23574	6.6	<0.4	7.6	<5	9.2	<0.1	<5	11	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP24 0.0-0.05	Fill	14/08/2019	671628	S19-Au23575	<2	<0.4	<5	<5	<5	<0.1	<5	9.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP24 1.4-1.5	Fill	14/08/2019	671628	S19-Au23576	3	<0.4	10	9.5	27	<0.1	6.8	46	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5

Table A(1) - Soil Analytical Data
Project Number: 56387
Project Name: Doyalson DSI

	Metals & Metalloids								TRHs (NEPC 2013)							BTEXN							Polycyclic Aromatic Hydrocarbons																											
	Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C40 Fraction (Total)	>C10-C16 less Naphthalene (F2)	>C10-C16 Fraction	>C6-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Naphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benz(b&j)fluoranthene	Benz(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Carcinogenic PAHs as B(a)P TEQ	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	PAHs (Total)	Phenanthrene	Pyrene	Total Positive PAHs
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	2	0.4	1	1	1	0.1	1	1	50	100	100	50	50	20	20	0.1	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.05	0.5	0.1	0.5	0.1	0.1		0.1	0.1	0.1	0.5	0.1	0.1	
Site Specific EILs (Fill)	100		640	180	1100		110	420														170																											
Site Specific EILs (Natural)	100		640	50	1100		8	150														170																											
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil										300[#1]	2800[#1]		120[#2]		180[#2]	50[#1]	70[#1]	85[#1]			105[#1]						0.7[#1]																					
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil										1300[#1]	5600[#1]		120[#2]		180[#2]	65[#1]	125[#1]	105[#1]			45[#1]						0.7[#1]																					
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse									1000[#3]	2500	10000			700[#4]																																		
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Fine									1000[#3]	3500	10000			800[#4]																																		
NEPM 2013 Soil HIL A	100[#8]	20	100[#9]	6000	300[#10]	40[#11]	400	7400										160[#12]														3[#13]				300[#14]									
NEPM 2013 Soil Clay - Saturation Limit													560[#5]		850[#6]	430[#7]	68[#7]	630[#7]			330[#7]	10[#7]																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m													280[#16]		50[#17]	0.7	NL	480			110	5																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m													NL[#16]		90[#17]	1	NL	NL			310	NL																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 2 to <4m													NL[#16]		150[#17]	2	NL	NL			NL	NL																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 4m+													NL[#16]		290[#17]	3	NL	NL			NL	NL																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m													110[#16]		45[#17]	0.5	55	160			40	3																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 1 to <2m													240[#16]		70[#17]	0.5	NL	220			60	NL																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 2 to <4m													440[#16]		110[#17]	0.5	NL	310			95	NL																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 4m+													NL[#16]		200[#17]	0.5	NL	540			170	NL																										

Sample ID	Soil Description	Sample Date	Lab Report	Sample Code																																														
BH34 0.9-1.0	Fill	14/08/2019	671628	S19-Au23494	<2	<0.4	<5	<5	9.1	<0.1	<5	20	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP35 0.0-0.1	Fill	14/08/2019	671628	S19-Au23583	<2	<0.4	<5	<5	<5	<0.1	<5	6.4	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP35 1.9-2.0	Fill	14/08/2019	671628	S19-Au23584	2.7	<0.4	<5	<5	6.9	<0.1	<5	<5	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP35 4.2-4.3	Natural	14/08/2019	671628	S19-Au23585	4.1	<0.4	16	<5	6.1	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP36 0.0-0.15	Fill	14/08/2019	671628	S19-Au23588	5.9	<0.4	12	<5	8.8	<0.1	<5	15	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP36 1.4-1.5	Fill	14/08/2019	671628	S19-Au23589	5.6	<0.4	9	6.6	14	<0.1	<5	39	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH37_0.0-0.1	Fill	15/08/2019	671915	S19-Au25384	4.4	<0.4	8.2	<5	8.5	<0.1	<5	18	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH38/MW05 0.0-0.1	Fill	13/08/2019	671628	S19-Au23542	5.5	<0.4	26	32	5.5	<0.1	51	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH38/MW05 0.2-0.3	Fill	13/08/2019	671628	S19-Au23543	<2	<0.4	8.4	<5	8.7	<0.1	<5	14	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH39 0.0-0.1	Fill	13/08/2019	671628	S19-Au23544	<2	<0.4	9.8	15	6	<0.1	13	39	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH39 0.4-0.5	Fill	13/08/2019	671628	S19-Au23545	3.7	<0.4	23	<5	5.6	<0.1	<5	7.2	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP40 0.0-0.1	Natural	14/08/2019	671628	S19-Au23591	<2	<0.4	<5	<5	6.9	<0.1	<5	30	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP40 0.9-1.0	Natural	14/08/2019	671628	S19-Au23592	<2	<0.4	<5	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP41 0.0-0.1	Fill	14/08/2019	671628	S19-Au23593	-	-	-	-	-	-	-	-	<50	<100	140	140	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP41 0.3-0.4	Fill	14/08/2019	671628	S19-Au23594	2.7	<0.4	9.2	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP42 0.0-0.1	Fill	14/08/2019	671628	S19-Au23595	<2	<0.4	7.1	5.5	8	0.2	<5	41	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QC06	TP42 0.0-0.1	14/08/2019	671628	S19-Au23596	<2	<0.4	6.3	<5	7.2	0.2	<5	31	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QA06	TP42 0.0-0.1	14/08/2019	224101	224101-6	<4	<0.4	5	4	6	0.1	3	37	<50	<100	<100	<50	<50	<25	<25	<0.2	<1	<0.5	<1	<2	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	<0.1	-	<0.1	<0.1	<0.172	<0.1	<0.1	<0.1	<1.3	<0.1	<0.1	<0.05
TP43_0.0-0.1	Reworked Natural	12/08/2019	671221	S19-Au20169	6	<0.4	9.6	<5	10	<0.1	<5	12	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP44_0.0-0.1	Fill	12/08/2019	671221	S19-Au20170	<2	<0.4	<5	<5	11	0.2	<5	15	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP44_0.4-0.5	Fill	12/08/2019	671221	S19-Au20171	-	-	-	-	-	-	-	-	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP45_0.0-0.1	Natural	12/08/2019	671221	S19-Au20172	<2	<0.4	<5	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP46_0.4-0.5	Natural	12/08/2019	671221	S19-Au20174	<2	<0.4	5.3	<5	9.2	<0.1	<5	21	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP47_0.0-0.1	Natural	12/08/2019	671221	S19-Au20175	<2	<0.4	5.1	<5	9.1	<0.1	<5	28	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP48_0.0-0.1	Natural	12/08/2019	671221	S19-Au20177	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP49_0.4-0.5	Fill	12/08/2019	671221	S19-Au20179	<2	<0.4	5.3	7.9	10	<0.1	<5	59	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP50_0.0-0.1	Fill	12/08/2019	671221	S19-Au20180	8	<0.4	11	9.3	5.1	<0.1	13	22	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP51_0.0-0.1	Fill	12/08/2019	671221	S19-Au20154	<2	<0.4	11	16	8.8	<0.1	27	33	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP52_0.0-0.5	Fill	12/08/2019	671221	S19-Au20166	5.3	<0.4	14	<5	9.6	<0.1	<5	11	<50	<100	<100	<100	<50	<100	<100	<0.5	<0.5	<0.5	<0.5	<1	<1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP53_0.9-1.0	Fill	12/08/2019	671221	S19-Au20165	3.1	<0.4	7.6	<5	<5	<0.1	<5	11	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP54 0.0-0.1	Fill	14/08/2019	671628	S19-Au23558	2.8	<0.4	6	8.2	<5	<0.1	9.7	20	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP54 1.4-1.5	Natural	14/08/2019	671628	S19-Au23559	3	<0.4	13	<5	18	<0.1	<5	5.8	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QC08	TP54 1.4-1.5	14/08/2019	671628	S19-Au23560	5.1	<0.4	14	<5	18	<0.1	<5	5.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QA08	TP54 1.4-1.5	14/08/2019	224101	224101-8	<4	<0.4	7	<1	9	<0.1	<1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	<0.1	-	<0.1	<0.1	<0.172	<0.1	<0.1	<0.1	<1.3	<0.1	<0.1	<0.05
TP55 0.0-0.1	Natural	14/08/2019	671628	S19-Au23561	2.5	<0.4	6	<5	12	<0.1	<5	17	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP55 0.9-1.0	Natural	14/08/2019	671628	S19-Au23562	<2	<0.4	7.1	<5	6.3	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH056_0.0-0.1	Natural	15/08/2019	671915	S19-Au25521	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH057_0.4-0.5	Natural	15/08/2019	671915	S19-Au25522	<2	<0.4	7.1	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH058_0.0-0.1	Natural	15/08/2019	671915	S19-Au25523	<2	<0.4	<5	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH59_0.0-0.1	Natural	15/08/2019	671915	S19-Au25381	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP60_0.0-0.1	Natural	12/08/2019	671221	S19-Au20181	<2	<0.4	<5	<5	5.4	<0.1	<5	<5	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP61_0.0-0.1	Natural	12/08/2019	671221	S19-Au20182	<2	<0.4	<5	<5	<5	<0.1	<5	5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP61_0.4-0.5	Natural	12/08/2019	671221	S19-Au20183	-	-	-	-	-	-	-	-	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP62_0.0-0.1	Natural	12/08/2019	671221	S19-Au20184	<2	<0.4	<5	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP63_0.4-0.5	Fill	12/08/2019	671221	S19-Au20157	5.9	<0.4	15	<5	12	<0.1	5.3	11	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP64_0.0-0.1	Fill	12/08/2019	671221	S19-Au20159	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH65_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25387	<2	<0.4	<5	<5	5.2	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH66_0.3-0.4	Reworked Natural	15/08/2019	671915	S19-Au25388	3.2	<0.4	21	<5	12	<0.1	<5	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH67_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25389	<2	<0.4	<5	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH068_0.4-0.5	Natural	15/08/2019	671915	S19-Au25519	<2	<0.4	11	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH069_0.0-0.1	Natural	15/08/2019	671915	S19-Au25520	<2	<0.4	<5	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH70/MW08 0.0-0.1	Fill	13/08/2019	671628	S19-Au23540	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QC03	BH70/MW08 0.0-0.1	13/08/2019	671628	S19-Au23541	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QA03	BH70/MW08 0.0-0.1	14/08/2019	224101	224101-3	<4	<0.4	2	2	4	<0.1	<1	5	<50	<100	<100	<50	<50	<25	<25	0.2	<1	<0.5	<1	<2	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	<0.1	-	<0.1	<0.1	<0.172	<0.1	<0.1	<0.1	<1.3	<0.1	<0.1	<0.05
BH71_0.0-0.1	Fill	15/08/2019	671915	S19-Au25382	3.4	<0.4	6	<5	6.7	<0.1	<5	17	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP072_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP072_0.4-0.5	Natural	15/08/2019	671915	S19-Au25392	3.1	<0.4	20	<5	8.5	<0.1	<5	11	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP073_0.0-0.1	Fill	15/08/2

Table A(1) - Soil Analytical Data
Project Number: 56387
Project Name: Doyalson DSI

| | Metals & Metalloids | | | | | | | | TRHs (NEPC 2013) | | | | | | | BTEXN | | | | | | | Polycyclic Aromatic Hydrocarbons | | | | | | | |

Table A(1) - Soil Analytical Data
Project Number: 56387
Project Name: Doyalson DSI

	Metals & Metalloids								TRHs (NEPC 2013)							BTEXN							Polycyclic Aromatic Hydrocarbons																							
	Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C40 Fraction (Total)	>C10-C16 less Naphthalene (F2)	>C16-C34 Fraction	C6-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Naphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Carcinogenic PAHs as B(a)P TEQ	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	PAHs (Total)	Phenanthrene	Pyrene	Total Positive PAHs
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	2	0.4	1	1	1	0.1	1	1	50	100	100	50	50	20	20	0.1	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.05	0.5	0.1	0.5	0.1	0.1		0.1	0.1	0.1	0.5	0.1	0.1	
Site Specific EILs (Fill)	100		640	180	1100		110	420														170																				
Site Specific EILs (Natural)	100		640	50	1100		8	150														170																				
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil										300[#1]	2800[#1]		120[#2]		180[#2]	50[#1]	70[#1]	85[#1]			105[#1]						0.7[#1]																
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil										1300[#1]	5600[#1]		120[#2]		180[#2]	65[#1]	125[#1]	105[#1]			45[#1]						0.7[#1]																
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse									1000[#3]	2500	10000			700[#4]																														
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Fine									1000[#3]	3500	10000			800[#4]																														
NEPM 2013 Soil HIL A	100[#8]	20	100[#9]	6000	300[#10]	40[#11]	400	7400										160[#12]															3[#13]			300[#14]				
NEPM 2013 Soil Clay - Saturation Limit													560[#5]		850[#6]	430[#7]	68[#7]	630[#7]			330[#7]	10[#7]																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m													280[#16]		50[#17]	0.7	NL	480			110	5																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m													NL[#16]		90[#17]	1	NL	NL			310	NL																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 2 to <4m													NL[#16]		150[#17]	2	NL	NL			NL	NL																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 4m+													NL[#16]		290[#17]	3	NL	NL			NL	NL																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m													110[#16]		45[#17]	0.5	55	160			40	3																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 1 to <2m													240[#16]		70[#17]	0.5	NL	220			60	NL																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 2 to <4m													440[#16]		110[#17]	0.5	NL	310			95	NL																					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 4m+													NL[#16]		200[#17]	0.5	NL	540			170	NL																					

Sample ID	Soil Description	Sample Date	Lab Report	Sample Code																																											
BH152 0.0-0.1	Sediment	14/08/2019	671628	S19-Au23548	3	<0.4	11	9.7	11	<0.1	9.2	45	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH152 2.9-3.0	Fill	14/08/2019	671628	S19-Au23549	3.1	<0.4	8.3	<5	10	<0.1	<5	10	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH152 6.4-6.5	Natural	14/08/2019	671628	S19-Au23550	<2	<0.4	16	<5	7.1	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH153 0.0-0.1	Fill	14/08/2019	671628	S19-Au23551	<2	<0.4	6.2	<5	6.9	<0.1	<5	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH153 1.9-2.0	Fill	14/08/2019	671628	S19-Au23552	2.3	<0.4	15	11	<5	<0.1	15	24	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH153 3.9-4.0	Fill	14/08/2019	671628	S19-Au23553	2.4	<0.4	9.2	<5	5.6	<0.1	<5	56	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP154_0.0-0.1	Fill	14/08/2019	673401	M19-Au37867	2.3	<0.4	5.8	6	10	<0.1	<5	25	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QC09	TP154_0.0-0.1	14/08/2019	671628	S19-Au23566	<2	<0.4	7.3	6.2	9	<0.1	<5	26	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
QA09	TP154_0.0-0.1	14/08/2019	224101	224101-9	<4	<0.4	8	11	12	<0.1	8	31	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	-	<0.1	-	<0.1	<0.1	<0.172	<0.1	<0.1	<0.1	<1.3	<0.1	<0.1	<0.05
TP155_0.0-0.05	Fill	15/08/2019	671915	S19-Au25413	4.7	<0.4	1200	110	19	<0.1	420	130	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP155_0.05-0.15	Fill	15/08/2019	671915	S19-Au25414	49	<0.4	220	5.8	30	<0.1	<5	31	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP156_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25424	<2	<0.4	<5	<5	5.6	<0.1	<5	29	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP156_0.4-0.5	Reworked Natural	15/08/2019	671915	S19-Au25425	2.4	<0.4	6.5	<5	<5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP157_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25421	<2	<0.4	<5	<5	51	<0.1	<5	120	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	0.6	0.6	<0.5	-
TP158_0.0-0.1	Fill	15/08/2019	671915	S19-Au25419	-	-	-	-	-	-	-	-	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP158_0.9-1.0	Fill	15/08/2019	671915	S19-Au25390	6.6	<0.4	12	<5	10	<0.1	<5	15	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP159_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25394	<2	<0.4	<5	<5	9.7	<0.1	<5	6.5	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP160_0.4-0.5	Natural	15/08/2019	671915	S19-Au25397	4.9	<0.4	50	<5	21	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP161_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25403	<2	<0.4	5.9	<5	<5	<0.1	<5	9.4	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP161_0.4-0.5	Natural	15/08/2019	671915	S19-Au25404	2.2	<0.4	19	<5	5.5	<0.1	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
TP162_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25417	-	-	-	-	-	-	-	-	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP162_0.2-0.3	Reworked Natural	15/08/2019	671915	S19-Au25418	<2	<0.4	<5	<5	<5	<0.1	<5	36	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH163_0.0-0.1	Fill	16/08/2019	671915	S19-Au25534	<2	<0.4	18	17	<5	<0.1	21	81	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH164_0.0-0.1	Fill	16/08/2019	671915	S19-Au25532	2.6	<0.4	14	16	8.1	<0.1	21	71	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
BH165_0.2-0.3	Fill	16/08/2019	671915	S19-Au25533	<2	<0.4	<5	<5	6.4	<0.1	<5	110	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-

Statistical Summary

Number of Results	253	253	253	253	253	253	253	253	115	115	115	115	115	115	115	115	115	115	115	115	115	262	249	249	249	249	249	238	249	238	249	249	249	249	249	249	253	249	249	11
Number of Detects	115	1	164	57	161	6	42	157	0	4	4	7	0	0	0	1	1	0	1	1	1	0	1	0	1	2	4	2	3	2	2	1	4	4	1	2	5	3	4	1
Minimum Concentration	<2	<0.4	<1	<1	1	<0.1	<1	<1	<50	<100	<100	<50	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.5	<0.1	<0.5	<0.1	<0.1	0.111	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.05
Minimum Detect	2	2.2	2	2	1	0.1	1	1	ND	140	130	130	ND	ND	ND	0.2	0.3	ND	0.2	0.5	0.7	ND	1.9	ND	3.3	1.1	0.05	1.1	0.6	1.5	1.5	5.7	0.111	0.2	0.8	1.9	0.6	0.6	0.1	0.3	
Maximum Concentration	57	2.2	1200	110	51	2.1	420	390	<50	190	380	530	<50	<100	<100	<0.5	<1	<0.5	<1	<2	<3	<0.5	1.9	<0.5	3.3	17	18	14	22	18	23	5.7	30.35	51	0.8	13	244.9	9.2	48	0.3	
Maximum Detect	57	2.2	1200	110	51	2.1	420	390	ND	190	380	530	ND	ND	ND	0.2	0.3	ND	0.2	0.5	0.7	ND	1.9	ND	3.3	17	18	14	22	18	23	5.7	30.35	51	0.8	13	244.9	9.2	48	0.3	
Average Concentration	3.7	0.21	15	4.4	7.6	0.06	5.7	18	25	54	55	58	25	10	10	0.055	0.077	0.062	0.077	0.15	0.23	0.24	0.25	0.24	0.25	0.31	0.32	0.31	0.34	0.33	0.34	0.26	0.71	0.46	0.24	0.3	1.3	0.29	0.45	0.05	
Median Concentration	1	0.2	7.1	2.5	6.1	0.05	2.5	7.2	25	50	50	50	25	10	10	0.05	0.05	0.05	0.05	0.1	0.15	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.605	0.25	0.25	0.25	0.25	0.25	0.25	0.025	
Standard Deviation	7.1	0.13	77	7.6	6.6	0.13	27	39	0	21	34	51	0	3.8	3.8	0.025	0.1	0.048	0.1	0.21	0.31	0.04	0.11	0.041	0.2	1.1	1.1	0.89	1.4	1.2	1.4	0.35	1.9	3.2	0.054	0.82	15	0.58	3	0.083	
Number of Guideline Exceedances	0	0	2	1	0	0	27	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	
Number of Guideline Exceedances(Detects Only)	0	0	2	1	0	0	27	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	

Env Stds Comments
#1:ESLs are of low reliability.
#2:ESLs are of moderate reliability.
#3:Management limits of BTEX and naphthalene are not available, hence should not be subtracted from the relevant fractions to obtain F1 and F2.
#4:Limits applied after consideration of relevant ESLs and HSLs
#5:To obtain F2 subtract naohthalene from >C10-C16. Exceedence quantifies further interpretation.
#6:To obtain F1 subtract the sum of BTEX from C6-C10. Exceedence quantifies further interpretation.
#7:Exceedence quantifies further interpretation.
#8:Key limitations of HSL should be referred to prior to application in Friebel and Nadebaum (2011b and 2011d).
#9:TV adopted from Chromium (VI)
#10:Assumptions of HSL are presented in Friebel and Nadebaum (2011a and 2011b).
#11:Refer to HSL and soil saturation concentration limit.
#12:Sensitive setting HSL A & HSL B Sand 0m to <1m criteria adopted. Exceedence quantifies further interpretation.
#13:Refer to Section 8.2 and Appendix J in Friebel and Nadebaum (2011a).
#14:TV maybe be multiplied by a factor to account for biodegradation of vapour
#15:HIL relates to non-dioxin-like PCBs only. If PCB source is suspected a site-specific assessment should be untertaken
#16:To obtain F2 subtract naohthalene from >C10-C16.
#17:To obtain F1 subtract the sum of BTEX from C6-C10.

Table A(1) - Soil Analytical Data
Project Number: 56387
Project Name: Doyalson DSI

	Organochlorine Pesticides																									Chlorinated Alkanes																			
	4,4-DDE	Aldrin	Aldrin + Dieldrin (Sum of Total)	Alpha-BHC	Alpha-Chlordane	beta-BHC	Chlordane	DDD	DDT	Dieldrin	DDT+DDE+DDD (Sum of Total)	delta-BHC	Endosulfan alpha	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	gamma-Chlordane	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Carbon tetrachloride	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05		0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	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
Site Specific EILs (Fill)									180																																		
Site Specific EILs (Natural)									180																																		
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																																										
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil																																										
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																																										
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Fine																																										
NEPM 2013 Soil HIL A			6				50				240					10				6			300	20																			
NEPM 2013 Soil Clay - Saturation Limit																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 2 to <4m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 4m+																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 1 to <2m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 2 to <4m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 4m+																																										

Sample ID	Soil Description	Sample Date	Lab Report	Sample Code																																											
BH001/MW01 0.0-0.1	Fill	12/08/2019	671221	S19-Au20121	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH001/MW01 0.2-0.3	Fill	12/08/2019	671221	S19-Au20122	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<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
BH002/MW02 0.2-0.3	Fill	12/08/2019	671221	S19-Au20124	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<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
QC01	BH002/MW02 0.2-0.3	13/08/2019	671221	S19-Au20140	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
QA01	BH002/MW02 0.2-0.3	14/08/2019	224101	224101-1	<0.1	<0.1	<0.2	<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	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
BH003 0.0-0.1	Fill	12/08/2019	671221	S19-Au20126	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH004/MW03 0.0-0.1	Fill	14/08/2019	671628	S19-Au23499	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
BH004/MW03 0.2-0.3	Fill	14/08/2019	671628	S19-Au23500	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
QC05	BH004/MW03 0.2-0.3	14/08/2019	671628	S19-Au23555	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
QA05	BH004/MW03 0.2-0.3	14/08/2019	224101	224101-5	<0.1	<0.1	<0.2	<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	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
BH004/MW03 0.4-0.5	Fill	14/08/2019	671628	S19-Au23501	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH005 0.0-0.1	Fill	14/08/2019	671628	S19-Au23502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06_0.4-0.5	Fill	13/08/2019	671221	S19-Au20151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06_2.4-2.5	Fill	13/08/2019	671221	S19-Au20152	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
TP07_0.0-0.1	Fill	13/08/2019	671221	S19-Au20147	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
TP07_2.4-2.5	Fill	13/08/2019	671221	S19-Au20149	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08_0.0-0.1	Fill	13/08/2019	671221	S19-Au20141	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08_2.9-3.0	Fill	13/08/2019	671221	S19-Au20142	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
TP08_3.9-4.0	Fill	13/08/2019	671221	S19-Au20143	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09 0.0-0.1	Fill	13/08/2019	671628	S19-Au23515	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC04	TP09 0.0-0.1	13/08/2019	671628	S19-Au23539	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QA04	TP09 0.0-0.1	14/08/2019	224101	224101-4	<0.1	<0.1	<0.2	<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	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
TP09 0.4-0.5	Fill	14/08/2019	671628	S19-Au23516	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09 4.4-4.5	Natural	13/08/2019	671628	S19-Au23518	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10 0.0-0.1	Fill	13/08/2019	671628	S19-Au23519	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
TP10 1.4-1.5	Fill	13/08/2019	671628	S19-Au23520	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10 2.9-3.0	Natural	13/08/2019	671628	S19-Au23521	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP11 0.4-0.5	Fill	13/08/2019	671628	S19-Au23512	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP11 1.4-1.5	Fill	13/08/2019	671628	S19-Au23513	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP11 1.9-2.0	Natural	13/08/2019	671628	S19-Au23514	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12 0.0-0.1	Reworked Natural	13/08/2019	671628	S19-Au23509	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12 0.9-1.0	Natural	13/08/2019	671628	S19-Au23510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13_0.0-0.1	Sediment	15/08/2019	671915	S19-Au25383	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
BH014 0.2-0.3	Fill	14/08/2019	671628	S19-Au23504	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15 0.0-0.1	Fill	14/08/2019	671628	S19-Au23505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15 0.4-0.5	Natural	14/08/2019	671628	S19-Au23506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16 0.0-0.1	Fill	14/08/2019	671628	S19-Au23507	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17 0.0-0.1	Fill	14/08/2019	671628	S19-Au23508	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
TP18 0.0-0.1	Fill	14/08/2019	671628	S19-Au23568	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
QC07	TP18 0.0-0.1	14/08/2019	671628	S19-Au25918	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC07	TP18 0.0-0.1	14/08/2019	671628	S19-Au25918	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP18 1.4-1.5	Natural	14/08/2019	671628	S19-Au23569	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP19 0.0-0.1	Fill	13/08/2019	671628	S19-Au23535	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP19 0.4-0.5	Fill	13/08/2019	671628	S19-Au23536	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP19 1.4-1.5	Fill	13/08/2019	671628	S19-Au23537	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP19 2.4-2.5	Fill	13/08/2019	671628	S19-Au23538	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP20_0.9-1.0	Fill	13/08/2019	671221	S19-Au20145	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
TP20_3.4-3.5	Natural	13/08/2019	671221	S19-Au20146	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP21 0.0-0.1	Fill	14/08/2019	671628	S19-Au23570	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP21 0.9-1.0	Fill	14/08/2019	671628	S19-Au23571	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22 0.0-0.1	Fill	14/08/2019	671628	S19-Au23479	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22 0.9-1.0	Fill	14/08/2019	671628	S19-Au23480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP23 0.0-0.1	Fill	14/08/2019	671628	S19-Au23572	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP23 0.3-0.4	Fill	14/08/2019	671628	S19-Au23573	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP23 2.9-3.0	Fill	14/08/2019	671628	S19-Au23574	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP24 0.0-0.05	Fill	14/08/2019	671628	S19-Au23575	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP24 1.4-1.5	Fill	14/08/2019	671628	S19-Au23576	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP24 3.4-3.5	Fill	14/08/2019	671628	S19-Au23577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH25/MW04 0.0-0.1	Natural	14/08/2019	671628	S19-Au23481	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC12		14/08/2019	671628	S19-Au23567	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QA012		14/08/2019	224101	224101-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH25/MW04 0.9-1.0	Natural	14/08/2019	671628	S19-Au23483	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH25/MW04 5.5-5.6	Natural	14/08/2019	671628	S19-Au23484	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH26 0.0-0.1	Fill	14/08/2019	671628	S19-Au23485	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH27 0.0-0.1	Fill	13/08/2019	671628	S19-Au23546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP28 0.4-0.5	Fill	14/08/2019	671628	S19-Au23579	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH29 0.0-0.1	Fill	14/08/2019	671628	S19-Au23486	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH29 0.4-0.5	Natural	14/08/2019	671628	S19-Au23487	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC10	BH29 0.4-0.5	14/08/2019	671628	S19-Au23556	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QA10	BH29 0.4-0.5	14/08/2019	224101	224101-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH30 0.0-0.1	Fill	14/08/2019	671628	S19-Au23489	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
BH30 0.4-0.5	Fill	14/08/2019	671628	S19-Au23490	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC11	BH30 0.4-0.5	14/08/2019	671628	S19-Au23557	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QA11	BH30 0.4-0.5	14/08/2019	224101	224101-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH31 0.0-0.1	Fill	14/08/2019	671628	S19-Au23491	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH31 1.4-1.5	Natural	14/08/2019	671628	S19-Au23492	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH32 0.0-0.1	Fill	14/08/2019	671628	S19-Au23580	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP32 0.4-0.5	Fill	14/08/2019	671628	S19-Au23581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP32 1.4-1.5	Fill	14/08/2019	671628	S19-Au23582	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP33_0.9-1.0	Fill	12/08/2019	671221	S19-Au20168	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05

Table A(1) - Soil Analytical Data
Project Number: 56387
Project Name: Doyalson DSI

	Organochlorine Pesticides																									Chlorinated Alkanes																	
	4,4-DDE	Aldrin	Aldrin + Dieldrin (Sum of Total)	alpha-BHC	alpha-Chlordane	beta-BHC	Chlordane	DDD	DDT	Dieldrin	DDT+DDE+DDD (Sum of Total)	delta-BHC	Endosulfan alpha	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	gamma-Chlordane	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Carbon tetrachloride	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05		0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	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
Site Specific EILs (Fill)									180																																	
Site Specific EILs (Natural)									180																																	
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																																										
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil																																										
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																																										
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Fine																																										
NEPM 2013 Soil HIL A			6				50				240					10				6			300	20																			
NEPM 2013 Soil Clay - Saturation Limit																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 2 to <4m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 4m+																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 1 to <2m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 2 to <4m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 4m+																																										

Sample ID	Soil Description	Sample Date	Lab Report	Sample Code																																								
BH34 0.9-1.0	Fill	14/08/2019	671628	S19-Au23494	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP35 0.0-0.1	Fill	14/08/2019	671628	S19-Au23583	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP35 1.9-2.0	Fill	14/08/2019	671628	S19-Au23584	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP35 4.2-4.3	Natural	14/08/2019	671628	S19-Au23585	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP36 0.0-0.15	Fill	14/08/2019	671628	S19-Au23588	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP36 1.4-1.5	Fill	14/08/2019	671628	S19-Au23589	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
BH37_0.0-0.1	Fill	15/08/2019	671915	S19-Au25384	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
BH38/MW05 0.0-0.1	Fill	13/08/2019	671628	S19-Au23542	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH38/MW05 0.2-0.3	Fill	13/08/2019	671628	S19-Au23543	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH39 0.0-0.1	Fill	13/08/2019	671628	S19-Au23544	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
BH39 0.4-0.5	Fill	13/08/2019	671628	S19-Au23545	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP40 0.0-0.1	Natural	14/08/2019	671628	S19-Au23591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP40 0.9-1.0	Natural	14/08/2019	671628	S19-Au23592	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP41 0.0-0.1	Fill	14/08/2019	671628	S19-Au23593	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP41 0.3-0.4	Fill	14/08/2019	671628	S19-Au23594	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP42 0.0-0.1	Fill	14/08/2019	671628	S19-Au23595	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
QC06	TP42 0.0-0.1	14/08/2019	671628	S19-Au23596	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
QA06	TP42 0.0-0.1	14/08/2019	224101	224101-6	<0.1	<0.1	<0.2	<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	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
TP43_0.0-0.1	Reworked Natural	12/08/2019	671221	S19-Au20169	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP44_0.0-0.1	Fill	12/08/2019	671221	S19-Au20170	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP44_0.4-0.5	Fill	12/08/2019	671221	S19-Au20171	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP45_0.0-0.1	Natural	12/08/2019	671221	S19-Au20172	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP46_0.4-0.5	Natural	12/08/2019	671221	S19-Au20174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP47_0.0-0.1	Natural	12/08/2019	671221	S19-Au20175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP48_0.0-0.1	Natural	12/08/2019	671221	S19-Au20177	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP49_0.4-0.5	Fill	12/08/2019	671221	S19-Au20179	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP50_0.0-0.1	Fill	12/08/2019	671221	S19-Au20180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP51_0.0-0.1	Fill	12/08/2019	671221	S19-Au20154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP52_0.0-0.5	Fill	12/08/2019	671221	S19-Au20166	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	-	<2.5	<2.5	<2.5	-	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
TP53_0.9-1.0	Fill	12/08/2019	671221	S19-Au20165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP54 0.0-0.1	Fill	14/08/2019	671628	S19-Au23558	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP54 1.4-1.5	Natural	14/08/2019	671628	S19-Au23559	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC08	TP54 1.4-1.5	14/08/2019	671628	S19-Au23560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QA08	TP54 1.4-1.5	14/08/2019	224101	224101-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP55 0.0-0.1	Natural	14/08/2019	671628	S19-Au23561	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP55 0.9-1.0	Natural	14/08/2019	671628	S19-Au23562	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH056_0.0-0.1	Natural	15/08/2019	671915	S19-Au25521	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH057_0.4-0.5	Natural	15/08/2019	671915	S19-Au25522	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH058_0.0-0.1	Natural	15/08/2019	671915	S19-Au25523	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH59_0.0-0.1	Natural	15/08/2019	671915	S19-Au25381	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
TP60_0.0-0.1	Natural	12/08/2019	671221	S19-Au20181	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP61_0.0-0.1	Natural	12/08/2019	671221	S19-Au20182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP61_0.4-0.5	Natural	12/08/2019	671221	S19-Au20183	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
TP62_0.0-0.1	Natural	12/08/2019	671221	S19-Au20184	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP63_0.4-0.5	Fill	12/08/2019	671221	S19-Au20157	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP64_0.0-0.1	Fill	12/08/2019	671221	S19-Au20159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
BH65_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25387	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH66_0.3-0.4	Reworked Natural	15/08/2019	671915	S19-Au25388	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH67_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25389	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH068_0.4-0.5	Natural	15/08/2019	671915	S19-Au25519	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH069_0.0-0.1	Natural	15/08/2019	671915	S19-Au25520	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH70/MW08 0.0-0.1	Fill	13/08/2019	671628	S19-Au23540	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
QC03	BH70/MW08 0.0-0.1	13/08/2019	671628	S19-Au23541	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
QA03	BH70/MW08 0.0-0.1	14/08/2019	224101	224101-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
BH71_0.0-0.1	Fill	15/08/2019	671915	S19-Au25382	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
TP072_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25391	0.21	<0.05	<0.05	<0.05	-	<0.05	<0.1	0.22	0.46	<0.05	0.89	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP072_0.4-0.5	Natural	15/08/2019	671915	S19-Au25392	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP073_0.0-0.1	Fill	15/08/2019	671915	S19-Au25398	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP073_0.4-0.5	Natural	15/08/2019	671915	S19-Au25399	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP074_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25407	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
TP075_0.2-0.3	Fill	15/08/2019	671915	S19-Au25408	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP76_0.2-0.3	Reworked Natural	15/08/2019	671915	S19-Au25377	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH77_0.0-0.1	Fill	15/08/2019	671915	S19-Au25385	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
BH078_0.0-0.1	Fill	15/08/2019	671915	S19-Au25524	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP079_0.0-0.1	Reworked Natural	16/08/2019	671915	S19-Au25551	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH80_0.0-0.1	Natural	15/08/2019	671915	S19-Au25386	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH081_0.0-0.1	Natural	15/08/2019	671915	S19-Au25515	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP082_0.0-0.1	Fill	15/08/2019	671915	S19-Au25415	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP082_1.2-1.3	Reworked Natural	15/08/2019	671915	S19-Au25416	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP083_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25396	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
TP084_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25393	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP085_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP086_0.0-0.1	Sediment	15/08/2019	671915	S19-Au25530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP87_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25376	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
TP88_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25378	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP88_0.2-0.3	Reworked Natural	15/08/2019	671915	S19-Au25379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP089_0.0-0.1	Reworked Natural	16/08/2019	671915	S19-Au25547	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP090_0.0-0.1	Reworked

Table A(1) - Soil Analytical Data
Project Number: 56387
Project Name: Doyalson DSI

	Organochlorine Pesticides																								Chlorinated Alkanes																	
	4,4-DDE	Aldrin	Aldrin + Dieldrin (Sum of Total)	Alpha-BHC	Alpha-Chlordane	beta-BHC	Chlordane	DDD	DDT	Dieldrin	DDT+DDE+DDD (Sum of Total)	delta-BHC	Endosulfan alpha	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	gamma-Chlordane	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Carbon tetrachloride	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05		0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05		0.05	0.05	0.05	0.05	1	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
Site Specific EILs (Fill)									180																																	
Site Specific EILs (Natural)									180																																	
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																																										
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil																																										
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																																										
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Fine																																										
NEPM 2013 Soil HIL A			6				50				240					10				6			300	20																			
NEPM 2013 Soil Clay - Saturation Limit																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 2 to <4m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 4m+																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 1 to <2m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 2 to <4m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 4m+																																										

Sample ID	Soil Description	Sample Date	Lab Report	Sample Code																																									
TP094_0.4-0.5	Natural	15/08/2019	671915	S19-Au25423	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP095_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25395	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP096_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP097_0.2-0.3	Fill	15/08/2019	671915	S19-Au25542	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP097_0.4-0.5	Fill	15/08/2019	671915	S19-Au25529	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH98_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25375	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP099_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25527	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP099_0.2-0.3	Reworked Natural	15/08/2019	671915	S19-Au25528	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP100_0.0-0.1	Reworked Natural	16/08/2019	671915	S19-Au25548	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP101_0.0-0.1	Reworked Natural	16/08/2019	671915	S19-Au25545	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH102_0.0-0.1	Natural	16/08/2019	671915	S19-Au25512	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH103_0.0-0.1	Natural	15/08/2019	671915	S19-Au25517	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP104_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25428	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP104_0.2-0.3	Reworked Natural	15/08/2019	671915	S19-Au25429	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP105_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25426	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP105_0.4-0.5	Reworked Natural	15/08/2019	671915	S19-Au25427	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP106_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25400	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP106_0.2-0.3	Reworked Natural	15/08/2019	671915	S19-Au25401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP106_0.4-0.5	Reworked Natural	15/08/2019	671915	S19-Au25503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP107_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25402	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP108_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25541	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH109_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25537	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP110_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25372	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP111_0.0-0.1	Reworked Natural	16/08/2019	671915	S19-Au25549	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP112_0.0-0.1	Reworked Natural	16/08/2019	671915	S19-Au25544	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH113_0.3-0.4	Natural	15/08/2019	671915	S19-Au25514	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
BH114_0.0-0.1	Natural	15/08/2019	671915	S19-Au25513	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH115/MW06 0.0-0.1	Fill	13/08/2019	671221	S19-Au20130	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
BH115/MW06 0.2-0.3	Reworked Natural	13/08/2019	671221	S19-Au20131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP116_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25430	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP117_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25504	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP118_0.2-0.3	Reworked Natural	15/08/2019	671915	S19-Au25509	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP119_0.0-0.1	Reworked Natural	16/08/2019	671915	S19-Au25554	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP120_0.2-0.3	Reworked Natural	16/08/2019	671915	S19-Au25539	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP121_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25373	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP121_0.2-0.3	Reworked Natural	15/08/2019	671915	S19-Au25374	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP122_0.0-0.1	Reworked Natural	16/08/2019	671915	S19-Au25550	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP123_0.0-0.1	Reworked Natural	16/08/2019	671915	S19-Au25543	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP124_0.0-0.1	Reworked Natural	16/08/2019	671915	S19-Au25553	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP125_0.0-0.1	Reworked Natural	16/08/2019	671915	S19-Au25552	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP126_0.0-0.1	Fill	15/08/2019	671915	S19-Au25505	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP126_0.2-0.3	Fill	15/08/2019	671915	S19-Au25506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP127_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25431	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP127_0.2-0.3	Reworked Natural	15/08/2019	671915	S19-Au25410	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP128_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25507	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP129_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25508	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP130_0.4-0.5	Reworked Natural	15/08/2019	671915	S19-Au25540	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP131_0.2-0.3	Reworked Natural	15/08/2019	671915	S19-Au25538	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP132_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25526	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP133_0.0-0.1	Reworked Natural	16/08/2019	671915	S19-Au25531	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP134_0.0-0.1	Reworked Natural	16/08/2019	671915	S19-Au25535	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH135/MW01 0.2-0.3	Natural	13/08/2019	671221	S19-Au20134	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH135/MW07 0.0-0.1	Reworked Natural	13/08/2019	671221	S19-Au20133	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP136_0.0-0.1	Reworked Natural	16/08/2019	671915	S19-Au25536	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP137_0.0-0.1	Fill	12/08/2019	671221	S19-Au20162	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP137_0.4-0.5	Natural	12/08/2019	671221	S19-Au20163	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP138_0.0-0.1	Fill	12/08/2019	671221	S19-Au20161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP139_0.0-0.1	Fill	12/08/2019	671221	S19-Au20160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP140_0.0-0.1	Fill	12/08/2019	671221	S19-Au20158	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP141_0.0-0.1	Fill	12/08/2019	671221	S19-Au20155	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP141_0.9-1.0	Fill	12/08/2019	671221	S19-Au20156	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH142 0.2-0.3	Fill	12/08/2019	671221	S19-Au20128	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH143 0.0-0.1	Fill	12/08/2019	671221	S19-Au20129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP144 0.0-0.1	Fill	13/08/2019	671628	S19-Au23522	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP144 0.9-1.0	Fill	13/08/2019	671628	S19-Au23523	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP144 1.9-2.0	Fill	13/08/2019	671628	S19-Au23524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP144 2.9-3.0	Fill	13/08/2019	671628	S19-Au23525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP145 0.0-0.1	Fill	13/08/2019	671628	S19-Au23530	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP145 0.4-0.5	Fill	13/08/2019	671628	S19-Au23531	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP145 0.9-1.0	Fill	13/08/2019	671628	S19-Au23532	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP145 2.4-2.5	Fill	13/08/2019	671628	S19-Au23533	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP145 3.4-3.5	Fill	13/08/2019	671628	S19-Au23534	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP146 0.0-0.1	Fill	13/08/2019	671628	S19-Au23526	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP146 0.3-0.4	Fill	13/08/2019	671628	S19-Au23527	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<1	<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
TP146 0.9-1.0	Fill	13/08/2019	671628	S19-Au23528	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP146 1.9-2.0

Table A(1) - Soil Analytical Data
Project Number: 56387
Project Name: Doyalson DSI

	Organochlorine Pesticides																								Chlorinated Alkanes																			
	4,4-DDE	Aldrin	Aldrin + Dieldrin (Sum of Total)	alpha-BHC	alpha-Chlordane	beta-BHC	Chlordane	DDD	DDT	Dieldrin	DDT+DDE+DDD (Sum of Total)	delta-BHC	Endosulfan alpha	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	gamma-Chlordane	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Carbon tetrachloride	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05		0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05		0.05	0.05	0.05	0.05	1	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
Site Specific EILs (Fill)									180																																		
Site Specific EILs (Natural)									180																																		
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																																										
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil																																										
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																																										
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Fine																																										
NEPM 2013 Soil HIL A			6				50				240					10				6			300	20																			
NEPM 2013 Soil Clay - Saturation Limit																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 2 to <4m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 4m+																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 1 to <2m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 2 to <4m																																										
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 4m+																																										

Sample ID	Soil Description	Sample Date	Lab Report	Sample Code																																											
BH152 0.0-0.1	Sediment	14/08/2019	671628	S19-Au23548	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH152 2.9-3.0	Fill	14/08/2019	671628	S19-Au23549	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
BH152 6.4-6.5	Natural	14/08/2019	671628	S19-Au23550	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH153 0.0-0.1	Fill	14/08/2019	671628	S19-Au23551	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH153 1.9-2.0	Fill	14/08/2019	671628	S19-Au23552	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH153 3.9-4.0	Fill	14/08/2019	671628	S19-Au23553	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP154_0.0-0.1	Fill	14/08/2019	673401	M19-Au37867	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC09	TP154_0.0-0.1	14/08/2019	671628	S19-Au23566	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QA09	TP154_0.0-0.1	14/08/2019	224101	224101-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP155_0.0-0.05	Fill	15/08/2019	671915	S19-Au25413	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP155_0.05-0.15	Fill	15/08/2019	671915	S19-Au25414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP156_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25424	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
TP156_0.4-0.5	Reworked Natural	15/08/2019	671915	S19-Au25425	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP157_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP158_0.0-0.1	Fill	15/08/2019	671915	S19-Au25419	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP158_0.9-1.0	Fill	15/08/2019	671915	S19-Au25390	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
TP159_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25394	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP160_0.4-0.5	Natural	15/08/2019	671915	S19-Au25397	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP161_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25403	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP161_0.4-0.5	Natural	15/08/2019	671915	S19-Au25404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP162_0.0-0.1	Reworked Natural	15/08/2019	671915	S19-Au25417	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<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
TP162_0.2-0.3	Reworked Natural	15/08/2019	671915	S19-Au25418	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH163_0.0-0.1	Fill	16/08/2019	671915	S19-Au25534	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
BH164_0.0-0.1	Fill	16/08/2019	671915	S19-Au25532	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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
BH165_0.2-0.3	Fill	16/08/2019	671915	S19-Au25533	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<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

Statistical Summary

Number of Results	103	103	103	103	5	103	98	103	103	103	103	103	103	103	103	103	103	98	5	103	103	103	103	98	112	112	112	112	112	112	6	112	112	112	6	112	112	112	112	112	106	112
Number of Detects	1	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Minimum Detect	0.21	ND	ND	ND	ND	ND	ND	0.22	0.46	ND	0.89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	0.21	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	0.22	0.46	<0.1	0.89	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<1	<2.5	<2.5	<2.5	<1	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Maximum Detect	0.21	ND	ND	ND	ND	ND	ND	0.22	0.46	ND	0.89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.028	0.026	0.029	0.026	0.05	0.026	0.05	0.028	0.03	0.026	0.035	0.026	0.026	0.026	0.026	0.026	0.026	0.025	0.05	0.026	0.026	0.026	0.026	0.5	0.27	0.27	0.27	0.27	0.27	0.27	0.5	0.27	0.27	0.27	0.5	0.27	0.27	0.27	0.27	0.27	0.26	0.27
Median Concentration	0.025	0.025	0.025	0.025	0.05	0.025	0.05	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.05	0.025	0.025	0.025	0.025	0.5	0.25	0.25	0.25	0.25	0.25	0.25	0.5	0.25	0.25	0.25	0.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Standard Deviation	0.019	0.0054	0.016	0.0054	0	0.0054	0	0.02	0.043	0.0054	0.085	0.0054	0.0054	0.0054	0.0054	0.0054	0.0054	0	0	0.0054	0.0054	0.0054	0.0054	0	0.11	0.11	0.11	0.11	0.11	0.11	0	0.11	0.11	0.11	0	0.11	0.11	0.11	0.11	0.11	0.097	0.11
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments
#1:ESLs are of low reliability.
#2:ESLs are of moderate reliability.
#3:Management limits of BTEX and naphthalene are not available, hence should not be subtracted from the relevant fra
#4:Limits applied after consideration of relevant ESLs and HSLs
#5:To obtain F2 subtract naohthalene from >C10-C16. Exceedence quantifies further interpretation.
#6:To obtain F1 subtract the sum of BTEX from C6-C10. Exceedence quantifies further interpretation.
#7:Exceedence quantifies further interpretation.
#8:Key limitations of HSL should be referred to prior to application in Friebel and Nadebaum (2011b and 2011d).
#9:TV adopted from Chromium (VI)
#10:Assumptions of HSL are presented in Friebel and Nadebaum (2011a and 2011b).
#11:Refer to HSL and soil saturation concentration limit.
#12:Sensitive setting HSL A & HSL B Sand 0m to <1m criteria adopted. Exceedence quantifies further interpretation.
#13:Refer to Section 8.2 and Appendix J in Friebel and Nadebaum (2011a).
#14:TV maybe be multiplied by a factor to account for biodegradation of vapour
#15:HIL relates to non-dioxin-like PCBs only. If PCB source is suspected a site-specific assessment should be untertaken
#16:To obtain F2 subtract naohthalene from >C10-C16.
#17:To obtain F1 subtract the sum of BTEX from C6-C10.

Table A(1) - Soil Analytical Data
Project Number: 56387
Project Name: Doyalson DSI

	Chlorinated Alkenes														Solvents	Polychlorinated Biphenyls									Monocyclic Aromatic Hydrocarbons												Miscellaneous Hydrocarbons							Chlorinated Benzenes							Trihalomethanes			
	1,1-dichloroethene	1,1-dichloropropene	1,3-dichloropropene	2-chlorotoluene	3-chloropropene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	2-Propanone (Acetone)	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	4-Isopropyl toluene	Bromobenzene	Isopropylbenzene	n-butyl benzene	n-propyl benzene	sec-butyl benzene	Styrene	Tert-butyl benzene	Total MAH*	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromomethane	Cyclohexane	Dibromomethane	Iodomethane	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	Hexachlorobenzene	Bromodichloromethane	Chloroform	Dibromochloromethane	Tribromomethane
	mg/kg	mg/kg	mg/kg

Table A(1) - Soil Analytical Data
Project Number: 56387
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	Chlorinated Alkenes													Solvents	Polychlorinated Biphenyls								Monocyclic Aromatic Hydrocarbons										Miscellaneous Hydrocarbons							Chlorinated Benzenes							Trihalomethanes			
	1,1-dichloroethene	1,1-dichloropropene	1,3-dichloropropene	2-chlorotoluene	3-chloropropene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	2-Propanone (Acetone)	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	4-Isopropyl toluene	Bromobenzene	Isopropylbenzene	n-butyl benzene	n-propyl benzene	sec-butyl benzene	Styrene	Tert-butyl benzene	Total MAH*	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromomethane	Cyclohexane	Dibromomethane	Iodomethane	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	Hexachlorobenzene	Bromodichloromethane	Chloroform	Dibromochloromethane	Tribromomethane
	mg/kg	mg/kg	mg/kg

Table A(1) - Soil Analytical Data
Project Number: 56387
Project Name: Doyalson DSI

	Chlorinated Alkenes													Solvents	Polychlorinated Biphenyls								Monocyclic Aromatic Hydrocarbons										Miscellaneous Hydrocarbons							Chlorinated Benzenes							Trihalomethanes			
	1,1-dichloroethene	1,1-dichloropropene	1,3-dichloropropene	2-chlorotoluene	3-chloropropene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	2-Propanone (Acetone)	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	4-Isopropyl toluene	Bromobenzene	Isopropylbenzene	n-butyl benzene	n-propyl benzene	sec-butyl benzene	Styrene	Tert-butyl benzene	Total MAH*	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromomethane	Cyclohexane	Dibromomethane	Iodomethane	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	Hexachlorobenzene	Bromodichloromethane	Chloroform	Dibromochloromethane	Tribromomethane
	mg/kg	mg/kg	mg/kg

Table A(1) - Soil Analytical Data
Project Number: 56387
Project Name: Doyalson DSI

	Chlorinated Alkenes													Solvents	Polychlorinated Biphenyls								Monocyclic Aromatic Hydrocarbons										Miscellaneous Hydrocarbons							Chlorinated Benzenes							Trihalomethanes			
	1,1-dichloroethene	1,1-dichloropropene	1,3-dichloropropene	2-chlorotoluene	3-chloropropene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	2-Propanone (Acetone)	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	4-Isopropyl toluene	Bromobenzene	Isopropylbenzene	n-butyl benzene	n-propyl benzene	sec-butyl benzene	Styrene	Tert-butyl benzene	Total MAH*	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromomethane	Cyclohexane	Dibromomethane	Iodomethane	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	Hexachlorobenzene	Bromodichloromethane	Chloroform	Dibromochloromethane	Tribromomethane
	mg/kg	mg/kg	mg/kg

Appendix A Asbestos in Air Monitoring Report

23 October 2019

Doyalson Wyee RSL Club Ltd
C/O
Anna Wang
Urbis Pty Ltd
Via email: awang@urbis.com.au

AMR001: Airborne Asbestos Fibre Monitoring Report
80 Pacific Highway, Doyalson, NSW 2262

Dear Anna,

Please find as **Attachment 1,** the airborne asbestos fibre monitoring results for the air monitoring undertaken during works completed at the Doyalson Wyee RSL Club located at 80 Pacific Highway, Doyalson, NSW on **Tuesday 22 October 2019**.

All air monitoring was completed in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres* [NOHSC: 3003(2005)], with NATA certification applying to all sample collection, handling and analytical procedures.

All reported results were satisfactory and conform with the minimum action level of <0.01 fibres /mL for control monitoring as outlined in:

- Work, Health and Safety (2017) Regulation; and
- Safework Australia (2018) Code of Practice – *How to Safely Remove Asbestos.*

If you have any questions regarding these results, please feel free to contact the undersigned on 02 8245 0300 or by email msamuel@jbsg.com.au.

Yours sincerely:

Michael Samuel
Operations Manager – Hazardous Materials
Licensed Asbestos Assessor (LAA 000157)
JBS&G Australia Pty Ltd

Attachment 1 – Asbestos Air Monitoring Results

Certificate of Analysis

eurofins | Environment Testing

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Ryan Lill
Report	683929-AFC
Project Name	DOYALSON HHRA
Project ID	57611
Received Date	Oct 22, 2019
Date Reported	Oct 23, 2019

METHODOLOGY:

Asbestos Sampling	Sampling as per the National Occupational Health & Safety Commission - Guidance Note on The Membrane Filter Method For Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC:3003(2005)]
Pump Calibration	Defender 520M: Calibrated against National Institute of Standards & Technology (NIST) SOP 13 Standard Operating Procedure for Calibration of Volumetric Ware, Gravimetric Method utilising a 1000 mL burette with a digital stop watch.
Asbestos Counting	Conducted in accordance with the National Occupational Health & Safety Commission - Guidance Note on The Membrane Filter Method For Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC:3003(2005)] and in-house Method LTM-ASB-8010.

Project Name DOYALSON HHRA
Project ID 57611
Date Sampled Oct 22, 2019
Report 683929-AFC

Eurofins Sample No.	Client Sample ID	Pump ID	Location	Start (time)	End (time)	Start Flow Rate (L/min)	End Flow Rate (L/min)	Result (Fibres/Fields)	Result (Fibres/mL)
19-Oc33662	DE285546	BLANK	BLANK	--	--	--	--	0/100	--
19-Oc33663	DE285664	AC032	ON FLAGGING NEAR BUILDING	8:04	14:26	2.0	2.0	0/100	< 0.01
19-Oc33664	DE299253	AC036	WESTERN BOUNDARY OF FLAGGING	8:07	14:28	2.0	1.9	1/100	< 0.01
19-Oc33665	DE299237	AC112	NORTH EASTERN ON FENCE	8:12	14:31	2.0	2.0	0/100	< 0.01
19-Oc33666	DE299262	AC027	EASTERN ON FENCE	8:14	14:37	2.0	2.0	1/100	< 0.01
19-Oc33667	DE299383	AC006	SOUTHERN BOUNDARY OF AREA ON FENCE	8:15	14:39	2.0	1.8	0/100	< 0.01

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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-8010	Sydney	Oct 22, 2019	Indefinite
Asbestos - LTM-ASB-8010	Sydney	Oct 22, 2019	Indefinite

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ABN – 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

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

Sydney
Unit F3, Building F
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
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**		**Received:**	Oct 22, 2019 5:30 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	683929	**Due:**	Oct 23, 2019
		Phone:	02 8245 0300	**Priority:**	Overnight
		Fax:		**Contact Name:**	Ryan Lill
Project Name:	DOYALSON HHRA				
Project ID:	57611				

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos (concentration of fibres in air)
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	DE285546	Oct 22, 2019		Air	S19-Oc33662	X
2	DE285664	Oct 22, 2019	2:26PM	Air	S19-Oc33663	X
3	DE299253	Oct 22, 2019	2:28PM	Air	S19-Oc33664	X
4	DE299237	Oct 22, 2019	2:31PM	Air	S19-Oc33665	X
5	DE299262	Oct 22, 2019	2:37PM	Air	S19-Oc33666	X
6	DE299383	Oct 22, 2019	2:39PM	Air	S19-Oc33667	X
Test Counts						6

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

Dry	Sample is dried by heating prior to analysis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	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)
NEPM	National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended)
ACM	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.
AF	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”.
FA	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.
Friable	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.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres in the matrix.

Comments

Volume Measurement : Ryan Lill, JBS & G Australia (NSW) P/L, has been trained by Eurofins and they conducted the sampling in accordance with the National Occupational Health & Safety Commission - Guidance Note on The Membrane Filter Method For Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC:3003(2005)]methodology. Sampling pumps used by JBS & G Australia (NSW) P/L were calibrated by Eurofins | mgt and therefore volume measurements contained in this report are traceable back to Eurofins | mgt. Eurofins | mgt are responsible for all data contained in this report.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
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	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Chamath JHM Annakkage	Senior Analyst-Asbestos (NSW)

Authorised by:

Sayeed Abu	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.

Appendix B Field Decontamination Records

Field Equipment Calibration and Decontamination

JBS&G

PROJECT NAME: HHRA Doyalson	PROJECT NO: 57611
FIELD DATES: 22/10/19	FIELD STAFF: RL/MS

CALIBRATION SUMMARY
EQUIPMENT: —
CALIBRATION STANDARD: —

DATE	TIME	READING (ppmv)	COMMENTS

DECONTAMINATION SUMMARY			
EQUIPMENT: Hand Augers x2			
1. Was the equipment decontaminated appropriately prior to sampling at each location?	(Y)	N	NA
2. Was excess soil removed by scraping, brushing or wiping with disposable towels?	(Y)	N	NA
3. Was the equipment contaminated with grease, tar or similar material? If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y Y	N N	(NA)
4. Was phosphate-free detergent used to wash the equipment?	~~Y~~	N	(NA)
5. Was the equipment rinsed with clean water?	(Y)	N	NA
6. Was the equipment then rinsed with deionised water?	(Y)	N	NA
7. Were all sample containers cleaned and acid or solvent washed prior to sample collection?	Y	N	(NA)
WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS. Fresh nitrile gloves at each sampling location and depth.			

Appendix C Detailed Laboratory Analytical Reports

#683935

JBS&G

CHAIN OF CUSTODY

PROJECT NO.: 57611	LABORATORY BATCH NO.:
PROJECT NAME: Doyalson HHRA	SAMPLERS: RL/MS
DATE NEEDED BY: Strandard TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) ......rlill......@jbsg.com.au; (3) ......mswinfield......@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Asbestos	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
HHRA_BH41_0.00-0.15	Soil	22/10/19		1x 500 ml Bag		x		X	
HHRA_BH41_0.15-0.30	↓	↓		↓		↓		↓	
HHRA_BH42_0.00-0.15									
HHRA_BH42_0.15-0.30									
HHRA_BH43_0.00-0.15									
HHRA_BH43_0.15-0.30									
HHRA_BH44_0.00-0.15									
HHRA_BH44_0.15-0.30									
HHRA_BH45_0.00-0.15									
HHRA_BH45_0.15-0.30									
HHRA_BH10_0.00-0.15									
HHRA_BH10_0.15-0.30									
HHRA_BH20_0.00-0.15									
HHRA_BH20_0.15-0.30									
HHRA_BH30_0.00-0.15									
HHRA_BH30_0.15-0.30									
HHRA_BH40_0.00-0.15									
HHRA_BH40_0.15-0.30	↓	↓		↓		↓		↓	
HHRA_QC05	↓	↓		↓		↓		↓	

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: [signature] DATE: 22/10/19 5:38pm OF: Envirolab	COOLER SEAL – Yes....... No .... Intact .... Broken ....
OF: JBS&G	TRANSPORT CO.		COOLER TEMP .... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes....... No .... Intact .... Broken ....
OF:	TRANSPORT CO	OF:	COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; **C = Sodium Hydroxide** Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 57611
PROJECT NAME: Doyalson HHRA
DATE NEEDED BY: Strandard TAT
PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) rlill@jbsg.com.au; (3) mswinfield@jbsg.com.au
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

LABORATORY BATCH NO.:
SAMPLERS: RL/MS
QC LEVEL: NEPM (2013)

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Asbestos	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
HHRA_BH31_0.00-0.15	Soil	22/10/19		1x 500 ml Bag		x		X	
HHRA_BH31_0.15-0.30									
HHRA_BH32_0.00-0.15									
HHRA_BH32_0.15-0.30									
HHRA_BH33_0.00-0.15									
HHRA_BH33_0.15-0.30									
HHRA_BH34_0.00-0.15									
HHRA_BH34_0.15-0.30									
HHRA_BH35_0.00-0.15									
HHRA_BH35_0.15-0.30									
HHRA_BH36_0.00-0.15									
HHRA_BH36_0.15-0.30									
HHRA_BH37_0.00-0.15									
HHRA_BH37_0.15-0.30									
HHRA_BH38_0.00-0.15									
HHRA_BH38_0.15-0.30									
HHRA_BH39_0.00-0.15									
HHRA_BH39_0.15-0.30									
(6) HHRA_QC04									

RELINQUISHED BY:
NAME: Ryan DATE: 22.10.19
OF: JBS&G
NAME: DATE:
OF:

METHOD OF SHIPMENT:
CONSIGNMENT NOTE NO.
TRANSPORT CO.
CONSIGNMENT NOTE NO.
TRANSPORT CO

RECEIVED BY:
NAME: Georgie Ford DATE: 22/10/19 5:38pm
OF: Eurofins
NAME: DATE:
OF:

FOR RECEIVING LAB USE ONLY:
COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C
COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

CHAIN OF CUSTODY

PROJECT NO.: 57611	LABORATORY BATCH NO.:
PROJECT NAME: Doyalson HHRA	SAMPLERS: RL/MS
DATE NEEDED BY: Strandard TAT	QC LEVEL: NEPM (2013)
PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688	
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) rlill@jbsg.com.au; (3) mswinfield@jbsg.com.au	

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Asbestos	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
HHRA_BH11_0.00-0.15	Soil	22/10/19		1x 500 ml Bag		x		x	
HHRA_BH11_0.15-0.30									
HHRA_BH12_0.00-0.15									
HHRA_BH12_0.15-0.30									
HHRA_BH13_0.00-0.15									
HHRA_BH13_0.15-0.30									
HHRA_BH14_0.00-0.15									
HHRA_BH14_0.15-0.30									
HHRA_BH15_0.00-0.15									
HHRA_BH15_0.15-0.30									
HHRA_BH16_0.00-0.15									
HHRA_BH16_0.15-0.30									
HHRA_BH17_0.00-0.15									
HHRA_BH17_0.15-0.30									
HHRA_BH18_0.00-0.15									
HHRA_BH18_0.15-0.30									
HHRA_BH19_0.00-0.15									
HHRA_BH19_0.15-0.30									
HHRA_QC02									

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: Ryan DATE: 22.10.19 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: DATE: 22/10/19 5:33pm OF: Eurofins	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium **Hydroxide Prsvd;** VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 57611	LABORATORY BATCH NO.:
PROJECT NAME: Doyalson HHRA	SAMPLERS: RL/MS
DATE NEEDED BY: Strandard TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) rlill@jbsg.com.au; (3) mswinfield@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Asbestos	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
HHRA_BH01_0.00-0.15	Soil	22/10/19		1x 500 ml Bag		x		x	
HHRA_BH01_0.15-0.30									
HHRA_BH02_0.00-0.15									
HHRA_BH02_0.15-0.30									
HHRA_BH03_0.00-0.15									
HHRA_BH03_0.15-0.30									
HHRA_BH04_0.00-0.15									
HHRA_BH04_0.15-0.30									
HHRA_BH05_0.00-0.15									
HHRA_BH05_0.15-0.30									
HHRA_BH06_0.00-0.15									
HHRA_BH06_0.15-0.30									
HHRA_BH07_0.00-0.15									
HHRA_BH07_0.15-0.30									
HHRA_BH08_0.00-0.15									
HHRA_BH08_0.15-0.30									
HHRA_BH09_0.00-0.15									
HHRA_BH09_0.15-0.30									
HHRAQC01									

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: Ryan DATE: 22.10.19	CONSIGNMENT NOTE NO.	NAME: Augusta Record DATE: 22/10/19 5:38PM	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: Eurofins	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 57611
PROJECT NAME: Doyalson HHRA
DATE NEEDED BY: Strandard TAT
PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) rlill@jbsg.com.au; (3) mswinfield@jbsg.com.au
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

LABORATORY BATCH NO.:
SAMPLERS: RL/MS
QC LEVEL: NEPM (2013)

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Asbestos	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
HHRA_BH21_0.00-0.15	Soil	22/10/19		1x 500 ml Bag		x		x	
HHRA_BH21_0.15-0.30									
HHRA_BH22_0.00-0.15									
HHRA_BH22_0.15-0.30									
HHRA_BH23_0.00-0.15									
HHRA_BH23_0.15-0.30									
HHRA_BH24_0.00-0.15									
HHRA_BH24_0.15-0.30									
HHRA_BH25_0.00-0.15									
HHRA_BH25_0.15-0.30									
HHRA_BH26_0.00-0.15									
HHRA_BH26_0.15-0.30									
HHRA_BH27_0.00-0.15									
HHRA_BH27_0.15-0.30									
HHRA_BH28_0.00-0.15									
HHRA_BH28_0.15-0.30									
HHRA_BH29_0.00-0.15									
HHRA_BH29_0.15-0.30									
HHRA_QC03.									

RELINQUISHED BY:
NAME: Ryan DATE: 22.10.19
OF: JBS&G
NAME: DATE:
OF:

METHOD OF SHIPMENT:
CONSIGNMENT NOTE NO.
TRANSPORT CO.
CONSIGNMENT NOTE NO.
TRANSPORT CO

RECEIVED BY:
NAME: Jacqueline Reed DATE: 22/10/19 - 5:38PM
OF: Envirolab
NAME: DATE:
OF:

FOR RECEIVING LAB USE ONLY:
COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C
COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; **C** = Sodium **Hydroxide** Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

eurofins | Environment Testing

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

Sydney
Unit F3, Building F
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
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name:	**JBS & G Australia (NSW) P/L**
Contact name:	Ryan Lill
Project name:	DOYALSON HHRA
Project ID:	57611
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Oct 22, 2019 5:38 PM
Eurofins reference:	**683935**

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.

N/A 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.

☒ Split sample sent to requested external lab.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Ursula Long on Phone : or by e.mail: UrsulaLong@eurofins.com

Results will be delivered electronically via e.mail to Ryan Lill - rlill@jbsg.com.au.

Note: A copy of these results will also be delivered to the general JBS & G Australia (NSW) P/L email address.

eurofins | Environment Testing

ABN – 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Melbourne
6 Monterey Road
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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
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: DOYALSON HHRA
Project ID: 57611

Order No.:
Report #: 683935
Phone: 02 8245 0300
Fax:

Received: Oct 22, 2019 5:38 PM
Due: Oct 29, 2019
Priority: 5 Day
Contact Name: Ryan Lill

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	HHRA_BH41_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33829	X
2	HHRA_BH41_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33830	X
3	HHRA_BH42_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33831	X
4	HHRA_BH42_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33832	X
5	HHRA_BH43_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33833	X
6	HHRA_BH43_	Oct 22, 2019		Soil	S19-Oc33834	X

eurofins | Environment Testing

ABN – 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

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

Sydney
Unit F3, Building F
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
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: DOYALSON HHRA
Project ID: 57611

Order No.:
Report #: 683935
Phone: 02 8245 0300
Fax:

Received: Oct 22, 2019 5:38 PM
Due: Oct 29, 2019
Priority: 5 Day
Contact Name: Ryan Lill

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
	0.15-0.30					
7	HHRA_BH44_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33835	X
8	HHRA_BH44_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33836	X
9	HHRA_BH45_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33837	X
10	HHRA_BH45_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33838	X
11	HHRA_BH10_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33839	X
12	HHRA_BH10_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33840	X
13	HHRA_BH20_	Oct 22, 2019		Soil	S19-Oc33841	X

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Project Name: DOYALSON HHRA
Project ID: 57611

Order No.:
Report #: 683935
Phone: 02 8245 0300
Fax:

Received: Oct 22, 2019 5:38 PM
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Contact Name: Ryan Lill

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
	0.00-0.15					
14	HHRA_BH20_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33842	X
15	HHRA_BH30_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33843	X
16	HHRA_BH30_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33844	X
17	HHRA_BH40_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33845	X
18	HHRA_BH40_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33846	X
19	HHRA_QC05	Oct 22, 2019		Soil	S19-Oc33847	X
20	HHRA_BH31_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33848	X

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Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
21	HHRA_BH31_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33849	X
22	HHRA_BH32_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33850	X
23	HHRA_BH32_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33851	X
24	HHRA_BH33_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33852	X
25	HHRA_BH33_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33853	X
26	HHRA_BH34_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33854	X
27	HHRA_BH34_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33855	X

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Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	683935	**Due:**	Oct 29, 2019
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ryan Lill
Project Name:	DOYALSON HHRA				
Project ID:	57611				

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Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
28	HHRA_BH35_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33856	X
29	HHRA_BH35_0.15-0.30	Oct 22, 2019		Soil	S19-Oc33857	X
30	HHRA_BH36_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33858	X
31	HHRA_BH36_0.15-0.30	Oct 22, 2019		Soil	S19-Oc33859	X
32	HHRA_BH37_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33860	X
33	HHRA_BH37_0.15-0.30	Oct 22, 2019		Soil	S19-Oc33861	X
34	HHRA_BH38_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33862	X

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Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
35	HHRA_BH38_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33863	X
36	HHRA_BH39_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33864	X
37	HHRA_BH39_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33865	X
38	HHRA_QC04	Oct 22, 2019		Soil	S19-Oc33866	X
39	HHRA_BH11_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33867	X
40	HHRA_BH11_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33868	X
41	HHRA_BH12_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33869	X
42	HHRA_BH12_	Oct 22, 2019		Soil	S19-Oc33870	X

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Perth Laboratory - NATA Site # 23736						
	0.15-0.30					
43	HHRA_BH13_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33871	X
44	HHRA_BH13_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33872	X
45	HHRA_BH14_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33873	X
46	HHRA_BH14_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33874	X
47	HHRA_BH15_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33875	X
48	HHRA_BH15_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33876	X
49	HHRA_BH16_	Oct 22, 2019		Soil	S19-Oc33877	X

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Perth Laboratory - NATA Site # 23736						
	0.00-0.15					
50	HHRA_BH16_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33878	X
51	HHRA_BH17_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33879	X
52	HHRA_BH17_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33880	X
53	HHRA_BH18_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33881	X
54	HHRA_BH18_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33882	X
55	HHRA_BH19_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33883	X
56	HHRA_BH19_	Oct 22, 2019		Soil	S19-Oc33884	X

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Perth Laboratory - NATA Site # 23736						
	0.15-0.30					
57	HHRA_QC02	Oct 22, 2019		Soil	S19-Oc33885	X
58	HHRA_BH01_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33886	X
59	HHRA_BH01_0.15-0.30	Oct 22, 2019		Soil	S19-Oc33887	X
60	HHRA_BH02_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33888	X
61	HHRA_BH02_0.15-0.30	Oct 22, 2019		Soil	S19-Oc33889	X
62	HHRA_BH03_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33890	X
63	HHRA_BH03_0.15-0.30	Oct 22, 2019		Soil	S19-Oc33891	X

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64	HHRA_BH04_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33892	X
65	HHRA_BH04_0.15-0.30	Oct 22, 2019		Soil	S19-Oc33893	X
66	HHRA_BH05_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33894	X
67	HHRA_BH05_0.15-0.30	Oct 22, 2019		Soil	S19-Oc33895	X
68	HHRA_BH06_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33896	X
69	HHRA_BH06_0.15-0.30	Oct 22, 2019		Soil	S19-Oc33897	X
70	HHRA_BH07_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33898	X

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71	HHRA_BH07_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33899	X
72	HHRA_BH08_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33900	X
73	HHRA_BH08_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33901	X
74	HHRA_BH09_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33902	X
75	HHRA_BH09_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33903	X
76	HHRA_QC01	Oct 22, 2019		Soil	S19-Oc33904	X
77	HHRA_BH21_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33905	X
78	HHRA_BH21_	Oct 22, 2019		Soil	S19-Oc33906	X

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	0.15-0.30					
79	HHRA_BH22_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33907	X
80	HHRA_BH22_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33908	X
81	HHRA_BH23_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33909	X
82	HHRA_BH23_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33910	X
83	HHRA_BH24_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33911	X
84	HHRA_BH24_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33912	X
85	HHRA_BH25_	Oct 22, 2019		Soil	S19-Oc33913	X

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	0.00-0.15					
86	HHRA_BH25_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33914	X
87	HHRA_BH26_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33915	X
88	HHRA_BH26_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33916	X
89	HHRA_BH27_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33917	X
90	HHRA_BH27_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33918	X
91	HHRA_BH28_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33919	X
92	HHRA_BH28_	Oct 22, 2019		Soil	S19-Oc33920	X

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Site # 23736

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**		**Received:**	Oct 22, 2019 5:38 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	683935	**Due:**	Oct 29, 2019
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ryan Lill
Project Name:	DOYALSON HHRA				
Project ID:	57611				

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
	0.15-0.30					
93	HHRA_BH29_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33921	X
94	HHRA_BH29_0.15-0.30	Oct 22, 2019		Soil	S19-Oc33922	X
95	HHRA_QC03	Oct 22, 2019		Soil	S19-Oc33923	X
Test Counts						95

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Ryan Lill
Report	683935-AID
Project Name	DOYALSON HHRA
Project ID	57611
Received Date	Oct 22, 2019
Date Reported	Oct 29, 2019

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 DOYALSON HHRA
Project ID 57611
Date Sampled Oct 22, 2019
Report 683935-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
HHRA_BH41_0.00-0.15	19-Oc33829	Oct 22, 2019	Approximate Sample 783g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH41_0.15-0.30	19-Oc33830	Oct 22, 2019	Approximate Sample 594g Sample consisted of: Brown coarse-grained soil, rocks and bituminous material	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH42_0.00-0.15	19-Oc33831	Oct 22, 2019	Approximate Sample 523g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH42_0.15-0.30	19-Oc33832	Oct 22, 2019	Approximate Sample 789g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH43_0.00-0.15	19-Oc33833	Oct 22, 2019	Approximate Sample 656g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH43_0.15-0.30	19-Oc33834	Oct 22, 2019	Approximate Sample 588g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH44_0.00-0.15	19-Oc33835	Oct 22, 2019	Approximate Sample 649g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH44_0.15-0.30	19-Oc33836	Oct 22, 2019	Approximate Sample 651g Sample consisted of: Brown coarse-grained soil 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
HHRA_BH45_0.00-0.15	19-Oc33837	Oct 22, 2019	Approximate Sample 553g Sample consisted of: Brown coarse-grained soil, rocks and coal	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH45_0.15-0.30	19-Oc33838	Oct 22, 2019	Approximate Sample 558g Sample consisted of: Brown coarse-grained soil, rocks, coal and cement	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH10_0.00-0.15	19-Oc33839	Oct 22, 2019	Approximate Sample 391g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH10_0.15-0.30	19-Oc33840	Oct 22, 2019	Approximate Sample 640g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH20_0.00-0.15	19-Oc33841	Oct 22, 2019	Approximate Sample 700g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH20_0.15-0.30	19-Oc33842	Oct 22, 2019	Approximate Sample 638g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH30_0.00-0.15	19-Oc33843	Oct 22, 2019	Approximate Sample 596g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH30_0.15-0.30	19-Oc33844	Oct 22, 2019	Approximate Sample 546g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH40_0.00-0.15	19-Oc33845	Oct 22, 2019	Approximate Sample 600g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH40_0.15-0.30	19-Oc33846	Oct 22, 2019	Approximate Sample 617g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_QC05	19-Oc33847	Oct 22, 2019	Approximate Sample 600g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH31_0.00-0.15	19-Oc33848	Oct 22, 2019	Approximate Sample 775g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH31_0.15-0.30	19-Oc33849	Oct 22, 2019	Approximate Sample 650g Sample consisted of: Brown coarse-grained soil 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
HHRA_BH32_0.00-0.15	19-Oc33850	Oct 22, 2019	Approximate Sample 371g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH32_0.15-0.30	19-Oc33851	Oct 22, 2019	Approximate Sample 541g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH33_0.00-0.15	19-Oc33852	Oct 22, 2019	Approximate Sample 554g Sample consisted of: Brown coarse-grained soil, rocks and coal	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH33_0.15-0.30	19-Oc33853	Oct 22, 2019	Approximate Sample 592g Sample consisted of: Brown coarse-grained soil, rocks and coal	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH34_0.00-0.15	19-Oc33854	Oct 22, 2019	Approximate Sample 573g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH34_0.15-0.30	19-Oc33855	Oct 22, 2019	Approximate Sample 619g Sample consisted of: Brown coarse-grained soil, rocks and bituminous material	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH35_0.00-0.15	19-Oc33856	Oct 22, 2019	Approximate Sample 668g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH35_0.15-0.30	19-Oc33857	Oct 22, 2019	Approximate Sample 719g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH36_0.00-0.15	19-Oc33858	Oct 22, 2019	Approximate Sample 636g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH36_0.15-0.30	19-Oc33859	Oct 22, 2019	Approximate Sample 637g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH37_0.00-0.15	19-Oc33860	Oct 22, 2019	Approximate Sample 552g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH37_0.15-0.30	19-Oc33861	Oct 22, 2019	Approximate Sample 621g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH38_0.00-0.15	19-Oc33862	Oct 22, 2019	Approximate Sample 563g Sample consisted of: Brown coarse-grained soil 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
HHRA_BH38_0.15-0.30	19-Oc33863	Oct 22, 2019	Approximate Sample 457g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH39_0.00-0.15	19-Oc33864	Oct 22, 2019	Approximate Sample 550g Sample consisted of: Brown coarse-grained soil, rocks and bituminous material	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH39_0.15-0.30	19-Oc33865	Oct 22, 2019	Approximate Sample 504g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_QC04	19-Oc33866	Oct 22, 2019	Approximate Sample 648g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH11_0.00-0.15	19-Oc33867	Oct 22, 2019	Approximate Sample 560g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH11_0.15-0.30	19-Oc33868	Oct 22, 2019	Approximate Sample 611g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH12_0.00-0.15	19-Oc33869	Oct 22, 2019	Approximate Sample 507g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH12_0.15-0.30	19-Oc33870	Oct 22, 2019	Approximate Sample 494g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH13_0.00-0.15	19-Oc33871	Oct 22, 2019	Approximate Sample 611g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH13_0.15-0.30	19-Oc33872	Oct 22, 2019	Approximate Sample 507g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH14_0.00-0.15	19-Oc33873	Oct 22, 2019	Approximate Sample 530g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH14_0.15-0.30	19-Oc33874	Oct 22, 2019	Approximate Sample 518g Sample consisted of: Brown coarse-grained soil, rocks and bituminous material	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH15_0.00-0.15	19-Oc33875	Oct 22, 2019	Approximate Sample 406g Sample consisted of: Brown coarse-grained soil 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
HHRA_BH15_0.15-0.30	19-Oc33876	Oct 22, 2019	Approximate Sample 403g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH16_0.00-0.15	19-Oc33877	Oct 22, 2019	Approximate Sample 576g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH16_0.15-0.30	19-Oc33878	Oct 22, 2019	Approximate Sample 562g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH17_0.00-0.15	19-Oc33879	Oct 22, 2019	Approximate Sample 500g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH17_0.15-0.30	19-Oc33880	Oct 22, 2019	Approximate Sample 643g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH18_0.00-0.15	19-Oc33881	Oct 22, 2019	Approximate Sample 476g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH18_0.15-0.30	19-Oc33882	Oct 22, 2019	Approximate Sample 504g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH19_0.00-0.15	19-Oc33883	Oct 22, 2019	Approximate Sample 611g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH19_0.15-0.30	19-Oc33884	Oct 22, 2019	Approximate Sample 641g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_QC02	19-Oc33885	Oct 22, 2019	Approximate Sample 501g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH01_0.00-0.15	19-Oc33886	Oct 22, 2019	Approximate Sample 574g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH01_0.15-0.30	19-Oc33887	Oct 22, 2019	Approximate Sample 678g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH02_0.00-0.15	19-Oc33888	Oct 22, 2019	Approximate Sample 604g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

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HHRA_BH02_0.15-0.30	19-Oc33889	Oct 22, 2019	Approximate Sample 617g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH03_0.00-0.15	19-Oc33890	Oct 22, 2019	Approximate Sample 558g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH03_0.15-0.30	19-Oc33891	Oct 22, 2019	Approximate Sample 571g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH04_0.00-0.15	19-Oc33892	Oct 22, 2019	Approximate Sample 551g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH04_0.15-0.30	19-Oc33893	Oct 22, 2019	Approximate Sample 663g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH05_0.00-0.15	19-Oc33894	Oct 22, 2019	Approximate Sample 583g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH05_0.15-0.30	19-Oc33895	Oct 22, 2019	Approximate Sample 709g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH06_0.00-0.15	19-Oc33896	Oct 22, 2019	Approximate Sample 564g Sample consisted of: Brown coarse-grained soil, rocks and debris	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH06_0.15-0.30	19-Oc33897	Oct 22, 2019	Approximate Sample 634g Sample consisted of: Brown coarse-grained soil, rocks and bituminous material	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH07_0.00-0.15	19-Oc33898	Oct 22, 2019	Approximate Sample 462g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH07_0.15-0.30	19-Oc33899	Oct 22, 2019	Approximate Sample 608g Sample consisted of: Brown coarse-grained soil, rocks and debris	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH08_0.00-0.15	19-Oc33900	Oct 22, 2019	Approximate Sample 532g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH08_0.15-0.30	19-Oc33901	Oct 22, 2019	Approximate Sample 524g Sample consisted of: Brown coarse-grained soil 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
HHRA_BH09_0.00-0.15	19-Oc33902	Oct 22, 2019	Approximate Sample 588g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH09_0.15-0.30	19-Oc33903	Oct 22, 2019	Approximate Sample 658g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_QC01	19-Oc33904	Oct 22, 2019	Approximate Sample 514g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH21_0.00-0.15	19-Oc33905	Oct 22, 2019	Approximate Sample 293g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH21_0.15-0.30	19-Oc33906	Oct 22, 2019	Approximate Sample 420g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH22_0.00-0.15	19-Oc33907	Oct 22, 2019	Approximate Sample 546g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH22_0.15-0.30	19-Oc33908	Oct 22, 2019	Approximate Sample 603g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH23_0.00-0.15	19-Oc33909	Oct 22, 2019	Approximate Sample 693g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH23_0.15-0.30	19-Oc33910	Oct 22, 2019	Approximate Sample 521g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH24_0.00-0.15	19-Oc33911	Oct 22, 2019	Approximate Sample 676g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH24_0.15-0.30	19-Oc33912	Oct 22, 2019	Approximate Sample 534g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH25_0.00-0.15	19-Oc33913	Oct 22, 2019	Approximate Sample 566g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH25_0.15-0.30	19-Oc33914	Oct 22, 2019	Approximate Sample 561g Sample consisted of: Brown coarse-grained soil, rocks and bituminous material	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
HHRA_BH26_0.00-0.15	19-Oc33915	Oct 22, 2019	Approximate Sample 541g Sample consisted of: Brown coarse-grained soil, rocks and bituminous material	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH26_0.15-0.30	19-Oc33916	Oct 22, 2019	Approximate Sample 617g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH27_0.00-0.15	19-Oc33917	Oct 22, 2019	Approximate Sample 529g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH27_0.15-0.30	19-Oc33918	Oct 22, 2019	Approximate Sample 631g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH28_0.00-0.15	19-Oc33919	Oct 22, 2019	Approximate Sample 570g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH28_0.15-0.30	19-Oc33920	Oct 22, 2019	Approximate Sample 593g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH29_0.00-0.15	19-Oc33921	Oct 22, 2019	Approximate Sample 731g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_BH29_0.15-0.30	19-Oc33922	Oct 22, 2019	Approximate Sample 664g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HHRA_QC03	19-Oc33923	Oct 22, 2019	Approximate Sample 676g Sample consisted of: Brown coarse-grained soil 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 and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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	Oct 22, 2019	Indefinite

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Sydney
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Project Name: DOYALSON HHRA
Project ID: 57611

Order No.:
Report #: 683935
Phone: 02 8245 0300
Fax:

Received: Oct 22, 2019 5:38 PM
Due: Oct 29, 2019
Priority: 5 Day
Contact Name: Ryan Lill

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	HHRA_BH41_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33829	X
2	HHRA_BH41_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33830	X
3	HHRA_BH42_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33831	X
4	HHRA_BH42_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33832	X
5	HHRA_BH43_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33833	X
6	HHRA_BH43_	Oct 22, 2019		Soil	S19-Oc33834	X

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Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
	0.15-0.30					
7	HHRA_BH44_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33835	X
8	HHRA_BH44_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33836	X
9	HHRA_BH45_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33837	X
10	HHRA_BH45_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33838	X
11	HHRA_BH10_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33839	X
12	HHRA_BH10_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33840	X
13	HHRA_BH20_	Oct 22, 2019		Soil	S19-Oc33841	X

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Perth Laboratory - NATA Site # 23736						
	0.00-0.15					
14	HHRA_BH20_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33842	X
15	HHRA_BH30_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33843	X
16	HHRA_BH30_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33844	X
17	HHRA_BH40_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33845	X
18	HHRA_BH40_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33846	X
19	HHRA_QC05	Oct 22, 2019		Soil	S19-Oc33847	X
20	HHRA_BH31_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33848	X

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Perth Laboratory - NATA Site # 23736						
21	HHRA_BH31_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33849	X
22	HHRA_BH32_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33850	X
23	HHRA_BH32_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33851	X
24	HHRA_BH33_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33852	X
25	HHRA_BH33_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33853	X
26	HHRA_BH34_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33854	X
27	HHRA_BH34_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33855	X

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28	HHRA_BH35_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33856	X
29	HHRA_BH35_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33857	X
30	HHRA_BH36_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33858	X
31	HHRA_BH36_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33859	X
32	HHRA_BH37_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33860	X
33	HHRA_BH37_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33861	X
34	HHRA_BH38_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33862	X

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Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
35	HHRA_BH38_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33863	X
36	HHRA_BH39_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33864	X
37	HHRA_BH39_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33865	X
38	HHRA_QC04	Oct 22, 2019		Soil	S19-Oc33866	X
39	HHRA_BH11_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33867	X
40	HHRA_BH11_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33868	X
41	HHRA_BH12_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33869	X
42	HHRA_BH12_	Oct 22, 2019		Soil	S19-Oc33870	X

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Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
	0.15-0.30					
43	HHRA_BH13_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33871	X
44	HHRA_BH13_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33872	X
45	HHRA_BH14_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33873	X
46	HHRA_BH14_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33874	X
47	HHRA_BH15_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33875	X
48	HHRA_BH15_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33876	X
49	HHRA_BH16_	Oct 22, 2019		Soil	S19-Oc33877	X

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Perth Laboratory - NATA Site # 23736						
	0.00-0.15					
50	HHRA_BH16_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33878	X
51	HHRA_BH17_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33879	X
52	HHRA_BH17_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33880	X
53	HHRA_BH18_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33881	X
54	HHRA_BH18_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33882	X
55	HHRA_BH19_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33883	X
56	HHRA_BH19_	Oct 22, 2019		Soil	S19-Oc33884	X

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Perth Laboratory - NATA Site # 23736						
	0.15-0.30					
57	HHRA_QC02	Oct 22, 2019		Soil	S19-Oc33885	X
58	HHRA_BH01_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33886	X
59	HHRA_BH01_0.15-0.30	Oct 22, 2019		Soil	S19-Oc33887	X
60	HHRA_BH02_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33888	X
61	HHRA_BH02_0.15-0.30	Oct 22, 2019		Soil	S19-Oc33889	X
62	HHRA_BH03_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33890	X
63	HHRA_BH03_0.15-0.30	Oct 22, 2019		Soil	S19-Oc33891	X

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64	HHRA_BH04_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33892	X
65	HHRA_BH04_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33893	X
66	HHRA_BH05_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33894	X
67	HHRA_BH05_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33895	X
68	HHRA_BH06_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33896	X
69	HHRA_BH06_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33897	X
70	HHRA_BH07_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33898	X

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71	HHRA_BH07_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33899	X
72	HHRA_BH08_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33900	X
73	HHRA_BH08_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33901	X
74	HHRA_BH09_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33902	X
75	HHRA_BH09_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33903	X
76	HHRA_QC01	Oct 22, 2019		Soil	S19-Oc33904	X
77	HHRA_BH21_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33905	X
78	HHRA_BH21_	Oct 22, 2019		Soil	S19-Oc33906	X

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Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
	0.15-0.30					
79	HHRA_BH22_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33907	X
80	HHRA_BH22_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33908	X
81	HHRA_BH23_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33909	X
82	HHRA_BH23_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33910	X
83	HHRA_BH24_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33911	X
84	HHRA_BH24_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33912	X
85	HHRA_BH25_	Oct 22, 2019		Soil	S19-Oc33913	X

eurofins | Environment Testing
ABN – 50 005 085 521
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Melbourne
6 Monterey Road
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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
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: DOYALSON HHRA
Project ID: 57611

Order No.:
Report #: 683935
Phone: 02 8245 0300
Fax:

Received: Oct 22, 2019 5:38 PM
Due: Oct 29, 2019
Priority: 5 Day
Contact Name: Ryan Lill

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
	0.00-0.15					
86	HHRA_BH25_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33914	X
87	HHRA_BH26_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33915	X
88	HHRA_BH26_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33916	X
89	HHRA_BH27_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33917	X
90	HHRA_BH27_ 0.15-0.30	Oct 22, 2019		Soil	S19-Oc33918	X
91	HHRA_BH28_ 0.00-0.15	Oct 22, 2019		Soil	S19-Oc33919	X
92	HHRA_BH28_	Oct 22, 2019		Soil	S19-Oc33920	X

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Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**		**Received:**	Oct 22, 2019 5:38 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	683935	**Due:**	Oct 29, 2019
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ryan Lill
Project Name:	DOYALSON HHRA				
Project ID:	57611				

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
	0.15-0.30					
93	HHRA_BH29_0.00-0.15	Oct 22, 2019		Soil	S19-Oc33921	X
94	HHRA_BH29_0.15-0.30	Oct 22, 2019		Soil	S19-Oc33922	X
95	HHRA_QC03	Oct 22, 2019		Soil	S19-Oc33923	X
Test Counts						95

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

Dry	Sample is dried by heating prior to analysis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	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)
NEPM	National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended)
ACM	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.
AF	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”.
FA	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.
Friable	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.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres in the matrix.

Comments

S19-Oc33839, S19-Oc33850, S19-Oc33863, S19-Oc33870, S19-Oc33875, S19-Oc33876, S19-Oc33881, S19-Oc33898, S19-Oc33905, S19-Oc33906: 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	N/A
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	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Authorised by:

Sayeed Abu	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.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 228999

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	R Lill
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**57611, Doyalson HHRA**
Number of Samples	5 soil
Date samples received	22/10/2019
Date completed instructions received	22/10/2019

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	29/10/2019
Date of Issue	23/10/2019

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Asbestos Approved By
Analysed by Asbestos Approved Identifier: Panika Wongchanda
Authorised by Asbestos Approved Signatory: Lucy Zhu
Results Approved By
Lucy Zhu, Senior Asbestos Analyst

Authorised By

Nancy Zhang, Laboratory Manager

Asbestos ID - soils NEPM - ASB-001						
Our Reference		228999-1	228999-2	228999-3	228999-4	228999-5
Your Reference	UNITS	HHRA-QA01	HHRA-QA02	HHRA-QA03	HHRA-QA04	HHRA-QA05
Date Sampled		22/10/2019	22/10/2019	22/10/2019	22/10/2019	22/10/2019
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	23/10/2019	23/10/2019	23/10/2019	23/10/2019	23/10/2019
Sample mass tested	g	464.26	718.77	592.23	633.23	646.47
Sample Description	-	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Report Comments

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Note: All samples analysed as received. However, sample 228999-1 is below the minimum 500mL sample volume as per National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013.

012693

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 57611	LABORATORY BATCH NO.:
PROJECT NAME: Doyalson HHRA	SAMPLERS: RL
DATE NEEDED BY: Standard TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) rl@jbsg.com.au; (3) nswinfield@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Asbestos	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
HHRA-QA01 1	Soil	22.10.19		1x 500ml Bag		x		X	
HHRA-QA02 2	↓	↓		↓		↓		↓	
HHRA-QA03 3									
HHRA-QA04 4									
HHRA-QA05 5									

ENVIROLAB

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 228999

Date Received: 22/10/19
Time Received: 1601
Received by: EAK
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: Ryan DATE: 22.10.19	CONSIGNMENT NOTE NO.	NAME: Ellen Wh DATE: 221019 16:01	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: EAS	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Appendix D Quality Assurance / Quality Control Assessment

The QA/QC results for soil samples collected at the site are summarised in **Table D.1** and discussed following. Laboratory certificates of analysis are included in **Appendix C**.

Table D.1: Data Quality Indicator Assessment

Data Quality Objectives	Frequency	Result	DQO met?
Precision			
Blind duplicates (intra laboratory)	Soil – 1/18	0 % RPD	Yes
Blind duplicates (inter laboratory)	Soil – 1/18	0 % RPD	Yes
Accuracy			
Sample results between field and laboratory assessment in agreement	All Samples	Yes	Yes
Representativeness			
Sampling appropriate for media and analytes	All Samples	Yes	Yes
Comparability			
Standard operating procedures for sample collection & handling	All Samples	All samples	Yes
Standard analytical methods used for all analyses	All Samples	All samples	Yes
Consistent field conditions, sampling staff and laboratory analysis	All Samples	All samples	Yes
Limits of reporting appropriate and consistent	All Samples	All samples	Yes
Completeness			
Sample description and COCs completed and appropriate	All Samples	All samples	Yes
Appropriate documentation	All Samples	All samples	Yes
Satisfactory frequency and result for QC samples	All QA/QC samples	-	Yes
Data from critical samples is considered valid	-	Critical samples valid	Yes
Sensitivity			
Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria	All Samples	All samples	Yes

Section D1: Precision

A summary of all RPD calculations is provided following the QA/QC evaluation.

Soil

Soil Blind Duplicates (intra laboratory)

Soil field blind (intra-laboratory) duplicates (1 per 18 primary samples) for soil were collected at a rate of greater than 1 per 20 primary samples analysed, meeting the 1/20 DQI frequency (for blind duplicates). Blind (intra laboratory) split duplicates for soil were all within agreement relating to asbestos in soil concentrations (i.e. non-detect).

Soil Split Duplicates (inter laboratory)

Soil field blind (inter-laboratory) duplicates (1 per 18 primary samples) for soil were collected at a rate of greater than 1 per 20 primary samples analysed meeting the 1/20 DQI frequency (for blind duplicates). Blind (inter laboratory) split duplicates for soil were all within agreement relating to asbestos in soil concentrations (i.e. non-detect).

Section D2: Accuracy

Sample results between field and laboratory assessment in agreement

All field and laboratory observations and results were in general agreement.

Section D3: Representativeness

Sampling appropriate for media and analytes

All soil sampling works completed during the investigation were conducted in accordance with JBS&G standard operating procedures. Soil sampling was conducted with the advancement of boreholes, considered appropriate for the potential site contaminants.

Section D4: Comparability

Documentation

All documentation is complete and correct. Field records are provided as **Appendix B**.

Frequency for QC Samples

Frequency of analysis for the QC samples collected has met or exceeded the required minimum frequency for each analyte and media analysed.

Section M5: Completeness

Samples were transported under full chain of custody (COC) documentation. The COC documentation was completed and the selected analyses were correctly conducted.

All field documentation was completed appropriately including borehole logs, COCs and daily field logs.

Section M6: Sensitivity

Laboratory analysis methods for all contaminants adopted during the investigation applied limits of reporting less than the site assessment criteria.

Section M7: QA/QC Assessment

The field sampling and handling procedures produced QA/QC results which indicate that the soil and groundwater data are of an acceptable quality and suitable for use in site characterisation.

The NATA certified laboratory results sheets indicate that the project laboratory was generally achieving levels of performance within its recommended control limits during the period when the samples from this program were analysed.

Summary

On the basis of the results of the field and laboratory QA/QC program, the soil, groundwater and surface water data is of an acceptable quality in order to achieve the objectives of the assessment.

ESDAT QA Checker
Project:57611_AID
Filter: ALL

Overview Summary
- Count of Samples
- Summary By Compound
- Count of Results

Holding Times
- Holding Time Errors (0)

Blanks
- Field Blanks
- Detects in Lab Blanks (0)
- SDG's without Storage Blanks (0)
- SDG's without Method Blanks (0)

Duplicates
- Field and Interlab Duplicates
- Lab Duplicates with high RPDs (0)
- Duplicate Samples with incorrect or missing Parent Samples (0)
- Samples at the same Location/Depth/Time not specified as duplicates (45)

Surrogates
- Surrogate Variation > 30% or outside lab LCL or UCL (0)

Lab Control Samples
- SDG's without a Laboratory Control Sample (0)
- Laboratory Control Samples, Error > 30% (0)

Certified and Standard Reference Materials
- Certified Reference Materials - Error > 10% (0)

Matrix Spikes
- SDG's without a Matrix Spike (0)
- Trip Spikes with invalid Control Sample (0)
- Less than 1 matrix spike in 20 samples (0)
- Matrix Spike Recoveries less than 70% or greater than 130% or outside lab LCL or UCL (0)
- Trip Spike Recoveries (70% - 130% is acceptable) (0)

Inorganic
- Na + CL > TDS (0)
- BOD > COD (0)
- BOD > COD (0)

Other
- Unit Conversion Problems (0)
- OriginalChemNames Requiring Validation (0)
- Samples with no Results (0)
- Samples associated with Wells which are not specified in the Well Table (0)
- Aborted Analysis (0)

Count of Samples
Project Number: 57611
Project Name: DGI Doyalson

Contents

Count of Samples

Matrix Type	SOIL
First Sample Date	22/10/2019
Last Sample Date	22/10/2019
Sampling Period (days)	1
Number of Samples Submitted	100
Number of Non QA Samples Submitted	90
Number of Field Blanks	0
Number of Trip Blanks	0
Number of Rinsates	0
Number of Field Duplicates	5
Number of Interlab Duplicates	5
Number of Trip Spikes	0
Number of Lab Duplicates	0
Number of LCSs	0
Number of CRMs	0
Number of Method Blanks	0
Number of Storage Blanks	0
Number of Matrix Spikes	0
Number of Matrix Spike Dupes	0

Summary By Compound
Project Number: 57611
Project Name: DGI Doyalson

			Num Results	Holding Times (days)				Lab Control Samples			Method and Storage Blanks			Laboratory Duplicates			Surrogates			Matrix,Trip and Compound Spikes			Field,Rinsate and Trip Blanks			Field Duplicates		
Chem_Group	ChemName	Range	Non QA (Normal + Composite)	Volatility Group	Sample to Extraction	Sample to Analysis	Acceptable	Recovery %	Num Reported	Acceptable	Range	Num Reported	Acceptable	Max RPD > EQL x 1	Num Reported	Acceptable	Recovery %	Num Reported	Acceptable	Recovery %	Num Reported	Acceptable	Range	Num Reported	Acceptable	Max RPD > EQL x 1	Num Reported	Acceptable
Asbestos	Approx. Sample Mass		90	Other	0	7	Y		0			0			0	N		0			0			0			5	Y
	Asbestos from ACM in Soil		90	Other	0	7	Y		0			0			0	N		0			0			0			5	Y
	Asbestos from FA & AF in Soil		90	Other	0	7	Y		0			0			0	N		0			0			0			5	Y
Asbestos	Asbestos ID in Soil		0	Other	1	1	Y		0			0			0	N		0			0			0			0	N
	Asbestos Reported Result		90	Other	0	7	Y		0			0			0	N		0			0			0			5	Y
Asbestos	Mass ACM		90	Other	0	7	Y		0			0			0	N		0			0			0			5	Y
	Mass AF		90	Other	0	7	Y		0			0			0	N		0			0			0			5	Y
	Mass Asbestos in ACM		90	Other	0	7	Y		0			0			0	N		0			0			0			5	Y
	Mass Asbestos in AF		90	Other	0	7	Y		0			0			0	N		0			0			0			5	Y
	Mass Asbestos in FA		90	Other	0	7	Y		0			0			0	N		0			0			0			5	Y
	Mass Asbestos in FA & AF		90	Other	0	7	Y		0			0			0	N		0			0			0			5	Y
	Mass FA		90	Other	0	7	Y		0			0			0	N		0			0			0			5	Y
Asbestos - Trace Analysis	ACM - Comment		90	Other	0	7	Y		0			0			0	N		0			0			0			4	Y
	AF - Comment		90	Other	0	7	Y		0			0			0	N		0			0			0			4	Y
	FA - Comment		90	Other	0	7	Y		0			0			0	N		0			0			0			4	Y
	Organic Fibres - Comment		90	Other	0	7	Y		0			0			0	N		0			0			0			4	Y
	Respirable Fibres - Comment		90	Other	0	7	Y		0			0			0	N		0			0			0			5	Y
	Synthetic Fibres - Comment		90	Other	0	7	Y		0			0			0	N		0			0			0			4	Y
Asbestos ID - soils NEPM - AS	ACM >7mm Estimatio[n*]		0	Other	1	1	Y		0			0			0	N		0			0			0			0	N
	FA and AF Estimatio[n*#2]		0	Other	1	1	Y		0			0			0	N		0			0			0			0	N
	Total Asbestos#1		0	Other	1	1	Y		0			0			0	N		0			0			0			0	N

Field and Interlab Duplicates
Project Number: 57611
Project Name: DGI Doyalson

Field Duplicates (SOIL)
Filter: ALL

Lab Report Number	683935	683935		683935	683935		683935	683935		683935	683935		683935	683935	
Field ID	HHRA_BH32_0.00-0.15	HHRA_QC05	RPD	HHRA_BH29_0.00-0.15	HHRA_QC04	RPD	HHRA_BH23_0.00-0.15	HHRA_QC02	RPD	HHRA_BH22_0.00-0.15	HHRA_QC01	RPD	HHRA_BH29_0.00-0.15	HHRA_QC03	RPD
Sampled Date/Time	22/10/2019	22/10/2019		22/10/2019	22/10/2019		22/10/2019	22/10/2019		22/10/2019	22/10/2019		22/10/2019	22/10/2019	
Chem_Grou	ChemName	Units	EQL												
Asbestos	Approx. San	G		371.0	600.0	47	731.0	648.0	12	693.0	501.0	32	546.0	514.0	6	731.0	676.0	8
	Asbestos fra	%w/w		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
	Asbestos fra	%w/w		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
Asbestos	Asbestos Re	COMMENT		1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0
Asbestos	Mass ACM	G		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
	Mass Asbest	G		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
	Mass FA	G		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
	Mass Asbest	G		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
	Mass AF	G		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
	Mass Asbest	G		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
	Mass Asbest	G		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
Asbestos - T	ACM - Com	COMMENT		1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0		
	AF - Comme	COMMENT		1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0		
	FA - Comme	COMMENT		1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0		
	Organic Fibr	COMMENT		1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0		
	Respirable F	COMMENT		1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0
	Synthetic Fi	COMMENT		1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0		

	683935	Interlab_D		683935	Interlab_D		683935	Interlab_D		683935	Interlab_D		683935	Interlab_D	
	HHRA_QC01	HHRA-QA01	RPD	HHRA_QC02	HHRA-QA02	RPD	HHRA_QC03	HHRA-QA03	RPD	HHRA_QC04	HHRA-QA04	RPD	HHRA_QC05	HHRA-QA05	RPD
	22/10/2019	22/10/2019		22/10/2019	22/10/2019		22/10/2019	22/10/2019		22/10/2019	22/10/2019		22/10/2019	22/10/2019	
Chem_Grou	ChemName	Units	EQL												
Asbestos	Approx. San	G		514	464	10	501	718	36	676	592	13	648	633	2	731.0	676.0	8
	Asbestos fra	%w/w		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
	Asbestos fra	%w/w		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
Asbestos	Asbestos Re	COMMENT		1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0
Asbestos	Mass ACM	G		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
	Mass Asbest	G		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
	Mass FA	G		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
	Mass Asbest	G		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
	Mass AF	G		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
	Mass Asbest	G		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
	Mass Asbest	G		0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0
Asbestos - T	ACM - Com	COMMENT		1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0		
	AF - Comme	COMMENT		1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0		
	FA - Comme	COMMENT		1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0		
	Organic Fibr	COMMENT		1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0		
	Respirable F	COMMENT		1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0
	Synthetic Fi	COMMENT		1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0	1.0	0	1.0		

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Appendix E Borehole Logs

HHRA_BH01

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362758.5866
Northings (GDA 94): 6325815.577
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels, clay clasts and wood ash	HHRA_BH01 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH01 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH01 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH02

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362786.0941
Northings (GDA 94): 6325810.349
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH02 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH02 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH02 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH03

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362813.6016
Northings (GDA 94): 6325805.12
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH03 0.0-0.2	No odours, staining or ACM observed
		0.15		Fill	Clayey Silty SAND; brown, heterogeneous, damp, medium dense, poorly sorted. Inclusions of trace subrounded gravels	HHRA_BH03 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH03 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH04

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362841.1092
Northings (GDA 94): 6325799.892
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH04 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH04 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH04 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH05

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362868.6167
Northings (GDA 94): 6325794.664
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH05 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH05 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH05 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH06

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362896.1242
Northings (GDA 94): 6325789.435
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH06 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH06 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH06 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH07

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362923.6318
Northings (GDA 94): 6325784.207
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Sandy SILT; dark brown, heterogeneous, damp, non-low plastic, soft. Inclusions of trace rounded gravels. Trace clay clasts at 0.2 m bgs	HHRA_BH07 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH07 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH07 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH08

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362951.1393
Northings (GDA 94): 6325778.979
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH08 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH08 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH08 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH09

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362763.815
Northings (GDA 94): 6325843.085
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; grey, heterogeneous, damp, loose, poorly sorted. Inclusions of trace rootlets	HHRA_BH09 0.0-0.2	No odours, staining or ACM observed
		0.20		Fill	Sandy Silty CLAY; grey, heterogeneous, damp, firm, low plastic	HHRA_BH09 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH09 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH10

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362791.3225
Northings (GDA 94): 6325837.856
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; grey, heterogeneous, damp, loose, poorly sorted. Inclusions of trace rootlets. No rootlets from 0.15 m bgs	HHRA_BH10 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH10 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH10 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH11

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362818.83
Northings (GDA 94): 6325832.628
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; grey, heterogeneous, damp, loose, poorly sorted. Inclusions of trace rootlets	HHRA_BH11 0.0-0.2	No odours, staining or ACM observed
		0.20		Fill	Sandy CLAY; orange mottled white; heterogeneous, damp, firm to stiff, low plastic	HHRA_BH11 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH11 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH12

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362846.3375
Northings (GDA 94): 6325827.4
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; grey, heterogeneous, damp, loose, poorly sorted. Inclusions of trace rootlets	HHRA_BH12 0.0-0.2	No odours, staining or ACM observed
		0.20		Fill	Sandy CLAY; white mottling, heterogeneous, damp, firm to stiff, low plastic	HHRA_BH12 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH12 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH13

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362873.8451
Northings (GDA 94): 6325822.171
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; grey, heterogeneous, damp, loose, poorly sorted. Inclusions of trace rootlets. No rootlets from 0.15 m bgs	HHRA_BH13 0.0-0.2	No odours, staining or ACM observed
		0.15		Fill	Sandy CLAY; brown, heterogeneous, damp, stiff, low plastic. Inclusions of trace gravels	HHRA_BH13 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH13 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH14

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362901.3526
Northings (GDA 94): 6325816.943
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; grey, heterogeneous, damp, loose, poorly sorted. Inclusions of trace rootlets. No rootlets from 0.15 m bgs	HHRA_BH14 0.0-0.2	No odours, staining or ACM observed
		0.15		Fill	CLAY; brown, heterogeneous, damp, stiff, medium plastic. Inclusions of trace sand and gravels	HHRA_BH14 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH14 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH15

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362928.8601
Northings (GDA 94): 6325811.714
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Gravelly SAND; grey, heterogeneous, damp, poorly graded, angular, loose	HHRA_BH15 0.0-0.2	No odours, staining or ACM observed
		0.15		Fill	Sandy CLAY; brown, heterogeneous, damp, stiff, low plastic. Inclusions of trace gravels	HHRA_BH15 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH15 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH16

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362956.3677
Northings (GDA 94): 6325806.486
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH16 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH16 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH16 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH17

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362983.8752
Northings (GDA 94): 6325801.258
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH17 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH17 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH17 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH18

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363011.3827
Northings (GDA 94): 6325796.029
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH18 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH18 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH18 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH19

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363038.8902
Northings (GDA 94): 6325790.801
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH19 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH19 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH19 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH20

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363066.3978
Northings (GDA 94): 6325785.573
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH20 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH20 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH20 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH21

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362934.0885
Northings (GDA 94): 6325839.222
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	CLAY; brown, heterogeneous, damp, stiff, medium plastic. Inclusions of trace sand and gravels	HHRA_BH21 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH21 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH21 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH22

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362961.596
Northings (GDA 94): 6325833.994
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace gravels	HHRA_BH22 0.0-0.2	No odours, staining or ACM observed HHRA_QA/QC01
		0.20		Fill	Sandy CLAY; brown, heterogeneous, damp, stiff, medium plastic	HHRA_BH22 0.2-0.3	No odours, staining or ACM observed
	0.5	0.30			Borehole HHRA_BH22 terminated at 0.3m		EOH target depth

HHRA_BH23

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362989.1036
Northings (GDA 94): 6325828.765
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	SAND; yellow, heterogeneous, damp, loose, poorly sorted. Inclusions of rootlets	HHRA_BH23 0.0-0.2	No odours, staining or ACM observed HHRA_QA/QC02
		0.15		Fill	Sandy CLAY; brown mottled orange, heterogeneous, damp, stiff, medium plastic. Inclusions of trace gravels	HHRA_BH23 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH23 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH24

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363016.6111
Northings (GDA 94): 6325823.537
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; yellowish brown, heterogeneous, damp, loose, well sorted	HHRA_BH24 0.0-0.2	No odours, staining or ACM observed
		0.15		Fill	Silty SAND; brown, heterogeneous, damp, poorly sorted, medium dense	HHRA_BH24 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH24 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH25

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363044.1186
Northings (GDA 94): 6325818.309
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brownish grey, heterogeneous, damp, loose, well sorted	HHRA_BH25 0.0-0.2	No odours, staining or ACM observed
		0.15		Fill	Silty SAND; brown, heterogeneous, damp, poorly sorted, medium dense	HHRA_BH25 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH25 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH26

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363071.6261
Northings (GDA 94): 6325813.08
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brownish grey, heterogeneous, damp, loose, well sorted	HHRA_BH26 0.0-0.2	No odours, staining or ACM observed
		0.10		Fill	Clayey Silty SAND; brownish grey, heterogeneous, damp, very dense, poorly sorted. Inclusions of trace gravels	HHRA_BH26 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH26 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH27

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363099.1337
Northings (GDA 94): 6325807.852
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH27 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH27 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH27 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH28

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362966.8244
Northings (GDA 94): 6325861.501
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	SAND; grey, heterogeneous, damp, loose, poorly sorted. Inclusions of rootlets	HHRA_BH28 0.0-0.2	No odours, staining or ACM observed HHRA_QA/QC03
		0.20		Fill	Silty CLAY; brown, heterogeneous, damp, firm to stiff, med plastic. Inclusions of trace gravels	HHRA_BH28 0.2-0.3	No odours, staining or ACM observed
	0.5	0.30			Borehole HHRA_BH28 terminated at 0.3m		EOH target depth

HHRA_BH29

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362994.3319
Northings (GDA 94): 6325856.273
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted	HHRA_BH29 0.0-0.2	No odours, staining or ACM observed HHRA_QA/QC04
		0.15		Fill	Silty CLAY; brown, heterogeneous, damp, stiff, med plastic. Inclusions of trace gravels	HHRA_BH29 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH29 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH30

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363021.8395
Northings (GDA 94): 6325851.044
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	SAND; grey, heterogeneous, damp, loose, poorly sorted. Inclusions of rootlets and trace gravels	HHRA_BH30 0.0-0.2	No odours, staining or ACM observed
		0.20		Fill	Sandy CLAY; brown, heterogeneous, damp, stiff, medium plastic. Inclusions of trace gravels	HHRA_BH30 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH30 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH31

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363049.347
Northings (GDA 94): 6325845.816
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace gravels	HHRA_BH31 0.0-0.2	No odours, staining or ACM observed
		0.20		Fill	Sandy CLAY; brown mottled orange, heterogeneous, damp, stiff, medium plastic. Inclusions of trace gravels	HHRA_BH31 0.2-0.3	No odours, staining or ACM observed
	0.5	0.30			Borehole HHRA_BH31 terminated at 0.3m		EOH target depth

HHRA_BH32

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363076.8545
Northings (GDA 94): 6325840.588
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace gravels	HHRA_BH32 0.0-0.2	No odours, staining or ACM observed HHRA_QA/QC05
		0.15		Fill	CLAY; brown, heterogeneous, damp, stiff, medium plastic. Inclusions of trace sand and gravels	HHRA_BH32 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH32 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH33

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363104.362
Northings (GDA 94): 6325835.359
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH33 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH33 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH33 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH34

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362972.0528
Northings (GDA 94): 6325889.009
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH34 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH34 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH34 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH35

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362999.5603
Northings (GDA 94): 6325883.78
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brownish grey, heterogeneous, damp, loose, well sorted	HHRA_BH35 0.0-0.2	No odours, staining or ACM observed
		0.15		Fill	Silty SAND; brown, heterogeneous, damp, poorly sorted, medium dense	HHRA_BH35 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH35 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH36

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363027.0678
Northings (GDA 94): 6325878.552
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; yellowish brown, heterogeneous, damp, loose, well sorted	HHRA_BH36 0.0-0.2	No odours, staining or ACM observed
		0.10		Fill	Silty SAND; brown, heterogeneous, damp, poorly sorted, medium dense	HHRA_BH36 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH36 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH37

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363054.5754
Northings (GDA 94): 6325873.324
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brownish grey, heterogeneous, damp, loose, well sorted	HHRA_BH37 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH37 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH37 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH38

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363082.0829
Northings (GDA 94): 6325868.095
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	SAND; grey, heterogeneous, damp, loose, poorly sorted. Inclusions of rootlets	HHRA_BH38 0.0-0.2	No odours, staining or ACM observed
		0.20		Fill	Clayey SAND; orange, heterogeneous, damp, coarse, medium dense. Inclusions of trace gravels	HHRA_BH38 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH38 terminated at 0.3m		EOH target depth

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH39

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363109.5904
Northings (GDA 94): 6325862.867
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH39 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH39 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH39 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH40

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 362977.2811
Northings (GDA 94): 6325916.516
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, loose, poorly sorted. Inclusions of trace subrounded gravels and clay clasts	HHRA_BH40 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH40 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH40 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH41

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363004.7887
Northings (GDA 94): 6325911.288
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	SAND; grey, heterogeneous, damp, loose. Inclusions of rootlets	HHRA_BH41 0.0-0.2	No odours, staining or ACM observed
		0.15		Fill	Clayey SAND; orange, heterogeneous, damp, coarse, medium dense. Inclusions of trace gravels	HHRA_BH41 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH41 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

HHRA_BH42

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363032.2962
Northings (GDA 94): 6325906.059
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	SAND; grey, heterogeneous, damp, loose. Inclusions of rootlets	HHRA_BH42 0.0-0.2	No odours, staining or ACM observed
		0.15		Fill	Clayey SAND; orange, heterogeneous, damp, coarse, medium dense. Inclusions of trace gravels	HHRA_BH42 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH42 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH43

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363059.8037
Northings (GDA 94): 6325900.831
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	SAND; grey, heterogeneous, damp, loose. Inclusions of rootlets	HHRA_BH43 0.0-0.2	No odours, staining or ACM observed
		0.20		Fill	Clayey SAND; orange, heterogeneous, damp, coarse, medium dense. Inclusions of trace gravels	HHRA_BH43 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH43 terminated at 0.3m		EOH target depth
	0.5						

HHRA_BH44

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: RL
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363087.3113
Northings (GDA 94): 6325895.603
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	SAND; grey, heterogeneous, damp, loose. Inclusions of rootlets	HHRA_BH44 0.0-0.2	No odours, staining or ACM observed
		0.20		Fill	Clayey SAND; orange, heterogeneous, damp, coarse, medium dense. Inclusions of trace gravels	HHRA_BH44 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH44 terminated at 0.3m		EOH target depth
	0.5						

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HHRA_BH45

Project Number: 57611
Client: Doyalson Wyee RSL Club Ltd
Project Name: HHRA Doyalson RSL
Site Address: 90 Pacific Highway, Doyalson, NSW

Date: 22/10/2019
Logged By: MS
Contractor: JBS&G
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 80

Eastings (GDA 94): 363114.8188
Northings (GDA 94): 6325890.374
Zone/Area/Permit#: Management Area
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty SAND; brown, heterogeneous, damp, poorly sorted, medium dense	HHRA_BH45 0.0-0.2	No odours, staining or ACM observed
						HHRA_BH45 0.2-0.3	No odours, staining or ACM observed
		0.30			Borehole HHRA_BH45 terminated at 0.3m		EOH target depth
	0.5						

BOREHOLE JBSG BOREHOLE - 2017.GPJ GINT STD AUSTRALIA.GDT 29/10/19

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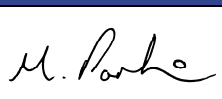
A	Rohan Hammond	Matthew Parkinson	Matthew Parkinson		1 November 2019

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