



Aqualand St Leonards Development 3 Pty Ltd

St Leonards South Development
Combined Preliminary and Detailed Site Investigation
Berry Road and Holdsworth Avenue, St Leonards, NSW

14 June 2022

62180/145904

JBS&G Australia Pty Ltd

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Abbreviations

Term	Definition
ACM	Asbestos Containing Material
AEC	Area of Environmental Concern
AF/FA	Asbestos Fines/Fibrous Asbestos
AHD	Australian Height Datum
ASS	Acid Sulfate Soils
AST	Aboveground Storage Tank
AQ	Asbestos Quantification
bgs	Below Ground Surface
BOM	Bureau of Meteorology
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
COPC	Contaminants of Potential Concern
Council	Cumberland Council
CSM	Conceptual Site Model
CT	Contaminant Threshold
DGI	Data Gap Investigation
DLWC	Department of Land and Water Conservation
DP	Deposited Plan
DPI	Department of Primary Industry
DPIE	Department of Planning, Industry and the Environment
EPA	Environment Protection Authority
ESA	Environmental Site Assessment
GSW	General Solid Waste
ha	Hectare
JBS&G	JBS&G Australia Pty Ltd
LEP	Local Environmental Plan
LOR	Limit of Reporting
LPI	Land and Property Information
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NSW	New South Wales
OCP	Organochlorine Pesticides
OEH	Office of Environment and Heritage
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PFAS	Per and Polyfluoroalkyl Substances
RAP	Remedial Action Plan
RPD	Relative Percent Difference
sVOC	Semi Volatile Organic Compounds
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
UCL	Upper Confidence Limit
VOC	Volatile Organic Compounds

Executive Summary

JBS&G Australia Pty Ltd (JBS&G) was engaged by Aqualand St Leonards Development 3 Pty Ltd (Aqualand, the Client) to undertake a combined preliminary and detailed site investigation (PSI/DSI) of a property known as the St Leonards South Development (the site). The site address on Berry Road and Holdsworth Avenue, area and legal identifiers are shown in **Table 2.1**. The site location is shown on **Figure 1**. The current site layout is shown on **Figures 2**.

It is understood Aqualand propose to develop the site to accommodate two residential buildings, with apartments, basement car parking, a public thoroughfare, a childcare centre, inclusive of an edible garden and playground (secret garden), and a community facility delivered on behalf of Lane Cove Council (Council).

This combined PSI/DSI report has been prepared to address the requirements of State Environmental Planning Policy No. 55 (SEPP 55¹) to support the development application (DA) submission for proposed mixed use development, and has been prepared in accordance with EPA made or approved guidelines including (EPA 1995²), NEPC (2013³), EPA (2020⁴) and EPA (2017⁵). The investigation objectives are to characterise potential contamination at the site, and to draw conclusions regarding the suitability of the site for mixed land uses or to make recommendations to enable such conclusions to be made.

The investigation included the advancement of 22 soil sampling locations and submission of selected samples for laboratory analysis for contaminants of potential concern COPC (**Figure 3**). The results of the investigation indicated that no exceedances of the adopted human health criteria were reported at soil sample locations. Zinc concentrations at a single location exceeded the adopted ecological criteria. This is not considered to pose an unacceptable risk under the proposed land use scenario, with the majority of fill underlying the site proposed to be exported offsite to facilitate the development scenario.

JBS&G note that a more conservative human health criteria (HIL A / HSL A) was applied to the site's potentially most susceptible receptor: the childcare centre and its ancillary facilities (edible garden and playground). It is also understood that final ground level within the proposed childcare centre area is located three metres below current level, and underlain by natural soils. Asbestos impacts to soil (bonded asbestos containing material (ACM) and asbestos fines/fibrous asbestos (AF/FA)) were not identified within samples at concentrations exceeding the adopted criteria. It must be noted that a singular location reported a trace concentration of asbestos within topsoil fill. Identified asbestos impacts at the site are not considered to pose an unacceptable health risk.

Across the broader site, topsoil is reported to contain isolated pockets of trace anthropogenic inclusions (brick/tile/glass/charcoal/etc). However, JBS&G do not consider this to represent an unacceptable aesthetic issue under the proposed development scenario (pursuant to NEPC 2013). Site fill materials are provisionally classified as General Solid Waste (GSW) (non-putrescible) under the assumption no asbestos is present. In instances where asbestos is present, materials would be classified as Special Waste (asbestos) in accordance with EPA (2014⁶) guidance.

¹ *Managing Land Contamination Planning Guidelines SEPP 55–Remediation of Land*. Department of Urban Affairs and Planning, August 1988 (DUAP 1998/SEPP 55)

² *Contaminated Sites: Sampling Design Guidelines*. NSW Environment Protection Authority 1995 (EPA 1995)

³ *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)*. National Environment Protection Council (NEPC 2013)

⁴ *Consultants Reporting on Contaminated Land*. Contaminated Land Guidelines. NSW EPA 2020 (EPA 2020)

⁵ *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme (3rd Edition)*. NSW Environment Protection Authority 2017 (EPA 2017)

⁶ *Waste Classification Guidelines Part 1: Classifying Waste*. NSW EPA 2014 (EPA 2014)

Based on the results of the investigation and subject to the limitations in **Section 12**, JBS&G conclude that from a contamination perspective the site is suitable for a mixed land use. JBS&G recommend soils surplus to development requirements should be appropriately classified for reuse and/or disposal; and given the presence of fill, an unexpected finds protocol should be developed and implemented in the event conditions different to those encountered during intrusive investigations.

1. Introduction

1.1 Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Aqualand St Leonard Development 3 Pty Ltd (Aqualand, the Client) to undertake a combined preliminary and detailed site investigation (PSI/DSI) of a property known as the St Leonards South Development (the site). The site address, area and legal identifiers are shown in **Table 2.1**. The site location is shown on **Figure 1**. The current site layout is shown on **Figures 2**.

The site is currently occupied by 10 residential dwellings. It is understood Aqualand propose to develop the site to accommodate two residential buildings, with apartments, basement car parking, a public thoroughfare, a childcare centre, inclusive of an edible garden and playground (secret garden), and a community facility delivered on behalf of Lane Cove Council (Council). This combined PSI/DSI report has been prepared to address the requirements of State Environmental Planning Policy No. 55 (SEPP 55⁷) to support the development application (DA) submission for proposed mixed use development, and has been prepared in accordance with EPA made or approved guidelines including (EPA 1995⁸), NEPC (2013⁹), EPA (2020¹⁰) and EPA (2017¹¹).

1.2 Objectives

The objectives of this combined PSI/DSI were to characterise potential contamination at the site, and to draw conclusions regarding the suitability of the site for mixed land uses or to make recommendations to enable such conclusions to be made.

1.3 Scope of Works

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

- A detailed site inspection by a suitably training and experienced environmental consultant.
- A review of available site history and background information to identify potential areas of environmental concern (AECs) and associated contaminants of potential concern (COPC) including:
 - Review of historical aerial photographs for the site and surrounds;
 - Review of publicly available heritage records for the site and surrounds;
 - The environmental setting including information relating to topography, geology, soils and hydrogeology of the site and surrounding areas;
 - Review of current Section 10.7 Planning Certificates obtained from Council for selected Lots: Lot 33 DP 7259, Lot 12 DP 7259, Lot A DP 110452;
 - Current and historical land title records for selected Lots: Lot 33 DP 7259, Lot 12 DP 7259, Lot A DP 110452;
 - Records of environmental incidents, former environmental licences, or contaminated land notices or notifications, as held by the EPA, including information with regards to per- and polyfluoroalkyl substances (PFAS) investigation programs;

⁷ *Managing Land Contamination Planning Guidelines SEPP 55–Remediation of Land*. Department of Urban Affairs and Planning, August 1988 (DUAP 1998/SEPP 55)

⁸ *Contaminated Sites: Sampling Design Guidelines*. NSW Environment Protection Authority 1995 (EPA 1995)

⁹ *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)*. National Environment Protection Council (NEPC 2013)

¹⁰ *Consultants Reporting on Contaminated Land*. Contaminated Land Guidelines. NSW EPA 2020 (EPA 2020)

¹¹ *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme (3rd Edition)*. NSW Environment Protection Authority 2017 (EPA 2017)

- Licensed groundwater bores present within a 1 km radius of the site; and
- Development and documentation of a conceptual site model (CSM) based on the available information;
- Completion of intrusive site investigations and laboratory sample analysis based on the CSM; and
- Preparation of this combined PSI/DSI report in general accordance with relevant EPA guidelines presenting the outcomes of the assessment and associate conclusions.

2. Site Condition and Surrounding Environment

2.1 Site Identification

The site location is shown on **Figure 1**. The current site layout is shown on **Figure 2**. The site details are summarised in **Table 2.1**.

Table 2.1 Summary Site Details

Address and Lot/DP	12 Berry Road, St Leonards, NSW, 2065	Lot 33 DP 7259
	14 Berry Road, St Leonards, NSW, 2065	Lot 32 DP 7259
	16 Berry Road, St Leonards, NSW, 2065	Lot 31 DP 7259
	18 Berry Road, St Leonards, NSW, 2065	Lot A DP 110452
	20 Berry Road, St Leonards, NSW, 2065	Lot B DP 110452
	11 Holdsworth Avenue, St Leonards, NSW, 2065	Lot 10 DP 7259
	13 Holdsworth Avenue, St Leonards, NSW, 2065	Lot 11 DP 7259
	15 Holdsworth Avenue, St Leonards, NSW, 2065	Lot 12 DP 7259
	17 Holdsworth Avenue, St Leonards, NSW, 2065	Lot 13 DP 7259
	19 Holdsworth Avenue, St Leonards, NSW, 2065	Lot 14 DP 7259
Site Area (m ²)	5,018	
Approximate Australian Height Datum (AHD)	74 m AHD	
Local Government Authority	Municipality of Lane Cove	
Site Geographic Coordinates (MGA 56)	E: 332731.125 N: 6255629.824	
Zoning	R4 High Density Residential Land Cove Local Environmental Plan (LEP)	
Previous Land Uses	Residential	
Current Land Uses	Residential	
Proposed Land Uses	Mixed Use (residential with minimal access to soil, road reserve and childcare/community facilities)	

2.2 Site Condition

A site inspection was undertaken on 6 and 7 January 2022 by Chris Dagger, one of JBS&G trained and experienced environmental consultants. At the time of the inspection the site comprised 10 allotments (10 properties) bound by Berry Road to the west and Holdsworth Avenue to the east. Large free-standing residences generally occupied the central lot extents, with yard areas (hardstand, lawn and garden beds) fronting Berry Road or Holdsworth Avenue and located to the rear of residences. Key observations made during the site inspection are summarised as follows:

- The site sloped from the north to south, southeast. Berry Road had an approximate elevation of 5 m above Holdsworth Avenue. Retaining walls for retention of soil/bedrock were apparent on a number of properties.
- A number of properties appeared to have been excavated into the north, northwest sloping terrain;
- Potential asbestos containing materials (ACM) were observed within some of the external structures of the buildings;
- Minor quantities of fill (growing media) were observed to have been imported to the site, and used for the establishment of flora (lawn, garden beds) at the front and rear of residences;
- Lot 13 (17 Holdsworth Avenue) comprised a construction site which appeared to have been vacant for some time;
- No ACM or stockpiled materials were observed on the ground surface;
- No external chemical storage was evident; and

- There was no evidence of distressed vegetation, surface staining or odours potentially associated with signs of contamination. Fly-tipped materials were not observed in areas inspected around the property boundary.

A photographic log of the site is provided in **Appendix B**.

2.3 Surrounding Land Use

The surrounding land uses were identified as follows:

- North - Residential properties are present to the north of the site. Marshall Avenue is present further to the north, beyond which are commercial office spaces and health care centres;
- East - Holdsworth Avenue is present to the east of the site, beyond which is residential dwellings;
- West - Berry Road is present to the west of the site, beyond which is residential dwellings; and
- South - Residential properties are present to the south of the site.

2.4 Topography

A review of topographic information obtained from SIX maps¹² indicates that the site has an elevation of approximately 70 m Australian Height Datum (AHD) within the northern site extent falling to approximately 60 m AHD within the southern, south-eastern site extent.

The site appears to have been subject to cut/fill with a number of properties cut into the north, northwest sloping terrain, with retaining walls used for retention of soil/bedrock purposes. During the site inspection, it was estimated that Berry Road had an approximate elevation of 5 m above Holdsworth Avenue.

2.5 Geology and Soils

Reference to the online ESPADE 2.1 tool hosted by the NSW Office of Environment and Heritage (OEH 2020¹³) and the 1:100 000 scale Sydney Series Geological Survey of NSW Sheet 9130 (DMR 1983¹⁴) indicates that the site is present within the following natural geological and soil landscapes:

- **Geology:** Wianamatta Group (Ashfield Shales) - consisting of laminite and dark grey shale, with occasional calcareous claystone, laminite and fine to medium grained lithic-quartz sandstone.
 - **Landscape:** Low rolling and steep hills with local relief typically between 50 - 120 m. Convex narrow (20 – 300 m) ridges and hillcrests with narrow concave drainage lines. Moderately inclined slopes of 10 – 15%.
- **Soils:** A review of the regional soil map (DLWC 2002¹⁵) indicated that the site is underlain by the Glenorie Soil Landscape Group. The soils are shallow to moderately deep (75 - 150 cm) red and brown Podzolic soils on upper slopes. Deep (>200 cm) Yellow Podzolic Soils and Gleyed Podzolic Soils along drainage lines.
 - **Limitations:** - high soil erosion hazard, localised impermeable highly plastic soil, moderately reactive.

¹² Spatial Information Exchange Viewer, NSW Land and Property Information accessed 14 January 2022, <https://maps.six.nsw.gov.au>

¹³ ESPADE 2.1. NSW Office of Environment and Heritage, accessed 14 January 2022 (OEH 2020);

¹⁴ Sydney 1:100 000 Geological Sheet 9130, 1st edition. 1983, Geological Survey of New South Wales, Sydney.

¹⁵ 1:100 000 Sydney Soil Landscape Series Sheet 9130 (2nd Edition). Department of Land and Water Conservation 2002 (DLWC 2002)

2.6 Acid Sulfate Soils

A review of the Department of Land and Water Conservation Acid Sulfate Soil Risk map (Edition Two) for Prospect/Parramatta¹⁶ River indicated that there is “No Known Occurrence” of acid sulfate soils (ASS) on site, consistent with the reported site geology and elevation.

2.7 Naturally Occurring Asbestos

A review of NSW Department of Planning, Industry & Environment (DPIE) mapping¹⁷ indicated the site is not within an area of naturally occurring asbestos.

2.8 Salinity Risk Map

A review of eSPADE¹⁸ indicated the site is not located within an area of salinity potential. No salinity indicators were observed during the site inspection.

2.9 Hydrology

No waterbodies are located on site.

The nearest surface water receptor is Berry Creek (freshwater ecosystem) located approximately 250 m south of the site. Berry Creek flows into Gore Cove (marine water ecosystem) located approximately 1 km south, southwest of the site.

Within the site, existing pavements/buildings occupy the majority of the properties, with yard areas (lawn, garden beds) located to the front and rear of residences. As such, rainfall within the site is anticipated to generally be controlled by the current internal stormwater network, draining towards the Berry Road or Holdsworth Avenue site boundaries and then into the local stormwater system. It is expected that regional stormwater flow occurs via below ground infrastructure to Berry Creek.

In unsealed sections of the site, rainfall is expected to infiltrate the site’s soils at a rate representative of the soils permeability, with the remainder of rainfall becoming surface water/over land flow, following the topographic gradient before being capture by the local stormwater system.

2.10 Hydrogeology

A search of licensed groundwater bores within 1.0 km of the site (**Appendix C**) was undertaken through the National Groundwater Information System (BoM 2021¹⁹) and is summarised in **Table 2.2**.

Table 2.2 Groundwater Bore Details

Bore ID	Use	Standing Water Level (m below ground surface (bgs))	Well Depth (m bgs)	Distance from site (km)	Lithology
GW072478	Domestic	48	180.5	0.8 km NW	Concrete 0-0.25m Moist Clay 2.5-5.1m Light Grey Sandstone interbedded with grey Shale 5.1m to end of hole
GW108224	Domestic	35	132.4	0.9 NE	Sandy clay 0-0.60m Sandstone and shale interbedded 0.60m

¹⁶ ‘Acid Sulphate Soil Risk Map – Index, 1997 1:25 000, Botany Bay, NSW Department of Land and Water Conservation (DLWC) REF: 91 30N3

¹⁷ *Naturally Occurring Asbestos in NSW*, NSW Department of Planning, Industry & Environment (DPIE), <https://trade.maps.arcgis.com/apps/PublicInformation/index.html?appid=87434b6ec7dd4aba8cb664d8e646fb06>, accessed on 24 January 2022 (DPIE 2022)

¹⁸ ESPADE NSW Office of Environment and Heritage, <https://www.environment.nsw.gov.au/eSpade2Webapp>, accessed on 6 December 2021

¹⁹ *National Groundwater Information System*, <http://www.bom.gov.au/water/groundwater/explorer/map.shtml>, accessed 24 January 2022, BoM (2022)

With reference to the regional geological and soil formation it is anticipated localised perched groundwater is considered likely to be present (albeit limited in extent) underlying the site in intermittent zones within localised (shallow) filled areas and at the soil/rock interface. Perched groundwater is anticipated to follow the topographic gradient.

Regional groundwater is expected to be encountered at significant depth located within fractures of the deeper shale (and sandstone) bedrock. Regionally, groundwater is anticipated to follow the topographic gradient and flow southeast towards the Sydney Harbour (Gore Cove).

2.11 Meteorology

A review of average climatic data for the nearest relevant Bureau of Meteorology monitoring location (Sydney Observatory Hill, Station ID 066062²⁰) indicates the site is located within the following meteorological setting:

- Average minimum temperatures vary from 8.1 °C in July to 18.9 °C in February;
- Average maximum temperatures vary from 16.4°C in July to 26.0 °C in January;
- The average annual rainfall is approximately 1213.4 mm, with rainfall greater than 1 mm occurring on an average of 99.5 days per year; and
- Monthly rainfall varies from 76.7 mm in October to 133.1 mm in June, with the wettest periods occurring on average between February and March.

²⁰ <http://www.bom.gov.au/climate/data/stations>, Commonwealth of Australia, 2021, Bureau of Meteorology, accessed on 6 December 2021

3. Site History

The following present a summary of site history.

3.1 Aerial Photographs

Historical aerial photographs dated 1930, 1943, 1961, 1970, 1986, 1991 and 2005 were obtained from the Land and Property Information Division of the Department of Finances and Services. Aerial photography from 2010 and 2021 were obtained from Nearmap imagery as presented in **Appendix D**. The aerial photograph review identified the following features in relation to the history of the site (**Table 3.1**).

Table 3.1: Summary of Historical Aerial Imagery Review

Year	Aerial Photograph Observations
1930	Site: The site comprised 9 residential properties, part of a larger residential estate. Residential style structures occupied the central lot extents with yard areas fronting road reserves and located to rear of the residences. Surrounds: The surrounding area appeared heavy developed and used for residential purposes.
1943	Site: The site appeared similar to the previous aerial photograph. Some minor additional and alterations to the built form were apparent. Surrounds: The surrounding land use appeared similar to the previous aerial photograph. Commercial land use fronting the Pacific Highway to the north of the site were apparent.
1951	Site: The site appeared similar to the previous aerial photograph. Some minor additional and alterations to the built form were apparent. Surrounds: The surrounding land use appeared similar to the previous aerial photograph.
1961	Site and Surrounds: The site and surrounds appeared similar to the previous aerial photograph. A slight increase in residential building density was apparent to the south.
1970	Site and Surrounds: The site and surrounds appeared similar to the previous aerial photograph. A slight increase in commercial land use was apparent located to the north of the site fronting the Pacific Highway.
1986	Site: The site appeared similar to the previous aerial photograph. Some additional and alterations to the built form were apparent. Surrounds: The surrounding land use appeared similar to the previous aerial photograph with the notable exception of an increase in commercial land use fronting the Pacific highway located to the north of the site.
1991	Site and Surrounds: The site and surrounds appeared similar to the previous aerial photograph. Some minor additional and alterations to the built form were apparent.
2005	Site: The site appeared similar to the previous aerial photograph with the notable exception of: • 17 Holdsworth Avenue comprised a vacant lot with the residence no longer apparent; and • Some minor additional and alterations to the built form were apparent for other allotment. Surrounds: The surrounding land use appeared similar to the previous aerial photograph.

Year	Aerial Photograph Observations
2010	Site: The site appeared similar to the previous aerial photograph with the notable exception of: • A residential style structure occupied 17 Holdsworth Avenue; • The residential structure at 13 Holdsworth Avenue had been demolished with a new residential structure and landscaped spaces; and • Some minor additional and alterations to the built form were apparent for other allotment. Surrounds: The surrounding land use appeared similar to the previous aerial photograph.
2021	Site: The site appeared similar to the previous aerial photograph with the notable exception of: • The roof to 17 Holdsworth Avenue was no longer apparent (construction site); and • Some minor additional and alterations to the built form were apparent for other allotment. Surrounds: An expansion of the commercial estate fronting the Pacific Highway was apparent with several residential structures no longer discernible.

3.2 EPA Records

A search of the NSW EPA's database was undertaken on 24 January 2022 by JBS&G for the site and immediate surrounds. The search comprised a review of the following (**Appendix E**):

- NSW EPA contaminated land public register of record of notices (under Section 58 of the *Contaminated Land Management Act 1997* (CLM Act));
- NSW contaminated sites notified to the EPA (under Section 60 of the *CLM Act*);
- NSW EPA *Protection of the Environment Operations Act 1997* (POEO Act) public register of licences, applications and notices (maintained under Section 308 of the *POEO Act*); and
- EPA's public per- and poly- fluoroalkyl substances (PFAS) register.

A search through the EPA's public contaminated land register identified that there have been no notices issued under the *CLM Act* for the site or immediate surround under Section 58 and Section 60.

A search through the EPA's public register of licenses, applications and notices under the *POEO Act* has identified there have been no records associated with the site. Further afield to the north Royal North Shore Hospital and ancillary health care facilities/business exist. Resultant in the presence of numerous licenses associated with medical waste disposal. Given the distance of these facilities to the site there is a low risk of contaminate migration to the site.

EPA's public per- and poly- fluoroalkyl substances (PFAS) register has identified that neither the site, nor those in the immediate area, have been notified to the EPA with regards to PFAS contamination.

3.3 Section 10.7 Planning Certificate Search

Section 10.7 (2) and (5) Planning certificates were obtained for the following selected Lot 33 DP 7259 (12 Berry Rd), Lot A DP 110452 (18 Berry Rd) and Lot 12 DP 7259 (15 Holdsworth Ave) as being representative of the site. Planning certificates were obtained from the Lane Cove Council and can be found in **Appendix F** and are summarised as follow:

- The land is subject to the Lane Cove LEP 2010;
- The land is zoned as Zone R4 High Density Residential;
- The land does not include any residential premises (within the meaning of Division 1A of Part 8 of the *Home Building Act 1989*) that are listed on the loose-fill asbestos insulation register that is required to be maintained under that Division;

- Under the *Contaminated Land Management Act 1997* and *Contaminated Land Management Amendment Act 2008*;
 - The land to which this certificate(s) relates has not been declared to be significantly contaminated land at the date when the certificate was issued;
 - The land to which the certificate relates is not subject to a management order at the date when the certificate was issued;
 - The land to which this certificate relates is not subject to an ongoing maintenance order as at the date when the certificate was issued; and
 - The land to which this certificate relates is not the subject of a site audit statement provided to the Council.

3.4 SafeWork NSW Dangerous Goods Records

A search of SafeWork NSW records for the storage of Dangerous Goods was not undertaken given the identified historic/current residential nature of the site and therefore the unlikely potential for positive search results.

3.5 Heritage Searches

A search of both the Australian Heritage Trust²¹ database and the NSW Heritage Inventory²² did not identify items of Australian or NSW historical significance on or in close proximity to the site (See **Section 3.6** for additional detail). A review of Section 10.7 planning certificates as obtained for representative lots of the site did not identify any heritage items at the site.

3.6 NSW Parish Maps and Local History Information

A review of available information online and a review of the Independent Planning Commission (IPCN) for historical information did not result in the identification of local historical articles pertaining to the site. However, a Heritage Impact Statement was completed for the immediate streets to the west (Portview and Park Road).

Review of the online tool hosted by Historic Photographs Australia (HPA), HPA (2017²³) did not result in the identification of photographs relevant to the site.

3.7 Historical Title Review

Historical land titles were obtained for selected Lots, Lot 33 DP 7259, Lot 12 DP 7259, Lot A DP 110452. Documentation obtained for the site is provided in **Appendix G**. The historical title details are summarised in below in **Table 3.2**.

Table 3.2: Historical Title Summary

Lot	Address	Description
Lot 33 DP 7259	12 Berry Road	Between 1923 to current the Lot has changed ownership 9 times. All holders of the property have used the premise for residential purposes.
Lot 12 DP 7259	18 Berry Road	Between 1923 to current the Lot has changed ownership 8 times. All holders of the property have used the premise for residential purposes.
Lot A DP 110452	15 Holdsworth Avenue	Between 1922 to current the Lot has changed ownership 10 times. All holders of the property have used the premise for residential purposes.

²¹ Australian Heritage Database, Department of Agriculture, Water and the Environment, accessed 24 January 2022

²² State Heritage Inventory, New South Wales Government, accessed 24 January 2022

²³ Sourced from Historic Photographs Australia, accessed 24 January 2022, <http://www.historicphotographs.com.au/searcher.asp?terms=epping&force=1&sitemode=2&country=2®ion=1&place=&startYear=0&endYear=0>

3.8 Fair Trading NSW Properties Affected by Loose Fill Asbestos Insulation

A search of the Fair-Trading NSW Loose-fill Asbestos Insulation (LFAI) Register (LFAI register²⁴) for the site addresses indicated the site was not registered as being affected by the presence of LFAI.

3.9 Integrity Assessment

Based on the range of sources and the general consistency of the historical information along with historical aerial photographs, it is considered that the historical assessment has an acceptable level of accuracy with respect to the identification of potentially contaminating activities historically occurring at the site.

²⁴ *Loose-fill Asbestos Insulation Register*, NSW Fair Trading accessed 7 December 2021, <https://www.fairtrading.nsw.gov.au/loose-fill-asbestos-insulation-register>

4. Previous Investigation

4.1 Due Diligence Investigation (JBS&G 2021²⁵)

JBS&G was engaged by Aqualand to undertake a review of land contamination of the site as part of Aqualand's commercial liability consideration with regards to the acquisition of the site. The objective of assessment was to provide a high-level desktop evaluation of potential constraints at the site in relation to known or inferred site contamination, and to subsequently provide a more quantitative assessment of contamination risks through intrusive investigations.

The scope of works comprised:

- A desktop review of site history and background information to identify potential AECs and associated COPCs;
- A detailed site inspection of 12 and 20 Berry Road and 13 and 19 Holdsworth Avenue, with the balance of the site inspected from Berry Road and Holdsworth Avenue;
- A limited program of soil assessment comprising advancement of 8 borehole locations, as shown on **Figure 3**;
- Analysis of selected soil samples at a National Association of Testing Authority (NATA) accredited laboratory for a range of COPCs including total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene and xylene (BTEX), organochlorine pesticides (OCPs), polychlorinated biphenyl (PCB), polycyclic aromatic hydrocarbons (PAHs), heavy metals, asbestos, CEC, pH and clay content (%) and TCLP/ASLP for metals and PAH; and
- Preparation of letter detailing the finding of the investigation.

Based on the desktop review, detailed site inspection and quantitative data, JBS&G (2021) concluded:

- The site is current and has historically been used for residential land use;
- Based on the historical and current land uses of the site, the potential for significant or widespread contamination at the site was considered to be low;
- AEC identified included the potential use of imported fill materials of unknown origins to create existing/former site levels; importation of growing media; and historical and existing site structures containing hazardous building material and in turn to have resulted in ground surface impacts;
- Fill material was encountered at all sampling locations to depths ranging from 0.2-0.8 m bgs. The fill typically comprised silty clay with varying levels of gravel and ash. The fill was underlain by natural silty clay or inferred sandstone bedrock, noting that refusal was encountered at locations HA01 (0.5 m), HA05 (0.3 m), HA06 (0.6-0.8 m) and HA08 (0.2 m) within sandstone.
- No visible ACM was identified during the soil assessment activities. In addition, there were no significant evidence of staining or odours potentially associated with contamination observed within the fill profile during the field works.
- All contaminant concentrations were below the adopted HIL-B: Residential with Minimal Access to soils pursuant to NEPC (2013) with the exception of one location with a benzo(a)pyrene concentration of 0.9 mg/kg, exceeding the adopted ecological criterion of

²⁵ Due Diligence Contamination Assessment, 12-20 Berry Rd & 11-19 Holdsworth Ave, St Leonards. JBS&G Australia Pty Ltd ref. 60615/136093 dated 25 March 2021 (JBS&G 2021)

0.8 mg/kg. The exceedance of the ecological criterion was attributed to the presence of ash and not considered to present an unacceptable ecological risk.

Field Logs are provided in **Appendix H**. Laboratory certificates of analysis are included in **Appendix I** and summarised in analytical tables in **Appendix A**. The results (field and analytical) have been incorporated into the finding of this report and have been found to be of an acceptable quality for the purpose of site characterisation.

5. Conceptual Site Model (CSM)

5.1 Potential Areas of Environmental Concern

Based on a combined review of the site history and observations made during the JBS&G inspection of the site, AECs have been identified and are presented in **Table 5.1**.

Table 5.1: Areas of Environmental Concern and Associated Contaminants of Potential Concern

Area of Environmental Concern (AEC)	Contaminant of Potential Concern (COPC)
Historical application of pesticides	Heavy metals, OCPs
Fill materials of unknown origin used to create former/existing site levels	Heavy metals, PAH, TRH, BTEX, OCPs, PCBs and asbestos
Historical and existing site structures containing hazardous building materials	Heavy metals (specifically lead paint and lead dust), and asbestos

Given the site history, site setting and following the desktop review, PFAS is not considered to be a COPC.

5.2 Potentially Contaminated Media

Potentially contaminated media present at the site include:

- Surface soils;
- Fill material;
- Natural soils; and
- Groundwater.

Residential land use may have led to the application of pesticides and or for hazardous building material deposition which in turn may have resulted in contamination of the site's soils. As such, surface soils are considered a potentially contaminated media.

While there are no specific historical records identifying fill material importation at the site, the site inspection has identified imported growing media and potential remains for fill material to have been imported to the site to create former/existing site levels, albeit very limited in extent. As such, fill material, where encountered, are considered to be a potentially contaminated media.

Based on the potential leachability of contaminants within surface soils/fill material, vertical migration of contamination from the fill material/surface soils into the underlying natural soils may have occurred. As such, the natural site soils are considered to be potentially contaminated media. However, they are likely to be limited in extent given the historical land use.

The potential for groundwater to be a contaminated medium is considered low based on the absence of any significant contamination identified during the previous investigation and historical site location/setting. As with the natural soils, the potential for contamination of groundwater will depend upon the actual nature, occurrence and characteristics of contamination within the overlying stratigraphy.

5.3 Potential for Migration

Contaminants generally migrate from site via a combination of windblown dusts, rainwater infiltration, groundwater migration and surface water runoff. The potential for contaminants to migrate is a combination of:

- The nature of the contaminants (solid/liquid and mobility characteristics);
- The extent of the contaminants (isolated or widespread);
- The location of the contaminants (surface soils or at depth); and

- The site topography, geology, hydrology and hydrogeology.

The potential contaminants identified as part of the site history review are generally in either a solid form (e.g. heavy metals, asbestos) and liquid form (e.g. pesticides, etc.), however, dependent upon concentrations, there is the potential for TRH/volatile organic compounds (VOCs) impacts to occur in a vapour form also in soils underlying the site.

As the site is largely occupied by buildings or grass covered, the potential for windblown dust migration of contamination from the site is generally low. The potential for contamination migration via surface water movement and infiltration of water and subsequent migration through the soil profile is considered to be low given the occurred of hardstand and the reported lithology of the site.

Given the relatively impermeable nature of the underlying clayey soils, migration of contamination via groundwater movement is considered to be a potential migration pathway, albeit low.

5.4 Potential Exposure Pathways

Based on the COPC identified in various media as discussed above, the exposure pathways for the Site include:

- Potential dermal contact with and ingestion of impacted soils and/or groundwater as present at shallow depths and/or accessible by future excavations; and / or
- Potential inhalation of COPC vapours migrating upwards and laterally from fill material of unknown origins; and/or
- Potential contaminant uptake by vegetation.

5.5 Receptors

Potential receptors of environmental impact present within the site which will require to be addressed with respect to the suitability of the site for the proposed use include:

- Future workers and landowners who may potentially be exposed to COPC through direct contact with impacted soils or inhalation of dusts/fibres associated with impacted soils; and/or
- Excavation/construction/maintenance workers conducting activities at the site, who may potentially be exposed to COPC through direct contact with impacted soils/groundwater present within excavations and/or inhalation of dusts/fibres associated with impacted soils; and/or
- Flora species to be established on the vegetated areas of the site; and/or
- The freshwater ecosystem of Berry Creek.

Where petroleum or other volatile hydrocarbon compound impact is identified, potential inhalation exposure to vapours may also need to be considered.

5.6 Preferential Pathways

For the purpose of this assessment, preferential pathways have been identified as natural and/or man-made pathways that result in the preferential migration of COPC as either liquids or gasses.

Man-made preferential pathways may be present at the site, associated with areas of filling, disturbed terrain and service easements

Natural preferential pathways are likely limited to natural lithological boundaries, such as between porous soils and weathered/residual bedrock, where infiltrating groundwater is vertically confined and begins to migrate laterally, and surface water drainage features.

6. Sampling and Analysis Plan

6.1 Data Quality Objectives

Data Quality Objectives (DQOs) have been developed for the investigation, as discussed in the following sections.

6.1.1 State the Problem

The site has historically been used for residential land use since the 1920s and is proposed to be developed for mixed land use. Historical land use may have resulted in land contamination.

In accordance with the requirements of SEPP 55, characterisation of the potential contamination conditions is required to assess whether the site is considered suitable for its proposed land use or can be made suitable for the proposed land use.

6.1.2 Identify the Decision

Based on the decision-making process for assessing urban redevelopment sites detailed in EPA (2017²⁶), the following decisions were made:

- Are there any unacceptable risks from contamination to likely future onsite receptors?
- Are there any issues relating to local area background soil concentrations that exceed the appropriate soil criteria?
- Are there any impacts of chemical mixtures?
- Are there any aesthetic issues?
- Is there any potential for contaminant migration from the site?
- Is the site suitable for the proposed land use?

6.1.3 Identify Inputs to the Decision

Inputs to the decisions are:

- The results of previous assessments relevant to the site, including background historical information, site observations, laboratory results and report findings;
- Environmental data collected by sampling and analysis and site observations made during the current investigation;
- Assessment criteria to be achieved as based on the intended land uses as defined by assessment criteria nominated in **Section 7**; and
- Confirmation that data generated by sampling and analysis are of an acceptable quality to allow reliable comparison to assessment criteria as undertaken by assessment of quality assurance/quality control (QA/QC) as per the data quality indicators (DQIs) established in **Section 8**.

6.1.4 Define the Study Boundaries

The study boundary comprises the extent of the site as shown on **Figure 2** and detailed in **Sections 2.1** and **2.2**. The vertical extent of the investigation was to a maximum depth of 1.4 m bgs. Due to the project objectives, seasonality was not assessed as part of this investigation. Data was therefore representative of the timing and duration of the investigation. Site investigation activities were undertaken in December 2021 and reported January 2022.

²⁶ Contaminated Land Management – Guidelines for the NSW Site Auditor Scheme (3rd Edition). NSW Environmental Protection Authority 2017 (EPA 2017)

6.1.5 Develop and Decision Rule

A summary of the decision rules for the assessment are presented in **Table 6.1**.

Table 6.1: Summary of Decision Rules

Decision Required to be Made	Decision Rule
1. Are there any unacceptable risks to on site future receptors from contamination?	Soil and water analytical data was compared against EPA endorsed criteria including NEPC (2013). For the characterisation soil sample sets, statistical analysis of the data was undertaken if required and in accordance with relevant guidance documents, to facilitate the decisions. The following statistical criteria were adopted with respect to soils, where appropriate: Either: the reported concentrations were all below the site criteria; Or: the average site concentration for each analyte was below the adopted site criterion; no single analyte concentration exceeded 250% of the adopted site criterion; and the standard deviation of the results was less than 50% of the site criterion. And: the 95% upper confidence limit (UCL) of the average concentration for each analyte was below the adopted site criterion. Where results were below criteria, and/or if the statistical criteria stated above were satisfied, the answer to the decision was No. Otherwise, the answer to the decision was Yes.
2. Are there any issues relating to the local area background soil concentrations that exceed appropriate soil criteria?	Analytical data in natural soil samples were compared to the background levels for urban areas of NSW as described in NEPC 2013. Where concentrations were less than the background levels, the answer to the decision was No. Otherwise, the answer to the decision was Yes.
3. Are there any chemical mixtures?	Were there more than one group of contaminants present which increase the risk of harm? If there was, the answer to the decision was Yes. Otherwise, the answer to the decision was No.
4. Are there any aesthetic issues associated with potentially impacted media at the site?	If there were any unacceptable odours, soil discolouration, or other aesthetic issues, the answer to the decision was Yes. Otherwise, the answer to the decision was No.
5. Is there any potential for contaminant migration from the site?	A qualitative assessment of contaminant sources, migration pathways and receptors were completed during assessment of investigation data collected. If the assessment identifies unacceptable risks to off-site receptors, the answer to the decision was Yes. Otherwise, the answer to the decision was No.
6. Is the site suitable for the proposed land use?	If the answer to any of the above decision questions was Yes, then additional assessment is required to draw conclusions regarding the suitability of the site for mixed land uses. If the answer to the above decision questions was No, then the site is suitable for the proposed land use.

6.1.6 Specific Limits on Decision Errors

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

Specific limits for this project were adopted in accordance with the appropriate guidance from the NSW EPA, NEPC (2013), appropriate indicators of DQIs used to assess QA/QC and standard JBS&G procedures for field sampling and handling.

To assess the usability of the data prior to making decisions, the data was assessed against pre-determined DQIs to assess precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS parameters). The acceptable limit on decision error was 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 6.2**.

- **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 to 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 laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted site assessment criteria.

Table 6.2 Summary of Data Quality Indicators

Data Quality Indicators	Frequency	Data Quality Criteria
Precision		
Split duplicates (intra laboratory)	1 / 20 samples	<50% RPD ¹ Asbestos samples in agreement
Blind duplicates (inter laboratory)	1 / 20 samples	<50% RPD ¹ Asbestos samples in agreement
Laboratory Duplicates	1 / 20 samples	<50% RPD ¹
Accuracy		
Surrogate spikes	All organic samples	70-130%
Laboratory control samples	1 per lab batch	70-130%
Matrix spikes	1 per lab batch	70-130%
Representativeness		
Sampling appropriate for media and analytes	All samples	.. ²
Samples extracted and analysed within holding times.	-	Organics (14 days) Inorganics (6 months)
Laboratory Blanks	1 per lab batch	<LOR
Trip spike	1 per lab batch	70-130% recovery
Trip blank	1 per lab batch	<LOR
Rinsate sample (reusable sampling equipment)	1 per sampling event/media	<LOR
Comparability		
Standard operating procedures for sample collection & handling	All Samples	All Samples
Standard 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

Note:

¹ If the RPD between duplicates is greater than the pre-determined data quality indicator, a judgment will be made as to whether the excess is critical in relation to the validation of the data set or unacceptable sampling error occurs in field.

² A qualitative assessment of compliance with standard procedures and appropriate sample collection methods will be completed during the DQI compliance assessment.

6.1.7 Optimise the Design for Obtaining Data

Various strategies for developing a statistically based sampling plan are identified in EPA (1995), including judgemental, random (targeted), systematic (grid) and stratified sampling patterns. With consideration to the desktop site history review and detailed site inspection, a systematic sampling plan was considered the most appropriate sampling regime.

For sites of 5,018 m², EPA (1995) *Sampling Design Guidelines* recommend a minimum of 14 systematic soil sampling locations. In accordance with EPA guidance, 14 sample locations were advanced across the site supplementing the 8 locations advanced in JBS&G 2021, resulting in a total of 22 sample locations. Sample locations were advanced on a general grid basis with some locations skewed to target AECs.

Based upon the objectives of the investigation and the available site use information, the density of the investigation undertaken is considered appropriate.

6.2 Sampling Methodology

6.2.1 In-situ Soil Sampling

Soil sample locations were advanced via the use of a 125 mm diameter hand auger at the density detailed in **Section 6.1.7** above. Soil characterisation samples were collected by one of JBS&G's appropriately trained and experienced environmental consultants.

Soil samples were collected from the ground surface (0-0.1) and then at regular intervals or change in stratigraphy to a maximum depth of 0.4 m into natural materials (or prior refusal), whichever was the shallower.

Samples were either obtained as a grab sample directly from the centre of the auger using a fresh pair of nitrile gloves or via the use of a hand trowel. Following collection of each sample, decontamination procedures in **Section 6.2.5** were applied.

During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indications of contamination were noted on the field documentation and photoionisation detector (PID) was used to assess the potential occurrence of volatile compounds.

Filed logs (both current and historical) are provided in **Appendix H**. Decontamination and calibration documentation are provided in **Appendix J**.

6.2.2 Field Screening

Where there was the potential for VOC impact, soil characterisation samples were screened using a PID to assess the presence of VOCs including petroleum hydrocarbons. Samples obtained for PID screening were placed in a sealed plastic bag for a period of approximately two to five minutes to equilibrate prior to a PID being attached to the bag. Readings were monitored for a period of approximately one minute or until values stabilised and the stabilised/highest reading was recorded on field notes.

Calibration documentation is provided in **Appendix J**.

6.2.3 Sample Handling

Collected soil samples were immediately transferred to sample containers of appropriate composition (glass jars for chemical analysis, plastic bags for asbestos). All jars were filled with no headspace to reduce the potential for loss of volatiles. Sample labels recorded: job number; sample identification number; and date of sampling.

Sample containers were transferred to a chilled ice box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form was completed and forwarded with the samples to the testing laboratory.

6.2.4 Soil Duplicate and Triplicate Sample Preparation

Field soil duplicate and triplicate samples were obtained using the methodology outlined above at a frequency of 1 in 20 primary samples for both field intra-laboratory duplicates and field inter-laboratory duplicates in accordance with recognised protocols (NEPC 2013 Schedule B[3]²⁷).

The soil samples were divided laterally into three samples with minimal disturbance to reduce the potential for loss of volatiles and placed in three clean glass jars and asbestos bags as relevant. Both the jars and bags were separately labelled as primary, duplicate and triplicate samples before being placed in the same chilled esky for laboratory transport.

²⁷ National Environmental Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013). Schedule B(3) Guideline on laboratory analysis of Potentially Contaminated Soils. National Environmental Protection Council (NEPC 2013, Schedule B[3]).

6.2.5 Soil Sampling Equipment Decontamination

Where non-disposable equipment (trowel/auger) was utilised for sampling of material, the following procedure was used to clean the equipment prior to the collection of each sample:

- Scrubbing with a wire brush to remove gross contamination;
- Spray with Decon 90 detergent and tap water mix;
- Spray rinse with tap water; and
- Air drying.

Where non-disposable soil sampling equipment was used for the collection of samples for chemical analysis, rinsate samples were obtained during the field decontamination procedures at regular intervals during sampling events. The rinsate samples were obtained by rinsing the sampling equipment with laboratory grade demineralised water following the decontamination procedure. The rinsate water samples were appropriately preserved and stored with the site characterisation samples prior to transport to the laboratory for analytical analysis.

6.3 Laboratory Analysis

Eurofins MGT (Eurofins) were engaged as the primary laboratory for the required analyses. The secondary laboratory used for the works was Envirolab Services Pty Ltd (Envirolab). All laboratories used were NATA registered for the analyses requested at the relevant laboratory. In addition, the laboratories were required to meet JBS&G's internal QA/QC requirements.

Laboratory analysis methods and limits of reporting for relevant soil contaminants are identified in laboratory reports provided as **Appendix I**.

The analytical schedule adopted for the investigation is summarised **Table 6.3**.

Table 6.3: Laboratory Schedule

Media	No. of sampling Locations	Analyses (exc. QA/QC)
Collected As Part of the 2022 Assessment		
Soil	14 locations	Heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) – 14 samples PAHs – 14 samples TRH, BTEX – 8 Samples Asbestos – 12 samples (500 mL per NEPC 2013) + visual OCPs – 9 samples PCBs – 9 samples TCLP/ASLP (metals/PAH) – 4 samples pH, CEC, % clay – 2 samples (to derive ecological criteria)
Summary of Analysis in JBS&G (2021)		
Soil	8 locations	Heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) – 11 samples PAHs – 11 samples TRH, BTEX – 8 Samples Asbestos – 8 samples (500 mL per NEPC 2013) + visual OCPs – 8 samples PCBs – 8 samples TCLP/ASLP (metals/PAH) – 6 samples pH, CEC, % clay – 1 samples (to derive ecological criteria)

In addition to the primary sample analyses as outlined in **Table 6.3**, field QA/QC samples were collected/prepared and submitted for analysis at the densities required to meet the project DQI requirements outlined in **Table 6.2**.

7. Guidelines and Criteria

7.1 Regulatory Guidelines

Development of site assessment criteria and the associated scope of investigation was undertaken with consideration to aspects of the following guidelines, as relevant:

- *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)*, National Environment Protection Council (NEPC 2013);
- *Contaminated Sites: Sampling Design Guidelines*, NSW EPA, 1995 (EPA 1995);
- *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land*, NSW EPA, May 2020 (EPA 2020);
- *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme*, 3rd Edition, NSW EPA, 2017 (EPA 2017);
- *CRCCARE Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater*, 2011, Friebe and Nadebaum (CRCCARE 2011);
- *Waste Classification Guidelines, Part 1: Classifying Waste*, November 2014, NSW EPA (EPA 2014);
- *Australia and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG 2018); and
- *Guidelines for Managing Risks in Recreational Water*, National Health and Medical Research Council, 2008 (NHMRC 2008).

7.2 Assessment Criteria

7.2.1 Soil Criteria

The development will result in the construction of a mixed-use development including two residential buildings, with apartments, basement car parking, a public thoroughfare (road reserve), a childcare centre, inclusive of an edible garden and playground (secret garden), and a community facility delivered on behalf of Lane Cove Council (Council). Based on the proposed development incorporating medium density residential housing and a child care centre the analytical data from the soil investigation were compared against two sets of criteria's as illustrated on **Figure 4**:

Criteria A: Childcare centre, inclusive of an edible garden and playground, and community facilities:

- Health based Investigation Levels (HILs) for residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake, (no poultry), also includes children's day care centres, preschools and primary schools (HIL-A) land use (NEPC 2013);
- Health Screening Levels (HSLs) for petroleum hydrocarbons considering potential for vapour intrusion, fine grained soil for low-high density residential (HSL A & B) land use at 0.0-1.0 m depth (NEPC 2013);
- Generic and site-specific ecological investigation levels (EILs) were derived through the added contaminant limits for Urban residential/public open space land use (NEPC 2013);
- Management Limits for TRH, fine grained soils for residential, parkland and public open space land use (NEPC 2013);
- Ecological Screening Levels (ESLs) for TRH fractions, BTEX and benzo(a)pyrene in fine grained soil for Urban residential and public open space land use (NEPC 2013); and

Where there are no NSW EPA endorsed thresholds for individual contaminants, the laboratory limit of reporting (LOR) has been adopted as an initial validation screening value for the purposes of this assessment. **Criteria B:** The remaining site extent:

- Health based Investigation Levels (HILs) for residential with minimal access to soils (HIL-B) land use (NEPC 2013);
- Health Screening Levels (HSLs) for petroleum hydrocarbons considering potential for vapour intrusion, fine grained soil for low-high density residential (HSL A & B) land use at 0.0-1.0 m depth (NEPC 2013);
- Generic and site-specific ecological investigation levels (EILs) were derived through the added contaminant limits for urban residential/public open space land use (NEPC 2013);
- Management Limits for TRH, fine grained soils for residential, parkland and public open space land use (NEPC 2013);
- Ecological Screening Levels (ESLs) for TRH fractions, BTEX and benzo(a)pyrene in fine grained soil for urban residential and public open space land use (NEPC 2013); and
- Where there are no NSW EPA endorsed thresholds for individual contaminants, the laboratory limit of reporting (LOR) has been adopted as an initial validation screening value for the purposes of this assessment.

Consideration was also given to aesthetic aspects, consistent with EPA (2017) and NEPC (2013) guidance. Consideration was also given to the static criteria in **Table 6.1**.

Generic EILs for arsenic, DDT, and naphthalene are provided in NEPM (2013). Site specific EILs for lead, copper, nickel, chromium, and zinc were calculated based on the most conservative added contaminant limits (ACLs) and site-specific physicochemical data and combined with the ABCs published in Olzworthy 1995 et al. 1995.

The ecological criteria presented in **Table A** are based on site-specific soil properties using the following site laboratory results:

- Average CEC of 12 meq/100 g;
- Average soil pH of 6.5 pH units; and
- Average percentage of clay content of 6 %.

Based on this information the following criteria for chromium, copper, lead, zinc, and nickel in **Table 7.1** were derived for a residential with minimal access to soils (HIL-B) land use.

Table 7.1: Derived Site Specific EILs (mg/kg)

pH ³	CEC	Clay Content	Component	Cr (III)	Cu	Pb	Zn	Ni
6.5	12 mol _c /kg	6%	ABC ¹	15	52	1454	230	7
			ACL ²	320	190	1100	400	170
			EIL (ABC + ACL)	335	242	2554	630	177

(1) Ambient background concentration (ABC), presented for this site as 'trace elements in urban soils (0-150 mm), old suburb with high traffic'.

(2) Added contaminant limits (ACL), for aged soils based on pH, CEC and/or clay content values from NEPC 2013 for commercial/industrial land use for relevant metals.

(3) pH calculated for this site as concentration of pH of a representative sample from the fill material.

7.2.2 Waste Classification Criteria

Soil results were also compared with waste classification criteria in EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste*, to provide for preliminary classification of soil.

8. Quality Assurance/Quality Control

An assessment of QA/QC was undertaken by calculation of DQIs for the data generated as part of the investigation.

In relation to PARCCS parameters presented in **Section 6.1.6**, compliance with the pre-determined DQIs established for characterisation of the investigation area is discussed in **Appendix K**.

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 site.

9. Soil Results

9.1 Field Observations

The lithology encountered at the site during the field works is summarised below. Soil profile logs are provided in **Appendix H**.

A total of 22 sampling locations as part of JBS&G (2021) and the current, 2022, assessment were completed. Sample locations are shown on **Figure 3**.

Fill materials were noted to range from 0.2 m bgs (HA02, HA04, HA08 (2022), plus locations HA07 and HA08 (JBS&G 2021) to 0.8 m bgs (HA10, HA14 (2022), plus location HA03 (JBS&G 2021)). Fill material generally comprised heterogenous damp dark brown silty clay with trace level inclusions of tile, glass, brick, asphalt/charcoal, wood, fibreboard and minor gravel inclusions of sandstone and ironstone.

Natural soils were encountered underlying fill material and comprised heterogenous damp brownish-yellow sandy clay.

Soils were observed to be dry, however no groundwater or perched water was observed in the advanced locations. Furthermore, no odours, staining, ACM, or other indicators of potential gross contamination of soils were observed during the investigations (2021 and 2022).

9.2 Analytical Results

The soil sampling locations are shown on **Figure 3**, the adopted land use criteria extents are shown on **Figure 4**, and summarised laboratory results are presented in **Table A (Appendix A)**. Detailed laboratory reports and chain of custody documentation are provided in **Appendix I**.

Analytical results are discussed in the following sections.

9.2.1 Metals

A total of 25 soil samples were submitted for heavy metal laboratory analysis. All concentrations were below the relevant adopted health and ecological assessment criteria's with the exception of HA10_0.2-0.3 (2022) in which Zinc reported a concentration of 1400 mg/kg exceeding the site specific EIL of 630 mg/kg.

Statistical analysis of the Zinc dataset identified that the 95% upper confidence limit (UCL) of the mean concentration (841 mg/kg) also exceeded the NEPC (2013) derived criterion of 630 mg/kg.

9.2.2 TRH/BTEX

A total of 16 soil samples were submitted for TRH and BTEX laboratory analysis. All concentrations were below the adopted health and ecological assessment criteria.

9.2.3 PAHs

A total of 29 soil samples were submitted for laboratory analysis for a range of PAHs including carcinogenic PAHs as benzo(a)pyrene toxic equivalent quotient (TEQ). All concentrations were below the adopted health assessment criteria. All concentrations were below the adopted ecological assessment criteria with the exception of:

- HA08_0.0-0.1 (2022) with a benzo(a)pyrene concentration of 1.6 mg/kg, marginally exceeding the adopted criterion of 0.8 mg/kg.
- HA07_0.0-0.1 (JBS&G 2021) with a benzo(a)pyrene concentration of 0.9 mg/kg, marginally exceeding the adopted criterion of 0.8 mg/kg.

Statistical analysis of the benzo(a)pyrene dataset identified that the 95% upper confidence limit (UCL) of the mean concentration (0.768 mg/kg) exceeding the NEPC (2013) derived criterion of

0.7 mg/kg. Recent advice from the NSW EPA (2019²⁸) has indicated that the 2013 criteria is overly conservative and that a B(a)P criteria of 28 mg/kg (public open space) and 67 mg/kg (commercial/industrial) is more appropriate. As such, these criteria have been adopted for this investigation. The standard deviation derived from the statistical analysis is less than half the criterion and the maximum concentration is less than 250% of the criterion. As such it is considered unlikely that benzo(a)pyrene will pose an unacceptable risk to future on-site ecological receptors within the materials assessed.

Moreover, there is expected to be limited on-site ecological receptors under the proposed development.

Statistical evaluation of the data set is provided in **Appendix L**.

9.2.4 OCPs/PCBs

A total of 17 soil samples were submitted for laboratory analysis for range of OCPs and PCBs. All concentrations were below the adopted health and ecological assessment criteria.

9.2.5 Asbestos

During intrusive investigations, ACM fragments were not visually identified within the fill soil profile.

A total of 20 soil samples were screening by the laboratory for the presence of asbestos. All concentrations were reported below the adopted health assessment criteria. At sample location HA07_0.0-0.1 (2022) a trace level of amosite and chrysotile asbestos had a reported mass of 0.0017g, however this concentration is below the Health screen levels for asbestos (HSL B).

9.2.6 Leachability Analysis

Comparison of the total contaminant concentrations with the NSW EPA (2014) assessment criteria identified a range of samples with total levels of lead and benzo(a)pyrene exceeding the CT1 thresholds presented in NSW EPA (2014) for waste classification without toxicity characteristic leaching procedure (TCLP) analysis (**Table A**).

Samples with the highest reported total concentrations (of lead and benzo(a)pyrene) were subsequently scheduled for TCLP analysis to inform a preliminary waste classification of materials on-site. The leachate results are presented in **Table B**. The leachable concentrations of heavy metals and/or benzo(a)pyrene from the six samples analysed were below the TCLP1 values presented in EPA (2014), providing a preliminary classification for fill materials of general solid waste (GSW).

²⁸ Langdon k. NSW Office of Environment and Heritage, Environment Protection Science Branch. 2019. Review of CRC Care Technical Report 39: Risk-based management and remediation guidance for BaP.

10. Discussion

The results are discussed in the following sections in relation to the identified decisions developed as part of the DQO process (**Table 6.2**).

10.1 Potential Risks to Future Onsite Receptors

The detailed site inspection and subsequent intrusive investigation did not identify ACM, staining, odorous soils or other indicators of potential land contamination.

All concentrations of COPC in soil were reported below the adopted site assessment criteria, except for a minor exceedance of the Zinc ecological criteria in shallow fill.

Based on site physical observations and laboratory analytical results, fill material/natural soils are considered not to represent an unacceptable risk to current or future on-site receptors with respect to permissible land uses.

10.2 Background Soil Concentrations

In-situ natural site soils were analysed as part of the assessment. Reported contaminant concentrations present within natural soils were all within background levels when the results were compared to the background levels for urban areas published in NEPC (2013). On this basis, there are considered to not be any issues associated with background soil concentrations that require further consideration.

10.3 Chemical Mixtures

There were no potential chemical mixtures identified during the investigation that may pose an unacceptable contamination issue with respect to development and/or future permissible land uses.

10.4 Aesthetic Issues

Inspection of the ground surface and excavated spoil was undertaken during the intrusive investigation for the presence of discolouration, fibrous cement fragments that may contain asbestos or other indications of potentially land contamination. The inspection did not identify the presence of odorous soils, hydrocarbon staining, extraneous anthropogenic materials, ACM or other inclusion which may represent an aesthetics issue.

On this basis, fill materials are considered to represent an aesthetics issue requiring remediation/management.

10.5 Potential Migration of Contaminants

The potential for migration of contaminants from the site was considered to be low and not represent an unacceptable risk based on the following:

- Site investigations did not identify potential indicators of contamination;
- The absence of identified contaminant impacts in surface and subsurface soil;
- The encountered site and regional geology/lithology; and
- Given that the site is sealed with grass cover or hardstands, acting to minimise the dust and water erosion potential of the site.

10.6 Site Suitability

Based on the findings of the assessment and subject to the limitations in **Section 12** the site is considered suitable for the proposed land use.

11. Conclusion and Recommendations

Based on the investigation findings and subject to the limitations in **Section 12**, it is considered that the site is suitable for a mixed land use from a contamination perspective.

During the redevelopment of the site, it is recommended:

- Soils surplus to development requirements should be appropriately classified for reuse and/or disposal; and
- Given the presence of fill, an unexpected finds protocol should be developed and implemented in the event conditions different to those encountered during intrusive investigations.

12. 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.

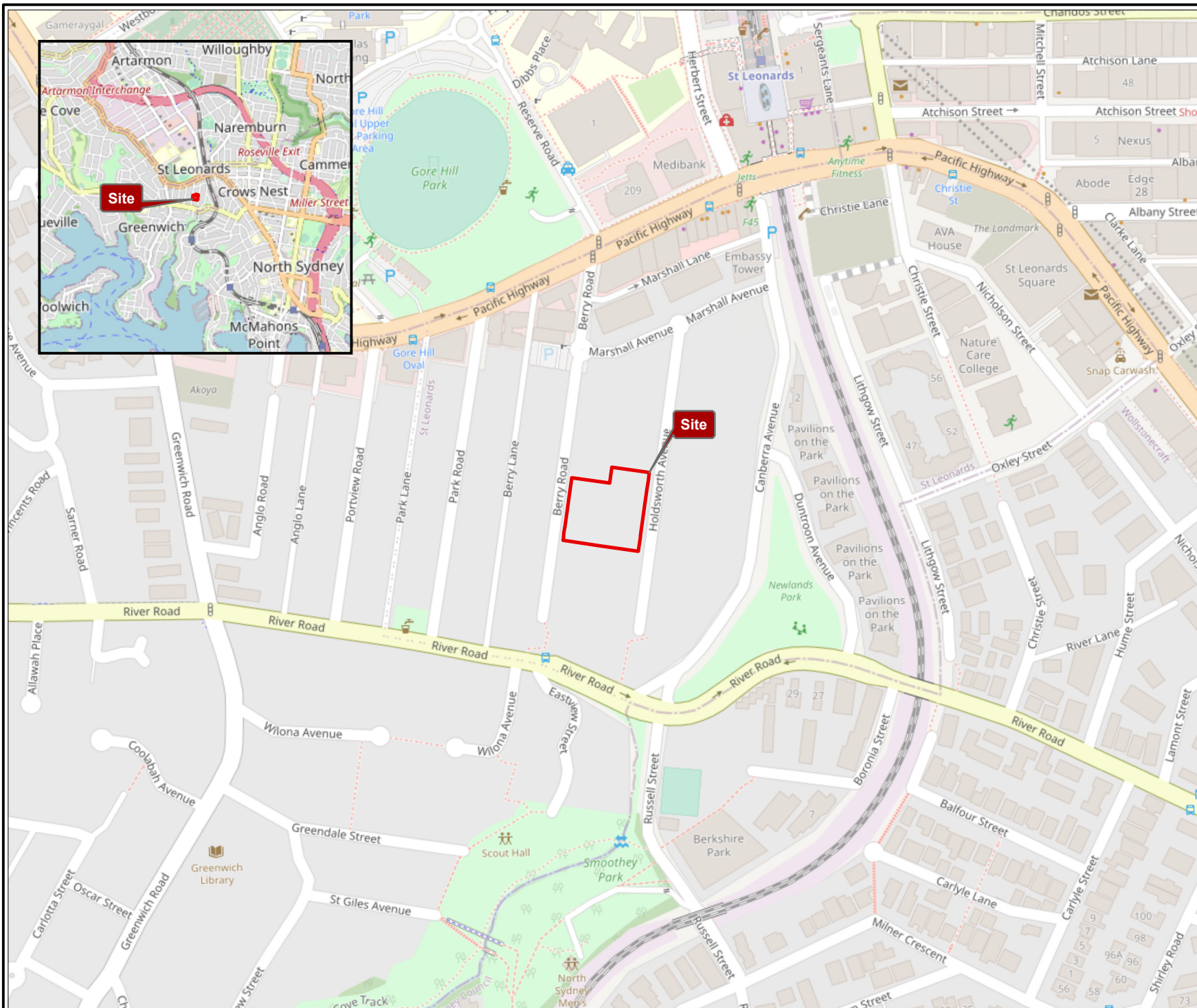
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the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



Job No: 62180

Client: Aqualand

Version: R01 Rev A Date 28/01/2022

Drawn By: RF Checked By: CD

Scale 1:5,000

0 50 100
metres

Coord. Sys. GDA 1994 MGA Zone 56

**12-20 Berry Road
11-19 Holdsworth Avenue
St Leonards, NSW**

SITE LAYOUT

FIGURE 1



Legend

- Approximate Site Boundary
- NSW Cadastre (DFSI, 2021)



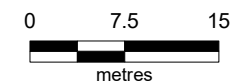
Job No: 62180

Client: Aqualand

Version: R01 Rev A Date 28/01/2022

Drawn By: RF Checked By: CD

Scale 1:600



Coord. Sys. GDA 1994 MGA Zone 56

**12-20 Berry Road
11-19 Holdsworth Avenue
St Leonards, NSW**

SITE LAYOUT

FIGURE 2



Legend

- ▬ Approximate Site Boundary
- ▬ NSW Cadastre (DFS, 2021)
- Sample Location (Current, 2022)

Historical Sample Locations

- ⊗ Hand Auger Location (JBS&G March 2021)



Job No: 62180

Client: Aqualand

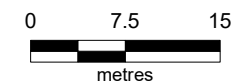
Version: R01 Rev A

Date 28/01/2022

Drawn By: RF

Checked By: CD

Scale 1:600



Coord. Sys. GDA 1994 MGA Zone 56

**12-20 Berry Road
11-19 Holdsworth Avenue
St Leonards, NSW**

SAMPLE LOCATIONS

FIGURE 3



Legend

- Approximate Site Boundary
- NSW Cadastre (DFSI, 2021)
- Sample Location (Current, 2022)

Historical Sample Locations

- ✕ Hand Auger Location (JBS&G March 2021)

Site Criteria

- Criteria A
- Criteria B



Job No: 62180

Client: Aqualand

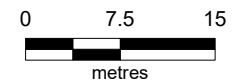
Version: R01 Rev A

Date 14/06/2022

Drawn By: AB

Checked By: CD

Scale 1:600



Coord. Sys. GDA 1994 MGA Zone 56

12-20 Berry Road
11-19 Holdsworth Avenue
St Leonards, NSW

**SAMPLE LOCATIONS AND
SITE CRITERIA**

FIGURE 4

Appendix A Summary Tables

Table A: Soil Analytical Results
Project Number: 62180
Project Name: St Leonards South

[illegible]

Sample ID	Parent Sample	Criteria	Material Type	Date	Report Number	Monitoring Round																												
Current Assessment (2022)																																		
HA01_0-0-0.1		Criteria B	Fill	13/01/2022	857006	January 2022	6	1.4	20	87	500	0.1	10	450	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	
HA02_0-0-0.1		Criteria B	Fill	13/01/2022	857006	January 2022	<2	<0.4	<5	<5	11	<0.1	<5	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA04_0-0-0.1		Criteria A	Fill	13/01/2022	857006	January 2022	3.5	<0.4	5.1	6.1	26	<0.1	<5	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA05_0-0-0.1		Criteria B	Fill	13/01/2022	857006	January 2022	4.1	<0.4	<5	5.7	32	<0.1	<5	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA05_0-2-0.3		Criteria B	Fill	13/01/2022	857006	January 2022	<2	<0.4	5.7	9.4	11	<0.1	<5	53	<20	25	96	79	200	<20	<50	140	<100	140	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	
HA06_0-0-0.1		Criteria B	Fill	13/01/2022	857006	January 2022	4.5	<0.4	9.4	56	100	0.2	<5	39	<20	<20	120	150	270	<20	<50	200	<100	200	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	
HA07_0-0-0.1		Criteria B	Fill	13/01/2022	857006	January 2022	20	<0.4	24	140	210	<0.1	6.1	270	<20	<20	100	120	220	<20	<50	210	<100	210	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	
QA01	HA07_0-0-0.1	Criteria B	Fill	14/01/2022	286699	January 2022	13	<0.4	15	39	150	<0.1	4	170	<25	<50	<100	<100	<50	<25	<50	<100	<100	<50	<25	<50	<0.2	<0.5	<1	<1	<2	<3	-	
QC01	HA07_0-0-0.1	Criteria B	Fill	13/01/2022	857006	January 2022	22	<0.4	25	67	220	<0.1	8.4	390	<20	<20	90	140	230	<20	<50	180	<100	180	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	
HA07_0-5-0.6		Criteria B	Natural	13/01/2022	857006	January 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA08_0-0-0.1		Criteria B	Fill	13/01/2022	857006	January 2022	8.6	0.5	16	60	250	0.1	7.5	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA09_0-0-0.1		Criteria B	Fill	13/01/2022	857006	January 2022	9	0.5	16	64	260	0.4	5.6	170	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	
HA09_0-5-0.6		Criteria B	Fill	13/01/2022	857006	January 2022	-	-	-	-	-	-	-	-	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	
HA10_0-2-0.3		Criteria B	Fill	13/01/2022	857006	January 2022	18	2.9	35	200	1200	0.8	10	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA11_0-0-0.1		Criteria B	Fill	13/01/2022	857006	January 2022	3.3	<0.4	7.2	17	72	<0.1	<5	89	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	
HA12_0-0-0.1		Criteria B	Fill	13/01/2022	857006	January 2022	7.1	<0.4	16	<5	22	<0.1	<5	7	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	
HA13_0-4-0.5		Criteria B	Natural	13/01/2022	857006	January 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA14_0-0-0.1		Criteria B	Fill	13/01/2022	857006	January 2022	4.2	<0.4	12	15	42	<0.1	<5	83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA14_0-2-0.3		Criteria B	Fill	13/01/2022	857006	January 2022	8.4	<0.4	20	15	68	<0.1	<5	62	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	
JB&SG 2021																																		
HA01_0-2-0.3 (MAR 21)		Criteria A	Fill	19/03/2021	781709	March 2021	8.5	<0.4	17	30	71	<0.1	<5	79	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	
HA02_0-0.1 (MAR 21)		Criteria B	Fill	19/03/2021	781709	March 2021	11	<0.4	34	24	26	<0.1	5.3	54	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	
HA03_0-0-0.1 (MAR 21)		Criteria B	Fill	19/03/2021	782203	March 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA03_0-0.1 (MAR 21)		Criteria B	Fill	19/03/2021	781709	March 2021	4.8	1.2	17	59	370	0.2	6	200	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	
QA01 (MAR 21)	HA03_0-0.1	Criteria B	Fill	19/03/2021	264732	March 2021	5	0.5	16	45	250	0.2	5	140	<25	<50	<100	<100	-	<25	<50	<100	<100	<50	<25	<50	<0.2	<0.5	<1	<1	<2	<3	-	
QC01 (MAR 21)	HA03_0-0.1	Criteria B	Fill	19/03/2021	781709	March 2021	7.4	<0.4	22	35	200	<0.1	6.2	140	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	
HA03_1.0-1.1 (MAR 21)		Criteria B	Natural	19/03/2021	781709	March 2021	5.2	<0.4	11	19	110	0.2	<5	110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA04_0-2-0.3 (MAR 21)		Criteria B	Natural	19/03/2021	781709	March 2021	11	0.6	22	56	170	0.1	<5	220	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	
HA05_0-0.1 (MAR 21)		Criteria B	Fill	19/03/2021	781709	March 2021	6.4	<0.4	16	9.6	100	<0.1	<5	81	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	
HA06_0-5-0.6 (MAR 21)		Criteria B	Fill	19/03/2021	781709	March 2021	9.9	<0.4	20	7.3	21	<0.1	<5	7	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	
HA06_0-7-0.8 (MAR 21)		Criteria B	Natural	19/03/2021	781709	March 2021	9.7	<0.4	19	5.4	24	<0.1	<5	5.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA07_0-0.1 (MAR 21)		Criteria B	Fill	19/03/2021	781709	March 2021	5.5	<0.4	14	25	160	<0.1	<5	200	<20	<20	74	<50	74	<20	<50	100	<100	100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	
HA07_0-2-0.3 (MAR 21)		Criteria B	Natural	19/03/2021	781709	March 2021	12	<0.4	29	17	68	<0.1	<5	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA08_0-0.1 (MAR 21)		Criteria B	Fill	19/03/2021	781709	March 2021	8.6	<0.4	21	<5	26	<0.1	<5	6.2	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	

Criteria:
Due to the mixed land uses proposed for the site, two sets of criteria have been developed. As discussed in **Section 7.2** within the DIS (document number: 145904).
Criteria A applies to land uses relating to the childcare centre, inclusive of an edible garden and playground, and community facilities.
Criteria B applies to land uses relating to the remaining site extent (urban residential with minimal access to soils).

Inv Stds Comments

- #1: Arsenic: HIL assumes 70% oral bioavailability, Site-specific bioavailability maybe important and should be considered where appropriate (refer Schedule B7).
- #2: Trigger Value adopted from Chromium (VI)
- #3: Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
- #4: Elemental mercury: HIL does not address elemental mercury, a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
- #5: Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
- #6: Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
- #7: PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
- #8: Derived soil HSL exceeds soil saturation concentration. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
- #9: Derived soil HSL exceeds soil saturation concentration. To obtain F2 subtract naphthalene from the >C10-C16 fraction
- #10: Derived soil HSL exceeds soil saturation concentration
- #11: Aged values apply to arsenic contamination present in soil > 2 years. Refer Schedule B5c for < 2 years.
- #12: Trigger Value taken for Chromium (III), Clay Content of 1%
- #13: Trigger Value taken for pH 4.5
- #14: Trigger Value taken for CEC 5
- #15: Trigger Value taken for pH 4 and CEC 5
- #16: ESLs are of low reliability
- #17: ESLs are of moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
- #18: ESLs are of moderate reliability. To obtain F2 subtract naphthalene from the >C10 - C16 fraction.
- #19: Separate management limits for BTEX & naphthalene are not available hence should not be subtracted from the relevant fractions to obtain F1 & F2.
- #20: Residential B with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.
- #21: 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.
- #22: Trigger value adopted from Chromium VI
- #23: Approximate range of petroleum hydrocarbon fractions: petrol C6-C9, kerosene C10-C18, diesel C12-C18, and lubricating oils above C18. Refer to NSW Waste Criteria Nov 2014 p.12 footnote 7
- #24: There may be a need for the laboratory to concentrate the sample to achieve the TCLP limit value for benzo[a]pyrene with confidence. Refer to NSW Waste Criteria Nov 2014 p.11 footnote 2
- #25: Polychlorinated biphenyls must be managed in accordance with the EPA's polychlorinated biphenyl (PCB) chemical control order 1997. Refer to NSW Waste Criteria Nov 2014 p.12 footnote 8
- #26: Refer to NSW Waste Criteria Nov 2014 p.17 footnote 13
- #27: Calculated from Hazardous Waste: Identification and Listing [USEPA 2012a]. Refer to NSW Waste Criteria Nov 2014 p.16 footnote 3, 4
- #28: Refer to NSW Waste Criteria Nov 2014 p.17 footnote 12

Data Comments

#1 No asbestos detected at the reporting limit of 0.001% w/w.*Organic fibre detected.No trace asbestos detected.

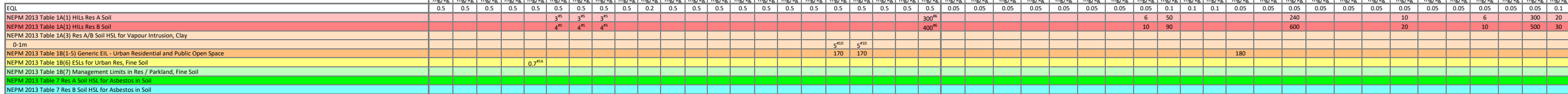
#2 No respirable fibres detected.

#3 No trace asbestos detected.

#4 Organic fibres detected.

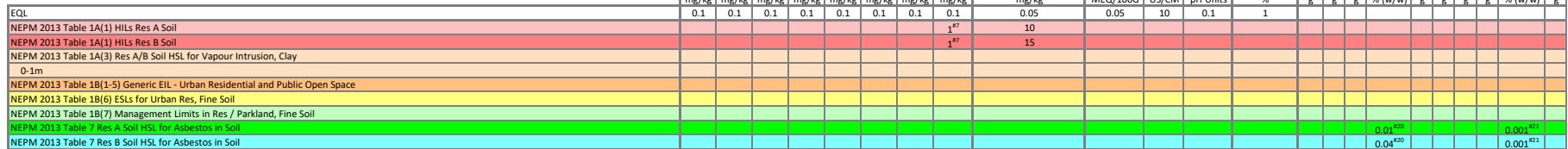
#5 Trace levels of Chrysotile and Amosite asbestos reported (0.0017g)

Project Number: 62180
Project Name: St Leonards South



Criteria: Due to the mixed land uses proposed for the site, two sets of criteria have been developed as discussed in Section 7.2 within the DIS (document number: Criteria A applies to land uses relating to the childcare centre, inclusive of an edible garden and playground, and community facilities. Criteria B applies to land uses relating to the remaining site extent (urban residential with minimal access to soils).	
Env Stds Comments #1:Arsernic; HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Shedule B7) #2:Trigger Value adopted from Chromium (VI) #3:Lead; HILs A,B,C based on blood lead models (EUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability sho #4:Elemental mercury; HIL does not address elemental mercury, a site specific assessment should be considered if elemental mercury is present, or suspecte #5:Carcinogenic PAHs; HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by i #6:Total PAHs; Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ I #7:PCBs; HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dio #8:Derived soil HSL exceeds soil saturation concentraiton. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction. #9:Derived soil HSL exceeds soil saturation concentraiton. To obtain F2 subtract naphthalene from the >C10-C16 fraction #10:Derived soil HSL exceeds soil saturation concentraiton #11:Aged values apply to arsenic contamination present in soil > 2 years. Refer Schedule B5c for < 2 years. #12:Trigger Value taken for Chromium (III), Clay Content of 1% #13:Trigger Value taken for pH 4.5 #14:Trigger Value taken for CEC 5 #15:Trigger Value taken for pH 4 and CEC 5 #16:ESLs are of low reliability. #17:ESLs are of moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction. #18:ESLs are of moderate reliability. To obtain F2 subtract napthalene from the >C10 - C16 fraction. #19:Separate management limits for BTEX & naphthalene are not available hence should not be subtracted from the relevant fractions to obtain F1 & F2 #20:Residential B with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and a #21: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 fit #22:Trigger value adopted from Chromium VI #23:Approximate range of petroleum hydrocarbon fractions: petrol C6–C9, kerosene C10–C18, diesel C12–C18, and lubricating oils above C18. Refer to NSW V #24:There may be a need for the laboratory to concentrate the sample to achieve the TCLP limit value for benzo(a)pyrene with confidence. Refer to NSW Wa: #25:Polychlorinated biphenyls must be managed in accordance with the EPA's polychlorinated biphenyl (PCB) chemical control order 1997. Refer to NSW Wa: #26:Refer to NSW Waste Criteria Nov 2014 p.17 footnote 13 #27:Calculated from Hazardous Waste: Identification and Listing (USEPA 2012a). Refer to NSW Waste Criteria Nov 2014 p.16 footnote 3, 4 #28:Refer to NSW Waste Criteria Nov 2014 p.17 footnote 12	

Project Name: St Leonards South



Criteria:
Due to the mixed land uses proposed for the site, two sets of criteria have been developed. As discussed in **Section 7.2** within the DIS (document number: **Criteria A** applies to land uses relating to the childcare centre, inclusive of an edible garden and playground, and community facilities.
Criteria B applies to land uses relating to the remaining site extent (urban residential with minimal access to soils).

Data Comments

#1 No asbestos detected at the reporting limit of 0.001% w/w.*Organic fibre detected.No trace asbestos detected.

#2 No respirable fibres detected.

#3 No trace asbestos detected.

#4 Organic fibres detected.

#5 Trace levels of Chrysotile and Amosite asbestos reported (0.0017g)

Table B: Soil Analytical Results for Waste Classification
Project Number: 62180
Project Name: St Leonards South





	Metals & Metalloids									TPHs (NEPC 1999)					TRHs (NEPC 2013)					BTEXN								
	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Lead (Leached)	Mercury	Nickel	Zinc	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum of Total)	C6-C10	C10-C16	C16-C34	C34-C40	C10-C40 (Sum of total)	F1 (C6-C10 minus BTEX)	F2 (C10-C16 less Naphthalene)	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene - MAH
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	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	5	5	5	0.01	0.1	5	5	20	20	50	50	50	20	50	100	100	100	20	50	0.1	0.1	0.1	0.1	0.2	0.3	0.5
NSW 2014 General Solid Waste CT1 (No Leaching)	100	20	100 ²²		100		4	40		650 ²³				10000 ²³								10	288	600			1000	
NSW 2009 General Solid Waste (leached)						5																						
NSW 2014 General Solid Waste SCC1 (with leached)	500	100	1900 ²²		1500		50	1050		650 ²⁶				10000 ²⁶								18	518	1080			1800	

Sample ID	Parent Sample	Material Type	Date	Report Number	Monitoring Round																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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Env Stds Comments

#23: Approximate range of petroleum hydrocarbon fractions: petrol C6–C9, kerosene C10–C18, diesel C12–C18, and lubricating oils above C18. Refer to NSW Waste Criteria Nov 2014 p.12 footnote 7

#24: There may be a need for the laboratory to concentrate the sample to achieve the TCLP limit value for benzo(a)pyrene with confidence. Refer to NSW Waste Criteria Nov 2014 p.11 footnote 2

#25: Polychlorinated biphenyls must be managed in accordance with the EPA's polychlorinated biphenyl (PCB) chemical control order 1997. Refer to NSW Waste Criteria Nov 2014 p.12 footnote 8

#26: Refer to NSW Waste Criteria Nov 2014 p.17 footnote 13

#27: Calculated from Hazardous Waste: Identification and Listing (USEPA 2012a). Refer to NSW Waste Criteria Nov 2014 p.16 footnote 3, 4

#28: Refer to NSW Waste Criteria Nov 2014 p.17 footnote 12

Data Comments

#1 No asbestos detected at the reporting limit of 0.001% w/w. *Organic fibre detected.No trace asbestos detected.

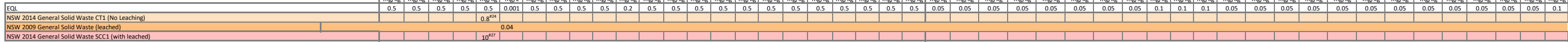
#2 No respirable fibres detected.

#3 No trace asbestos detected.

#4 Organic fibres detected.

#5 Trace levels of Chrysotile and Amosite asbestos reported (0.0017g)

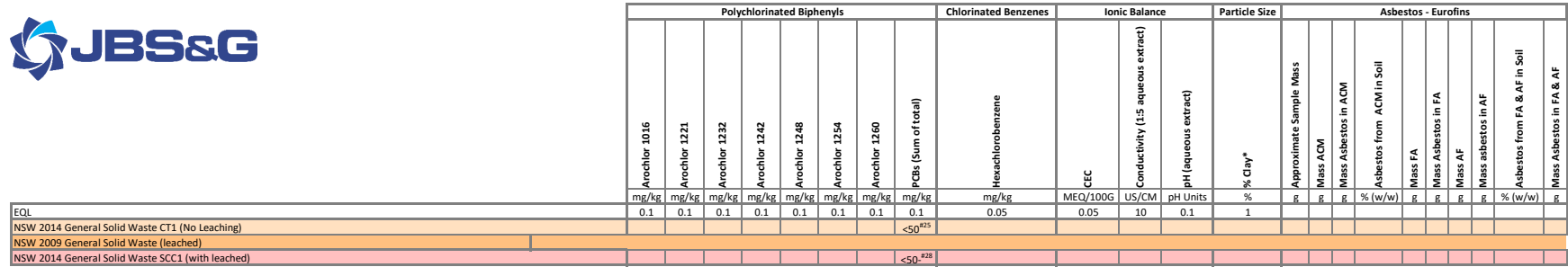
Project Name: St Leonards South



Ends Comments
 #23: Approximate range of petroleum hydrocarbon fractions: petrol C6–C9, kerosene C10–C18, diesel C12–C18, and lubricating oils also
 #24: There may be a need for the laboratory to concentrate the sample to achieve the TCLP limit value for benzo(a)pyrene with confidence
 #25: Polychlorinated biphenyls must be managed in accordance with the EPA's polychlorinated biphenyl (PCB) chemical control order 1!
 #26: Refer to NSW Waste Criteria Nov 2014 p.17 footnote 13
 #27: Calculated from Hazardous Waste: Identification and Listing (USEPA 2012a). Refer to NSW Waste Criteria Nov 2014 p.16 footnote 1
 #28: Refer to NSW Waste Criteria Nov 2014 p.17 footnote 12

#5 Trace levels of Chrysotile and Amosite asbestos reported (0.0017g)

Project Number: 62180
Project Name: St Leonards South



Env Stds Comments

#23: Approximate range of petroleum hydrocarbon fractions: petrol C6–C9, kerosene C10–C18, diesel C12–C18, and lubricating oils above C20.

#24: There may be a need for the laboratory to concentrate the sample to achieve the TCLP limit value for benz(a)pyrene with confidence.

#25: Polychlorinated biphenyls must be managed in accordance with the EPA's polychlorinated biphenyl (PCB) chemical control order 1999.

#26: Refer to NSW Waste Criteria Nov 2014 p.17 footnote 13

#27: Calculated from Hazardous Waste: Identification and Listing (USEPA 2012a). Refer to NSW Waste Criteria Nov 2014 p.16 footnote 1.

#28: Refer to NSW Waste Criteria Nov 2014 p.17 footnote 12

#1 No asbestos detected at the reporting limit of 0.001% w/w. *Organic fibre detected.No trace asbestos detected.
#2 No respirable fibres detected.
#3 No trace asbestos detected.
#4 Organic fibres detected.
#5 Trace levels of Chrysotile and Amosite asbestos reported (0.0017g)

Appendix B Photographic log

PHOTO1: 11 HOLDSWORTH AVE, FACING SE. GROUND LEVEL FALLS >2M TO STREET LEVEL



PHOTO 2: INDICATIVE PHOTOGRAPH OF FILL MATERIALS OVERLYING WEATHERED SANDSTONE



PHOTO 3: 19 HOLDSWORTH AVE, FACING NORTHWEST. LEVELLED SURFACES WITH RETAINING WALL (1.7 M).



PHOTO 4: 16 BERRY ROAD, POTENTIALLY HAZARDOUS MATERIAL



Job No: 62180

Client: Aqualand

Version: Rev 1

Date: 14/06/2022

Drawn By: CD

Checked By: SM

Not to Scale

Coord. Sys n/a

Site Address:
Berry Road and Holdsworth Avune

APPENDIX B

PHOTO 5: 13 HOLDSWORTH AVE, FACING EAST. SEALED SURFACES WITH GARDEN BEDS. SUBSTANTIAL TOPOGRAPHY FALL, VEGETATION IN GOOD HEALTH.



PHOTO 6: 17 HOLDSWORTH AVE, FACING NORTHWEST. CONSTRUCTION SITE APPEARS ABANDONED FOR A NUMBER OF YEARS.



PHOTO 7: REAR OF 17 HOLDSWORTH AVE, MINIMAL CONSTRUCTION MATERIALS REMAIN, NO STORAGE OF CHEMICALS/STAINING OR ASBESTOS OBSERVED.



PHOTO 8: HAND AUGER IN REAR OF PROPERTY



Job No: 62180

Client: Aqualand

Version: Rev 1

Date: 14/06/2022

Drawn By: CD

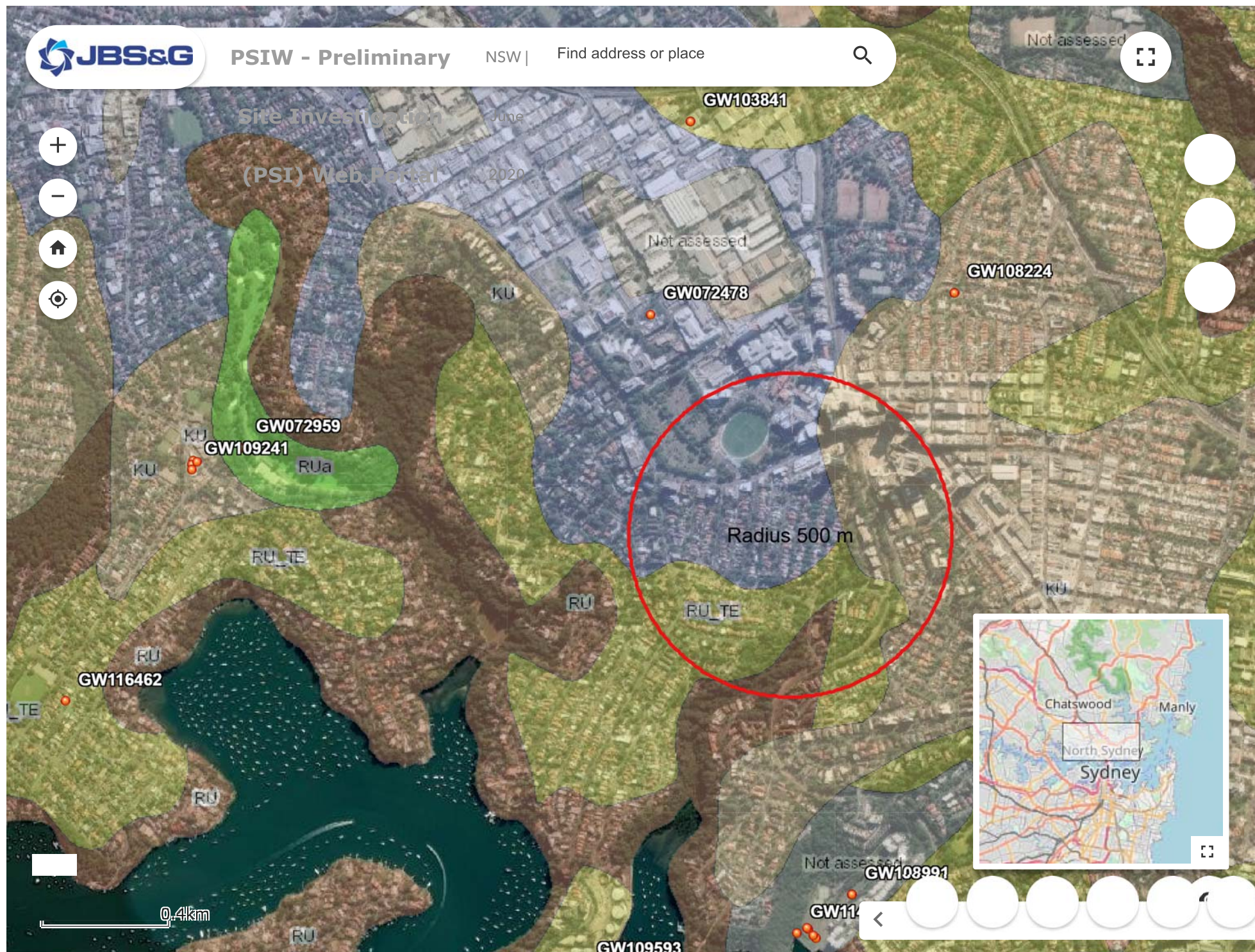
Checked By: SM

Not to Scale

Coord. Sys n/a

APPENDIX B

Appendix C Groundwater Bore Search



Appendix D Aerial Photographs



Legend:
 Approximate Site Boundary



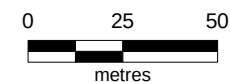
Job No: 60615

Client: Aqualand

Version: R01 Rev A Date 16/03/2021

Drawn By: RH Checked By: CB

Scale 1:2,000



Coord. Sys. GDA 1994 MGA Zone 56

**12-20 Berry Road and
11-19 Holdsworth Avenue,
St Leonards, NSW**

HISTORIC AERIALS 1930

FIGURE 1930



Legend:
 Approximate Site Boundary



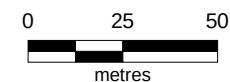
Job No: 60615

Client: Aqualand

Version: R01 Rev A Date 16/03/2021

Drawn By: RH Checked By: CB

Scale 1:2,000



Coord. Sys. GDA 1994 MGA Zone 56

**12-20 Berry Road and
11-19 Holdsworth Avenue,
St Leonards, NSW**

HISTORIC AERIALS 1943

FIGURE 1943

**Legend:**

 Approximate Site Boundary



Job No: 60615

Client: Aqualand

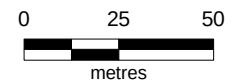
Version: R01 Rev A

Date 16/03/2021

Drawn By: RH

Checked By: CB

Scale 1:2,000



Coord. Sys. GDA 1994 MGA Zone 56

**12-20 Berry Road and
11-19 Holdsworth Avenue,
St Leonards, NSW**

HISTORIC AERIALS 1951

FIGURE 1951



Legend:

Approximate Site Boundary



Job No: 60615

Client: Aqualand

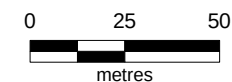
Version: R01 Rev A

Date 16/03/2021

Drawn By: RH

Checked By: CB

Scale 1:2,000



Coord. Sys. GDA 1994 MGA Zone 56

**12-20 Berry Road and
11-19 Holdsworth Avenue,
St Leonards, NSW**

HISTORIC AERIALS 1961

FIGURE 1961



Legend:
 Approximate Site Boundary



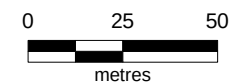
Job No: 60615

Client: Aqualand

Version: R01 Rev A Date 16/03/2021

Drawn By: RH Checked By: CB

Scale 1:2,000



Coord. Sys. GDA 1994 MGA Zone 56

**12-20 Berry Road and
11-19 Holdsworth Avenue,
St Leonards, NSW**

HISTORIC AERIALS 1970

FIGURE 1970



Legend:
 Approximate Site Boundary



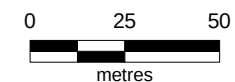
Job No: 60615

Client: Aqualand

Version: R01 Rev A Date 16/03/2021

Drawn By: RH Checked By: CB

Scale 1:2,000



Coord. Sys. GDA 1994 MGA Zone 56

**12-20 Berry Road and
11-19 Holdsworth Avenue,
St Leonards, NSW**

HISTORIC AERIALS 1986

FIGURE 1986



Legend:
 Approximate Site Boundary



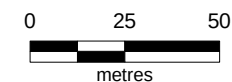
Job No: 60615

Client: Aqualand

Version: R01 Rev A Date 16/03/2021

Drawn By: RH Checked By: CB

Scale 1:2,000



Coord. Sys. GDA 1994 MGA Zone 56

**12-20 Berry Road and
11-19 Holdsworth Avenue,
St Leonards, NSW**

HISTORIC AERIALS 1991

FIGURE 1991



Legend:

 Approximate Site Boundary



Job No: 60615

Client: Aqualand

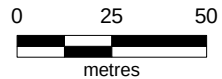
Version: R01 Rev A

Date 16/03/2021

Drawn By: RH

Checked By: CB

Scale 1:2,000



Coord. Sys. GDA 1994 MGA Zone 56

**12-20 Berry Road and
11-19 Holdsworth Avenue,
St Leonards, NSW**

HISTORIC AERIALS 2005

FIGURE 2005



Legend:
[Red Outline] Approximate Site Boundary



Job No: 60615

Client: Aqualand

Version: R01 Rev A Date 16/03/2021

Drawn By: AR Checked By:

Scale 1:2,000



0 25 50
metres

Coord. Sys. GDA 1994 MGA Zone 56

**12-20 Berry Road and
11-19 Holdsworth Avenue,
St Leonards, NSW**

HISTORIC AERIALS 2010

FIGURE 2010



Legend:

Approximate Site Boundary



Job No: 60615

Client: Aqualand

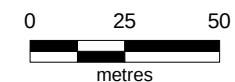
Version: R01 Rev A

Date 16/03/2021

Drawn By: AR

Checked By:

Scale 1:2,000



Coord. Sys. GDA 1994 MGA Zone 56

**12-20 Berry Road and
11-19 Holdsworth Avenue,
St Leonards, NSW**

HISTORIC AERIALS 2021

FIGURE 2021

Appendix E EPA Searches

Search results

Contaminated Land Record of Notices (CLM ACT section 58)

Your search for: LGA: LANE COVE MUNICIPAL COUNCIL

Matched 24 notices relating to 6 sites.

[Search Again](#)

[Refine Search](#)

Suburb	Address	Site Name	Notices related to this site
LANE COVE	315-317 Burns Bay ROAD	315-317 Burns Bay Road, Lane Cove	1 current
LANE COVE	331 and 333 - 335 Burns Bay ROAD	331-335 Burns Bay Road, Lane Cove NSW 2066	2 current
LANE COVE	Sirius ROAD	Pacific Power	1 current and 8 former
LANE COVE NORTH	432 Pacific HIGHWAY	BP Artarmon Service Station, Lane Cove North	3 current
LANE COVE NORTH	428-432 Mowbray ROAD	Former Caltex Service Station	4 former
LANE COVE WEST	301B Burns Bay ROAD	Lovetts Reserve Walking Track	2 current and 3 former

LAMBTON	4-26 Verulam Road, Lambton NSW 2299	4-26 Verulam ROAD	List of notified sites CLM ACT ACT Section			-32.91130954	151.7170534
LANE COVE	7-Eleven Service Station	203 Burns Bay ROAD	Service Station	Regulation under CLM Act not required	-33.81458334	151.1543844	
LANE COVE	BP-branded Jasbe Service Station	62-70 Epping ROAD	Service Station	Regulation under CLM Act not required	-33.81108427	151.1641531	
LANE COVE	Pacific Power	Sirius ROAD	Other Industry	Ongoing maintenance required to manage residual contamination (CLM Act)	-33.80701776	151.1449658	
LANE COVE	Coles Express Service Station Burns Bay	254 Burns Bay ROAD	Service Station	Regulation under CLM Act not required	-33.81719214	151.1518774	
LANE COVE	331-335 Burns Bay Road, Lane Cove NSW 2066	331 and 333 - 335 Burns Bay ROAD	Other Industry	Contamination currently regulated under CLM Act	-33.8211575	151.1493074	
LANE COVE	315-317 Burns Bay Road, Lane Cove	315-317 Burns Bay ROAD	Unclassified	Under preliminary investigation order	-33.82065224	151.1496027	
LANE COVE NORTH	Former Caltex Service Station	428-432 Mowbray ROAD	Service Station	Regulation under CLM Act not required	-33.80804563	151.1721538	
LANE COVE NORTH	BP Artarmon Service Station, Lane Cove North	432 Pacific HIGHWAY	Service Station	Contamination currently regulated under CLM Act	-33.8112038	151.175547	
LANE COVE WEST	Caltex Lane Cove West	235-245 Burns Bay ROAD	Service Station	Regulation under CLM Act not required	-33.81719214	151.1518774	
LANE COVE WEST	Ventemans Reach Bushland	Off Mars ROAD	Unclassified	Regulation under CLM Act not required	-33.80499552	151.1450719	
LANE COVE WEST	Lovetts Reserve Walking Track	301B Burns Bay ROAD	Unclassified	Contamination currently regulated under CLM Act	-33.82044223	151.1492125	

List of notified sites CLM ACT ACT Section

PEOE Public Register of Licences

Number	Name	Location	Type	Status	Issued date
6996	MOCKRIDGE BULMER PTY LTD	2/12 FREDERICK STREET, ST LEONARDS, NSW 2065	POEO licence	Surrendered	26-Jun-00
1025667	MOCKRIDGE BULMER PTY LTD	2/12 FREDERICK STREET, ST LEONARDS, NSW 2065	s.80 Surrender of a Licence	Issued	12-Mar-03
6737	NORTHERN SYDNEY AND CENTRAL COAST AREA HEALTH SERVICE	PACIFIC HIGHWAY, ST LEONARDS, NSW 2065	POEO licence	No longer in force	27-Jul-00
1018592	NORTHERN SYDNEY AND CENTRAL COAST AREA HEALTH SERVICE	PACIFIC HIGHWAY, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	22-Oct-02
1027381	NORTHERN SYDNEY AND CENTRAL COAST AREA HEALTH SERVICE	PACIFIC HIGHWAY, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	18-Jun-03
1044544	NORTHERN SYDNEY AND CENTRAL COAST AREA HEALTH SERVICE	PACIFIC HIGHWAY, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	16-Feb-05
11170	RAMSAY HEALTH CARE AUSTRALIA PTY LIMITED	3 Westbourne Street, ST LEONARDS, NSW 2065	POEO licence	No longer in force	24-Aug-00
1034912	RAMSAY HEALTH CARE AUSTRALIA PTY LIMITED	3 Westbourne Street, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	17-Mar-04
12413	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	POEO licence	Surrendered	9-Jan-06
1057752	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	22-Mar-06
1061467	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	8-Jun-06
1063712	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	18-Aug-06
1064638	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	1-Sep-06
1065547	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	26-Oct-06
1067983	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	11-Jan-07
1068923	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	19-Jan-07
1069135	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	9-Feb-07
1070045	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	23-Feb-07
1071102	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	28-Mar-07
1071946	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	19-Apr-07
1072566	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	4-May-07
1073905	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	7-Jun-07
1074608	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	22-Jun-07
1074931	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	26-Jun-07
1075522	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	4-Jul-07
1075965	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	16-Jul-07
1076177	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	20-Jul-07
1076399	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	30-Jul-07
1077496	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	27-Aug-07
1077654	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	31-Aug-07
1077903	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	14-Sep-07
1078330	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	21-Sep-07
1078805	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	9-Oct-07
1079326	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	26-Oct-07
1079820	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	7-Nov-07
1080029	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	9-Nov-07

PEOE Public Register of Licences

1080251	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	22-Nov-07
1080718	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	30-Nov-07
1080890	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	6-Dec-07
1081253	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	21-Dec-07
1082052	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	1-Feb-08
1082694	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	11-Feb-08
1082834	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	20-Feb-08
1083247	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	7-Mar-08
1083594	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	17-Mar-08
1084038	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	27-Mar-08
1084428	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	1-Apr-08
1084917	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	17-Apr-08
1087230	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	15-May-08
1088312	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	3-Jun-08
1088987	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	20-Jun-08
1089391	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	27-Jun-08
1090509	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	23-Jul-08
1090739	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	30-Jul-08
1090779	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	31-Jul-08
1090927	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	8-Aug-08
1091180	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	14-Aug-08
1091558	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	25-Aug-08
1092071	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	12-Sep-08
1092354	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	24-Sep-08
1093257	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	12-Dec-08
1096533	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	6-Jan-09
1097717	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	10-Feb-09
1099139	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	27-Mar-09
1099637	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	3-Apr-09
1102309	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	19-Jun-09
1103281	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	30-Jun-09
1103852	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	9-Jul-09
1103992	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	13-Jul-09
1104068	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	16-Jul-09
1105824	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	25-Aug-09
1105949	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	3-Sep-09
1106705	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	24-Sep-09

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1108086	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	27-Oct-09
1109163	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	9-Dec-09
1112398	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	19-Mar-10
1114586	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	31-May-10
1116927	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	15-Jul-10
1119536	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	17-Sep-10
1122403	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	3-Dec-10
1123528	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	10-Jan-11
1127396	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	28-Apr-11
1501076	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	13-Sep-11
1503205	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	8-Dec-11
1506168	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	18-May-12
1509363	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	25-Oct-12
1510877	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	7-Jan-13
1511290	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	21-Jan-13
1514126	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	15-May-13
1518061	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	7-Nov-13
1521869	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	19-Aug-14
1524725	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	1-Sep-14
1525877	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	28-Oct-14
1531778	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.80 Surrender of a Licence	Issued	2-Jul-15
13358	VENTIA UTILITY SERVICES PTY LIMITED	Royal North Shore Hospital, Reserve Road, ST LEONARDS, NSW 2065	POEO licence	Surrendered	20-Apr-11
1528865	VENTIA UTILITY SERVICES PTY LIMITED	Royal North Shore Hospital, Reserve Road, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	13-May-15
1547893	VENTIA UTILITY SERVICES PTY LIMITED	Royal North Shore Hospital, Reserve Road, ST LEONARDS, NSW 2065	s.80 Surrender of a Licence	Issued	20-Jan-17

Appendix F Planning Certificates



Lane Cove Council

48 Longueville Road, Lane Cove NSW 2086

Tel: 9911 3555

Fax: 9911 3600

PLANNING CERTIFICATE

Under Section 10.7 Environmental Planning and Assessment Act, 1979

Applicant:

Chris Bielby

Level 1, 50 Margaret Street

Sydney NSW 2000

Date of Issue:

15/03/2021

Council Reference:

185565

Applicant Reference:

60615

Certificate No:

337

Property address: 18 Berry Road ST LEONARDS NSW 2065

Description: LOT: A DP: 110452 LOC:

Property Reference: 4901

INFORMATION PROVIDED PURSUANT TO SECTION 10.7(2) & (5) OF THE ACT

The planning information contained in this certificate applies specifically to the land.

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To authenticate this certificate visit <http://www.lanecove.nsw.gov.au/CertCheck>

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PO Box 20 Lane Cove NSW 1595, Lane Cove

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PART 2:

Sec: 1 Names of relevant planning instruments and DCP

- 1) The name of each environmental planning instrument that applies to the carrying out of development on the land.
Lane Cove Local Environmental Plan 2009 - gazetted on 19 February 2010

State Environmental Planning Policy No.19: Bushland in Urban Areas - gazetted 24 October 1986

State Environmental Planning Policy No.55: Remediation of Land - gazetted 28 August 1998

State Environmental Planning Policy No.64: Advertising and Signage - gazetted 16 March 2001

State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 - gazetted 25 June 2004

State Environmental Planning Policy (Housing for seniors or people with a disability) 2004 Amendment No.2 - gazetted 31 March 2004 effective 12 October 2007

State Environmental Planning Policy (Temporary Structures and Places of Public Entertainment) - gazetted 28 September 2007

State Environmental Planning Policy (Infrastructure) 2007 - gazetted 21 December 2007; commenced 1 January 2008

State Environmental Planning Policy (Exempt & Complying Development Codes) - gazetted 12 December 2008

State Environmental Planning Policy (Affordable Rental Housing) 2009, gazetted: 31 September 2009

State Environmental Planning Policy (Major Projects) 2005 - gazetted 1 August 2005. Replaced by State Environmental Planning Policy (State Significant Precincts) 2005.

State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 - gazetted 25 August 2017
- 2) The name of each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultations or on public exhibition under the Act (unless the Director-General has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved)
Planning Proposal 25 (St Leonards South) to amend Local Environmental Plan 2009 applies to this land. This amendment was gazetted on 31 August 2020, but does not take effect until 1 November 2020
- 3) The name of each development control plan that applies to the carrying out of development on the land.
Lane Cove Development Control Plan, effective 22 February 2010
- 4) In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or draft environmental planning instrument.



Sec: 2 Zoning and land use under relevant LEPs

The land is zoned: High Density Residential R4

1) Objectives of zone

- To provide for the housing needs of the community within a high density residential environment.
- To provide a variety of housing types within a high density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.
- To provide for a high concentration of housing with good access to transport, services and facilities.
- To ensure that the existing amenity of residences in the neighbourhood is respected.
- To avoid the isolation of sites resulting from site amalgamation.
- To ensure that landscaping is maintained and enhanced as a major element in the residential environment.

2) Permitted without consent

Nil

3) Permitted with consent

Bed and breakfast accommodation; Boarding houses; Centre-based child care facilities; Community facilities; Exhibition homes; Group homes; Home businesses; Home industries; Hotel or motel accommodation; Multi dwelling housing; Neighbourhood shops; Oyster aquaculture; Places of public worship; Residential flat buildings; Respite day care centres; Restaurants or cafes; Roads; Shop top housing; Signage

4) Prohibited

Pond-based aquaculture; Tank-based aquaculture Any development not specified in item 2 or 3

- 5) Whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed:

No

- 6) Whether the land includes or comprises critical habitat:

NO

- 7) Whether the land is in a conservation area (however described):

NO

- 8) Whether an item of environmental heritage (however described) is situated on the land:

NO



Lane Cove Council

48 Longueville Road, Lane Cove NSW 2066

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Sec: 2A Zoning and land use under State Environmental Planning Policy (Sydney Region Growth Centres) 2006

Not applicable.

Sec: 3 Complying development

- 1) The extent to which the land is on which complying development may be carried out under each of the codes for complying development because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.
- 2) The extent to which complying development may not be carried out on that land because of the provisions of clauses 1.17A (1)(c) to (e), (2), (3) and (4) and 1.19 of that Policy and the reasons why it may not be carried out under those clauses.
- 3) If the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

(1) Complying development may be carried out on the land as a whole under the SEPP in accordance with the following Codes (unless the land is excluded elsewhere in this Section):- Housing Code, Housing Alterations Code, General Development Code, Subdivision Code, Demolition Code and/or Fire Safety Code.

(2) Not applicable.

(3) Not applicable

Sec: 4 Coastal Protection

Whether or not the land is affected by the operation of section 38 or 39 of the [Coastal Protection Act 1979](#), but only to the extent that the council has been so notified by the Department of Services, Technology and Administration.

NO

Sec: 4A Certain information relating to beaches and coasts

Not applicable.

Sec: 4B Annual charges under [Local Government Act 1993](#) for coastal protection services that relate to existing coastal protection works

Not applicable.

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Lane Cove Council

48 Longueville Road, Lane Cove NSW 2086

Tel: 9911 3555

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Sec: 5 Mine subsidence

Whether or not the land is proclaimed to be a mine subsidence district within the meaning of section 15 of the *Mine Subsidence Compensation Act 1961*:

NO

Sec: 6 Road widening and road realignment

Whether or not the land is affected by any road widening or road realignment under:

- a) Division 2 of Part 3 of the *Roads Act 1993*:
Not affected by road widening

- b) Any environmental planning instrument:
NO

- c) Any resolution of the council:
NO

Sec: 7 Council and other public authority policies on hazard risk restrictions

Whether or not the land is affected by a policy:

- a) Adopted by the council, or
b) Adopted by any other public authority and notified to the council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the council, that restricts the development of the land because of the likelihood of :-

Land slip:
NO

Bushfire:
See Section 11.

Tidal inundation:
NO

Subsidence:
NO

Acid Sulphate soils:
NO

Sec: 7A Flood related development controls information

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Lane Cove Council

48 Longueville Road, Lane Cove NSW 2066

Tel: 9911 3555

Fax: 9911 3600

- 1) Whether or not development on that land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is subject to flood related development controls.
The Lane Cove Development Control Plan - effective 22 February 2010 - applies
- 2) Whether or not development on that land or part of the land for any other purpose is subject to flood related development controls.
The Lane Cove Development Control Plan - effective 22 February 2010 - applies

Overland Flow

A study is currently being undertaken to determine exact locations subject to overland flow in the Municipality of Lane Cove. Until such time as Council has completed this work, property owners should conduct their own investigations to be satisfied that this property is not affected by overland flow.

Words and expressions in this clause have the same meanings as in the standard instrument set out in the *Standard Instrument (Local Environmental Plans) Order 2006*.

Sec: 8 Land reserved for acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 27 of the Act.

NO

Sec: 9 Contributions plans

Lane Cove Section 94 Contributions Plan.

Sec: 9A Biodiversity certified land

Not applicable.

Sec: 10 Biobanking agreements

Not applicable.

Sec: 11 Bushfire prone land

The land is not identified on the Lane Cove Bushfire Prone Land Map dated 27 May 2016.

Sec: 12 Property vegetation plans

Not applicable.

Sec: 13 Orders under Trees (disputes Between Neighbours) Act 2006

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Lane Cove Council

48 Longueville Road, Lane Cove NSW 2066

Tel: 9911 3555

Fax: 9911 3600

Whether an order has been made under the *Trees (Disputes Between Neighbours) Act 2006* to carry out work in relation to a tree on the land (but only if the council has been notified of the order).

NONE

Sec: 14 Directions under Part 3A

If there is a direction by the Minister in force under section 75P (2) (c1) of the Act that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act does not have effect, a statement to that effect identifying the provision that does not have effect.

NONE

Sec: 15 Site compatibility certificates and conditions for seniors housing

If the land to which *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004* applies:

NO

Sec: 16 Site compatibility certificates for infrastructure

Whether there is a valid site compatibility certificate (infrastructure), of which the council is aware, in respect of proposed development on the land.

NO

Sec: 17 Site compatibility certificates and conditions for affordable rental housing

Whether there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land:

NO

Sec: 18 Paper Subdivision Information

- 1) The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.
Not applicable
- 2) The date of an subdivision order that applies to the land.
Not applicable
- 3) Words and expressions used in this clause have the same meaning as they have in Part 16C of this Regulation.

Sec: 19 Site verification certificates

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Not applicable

Sec: 20 Loose-fill asbestos insulation

If the land includes any residential premises (within the meaning of Division 1A of Part 8 of the Home Building Act 1989) that are listed on the register that is required to be maintained under that Division, a statement to that effect.

- **Some residential homes located in the Local Government Area have been identified as containing Loose Fill Asbestos Insulation (LFAI) , for example in the roof space**
- **NSW Fair Trading maintains a Register of these homes that are affected by Loose Fill Asbestos Insulation. This register can be found on NSW Fair Trading's website - http://www.fairtrading.nsw.gov.au/ftw/Tenants_and_home_owners/Loose_fill_asbestos_insulation.page**

You should make your own enquiries as to the age of the buildings on the land to which this certificate relates to confirm the status of the property.

Sec: 21 Affected building notices and building product rectification orders

- 1) A statement of whether there is any affected building notice of which the council is aware that is in force in respect of the land.
NO
- 2) A statement of:
 - (a) whether there is any building product rectification order of which the council is aware that is in force in respect of the land and has not been fully complied with, and
NO
 - (b) whether any notice of intention to make a building product rectification order of which the council is aware has been given in respect of the land and is outstanding.
NO
- 3) In this clause:
affected building notice has the same meaning as in Part 4 of the Building Products (Safety) Act 2017.
building product rectification order has the same meaning as in the Building Products (Safety) Act 2017.

Note. The following matters are prescribed by section 59 (2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate:

- a) That the land to which the certificate relates is significantly contaminated land within the meaning of that Act – if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,
NO
- b) That the land to which the certificate relates is subject to a management order within the meaning of that Act – if it is subject to such an order at the date when the certificate is issued,

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Fax: 9911 3600

NO

- c) That the land to which the certificate relates is subject of an approved voluntary management proposal within the meaning of that Act – if it is the subject of such an approved proposal at the date when the certificate is issued,

NO

- d) That the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of that Act – if it is subject to such an order at the date when the certificate is issued,

NO

- e) That the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act – if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

NO

Council records do not have sufficient information about the uses (including previous uses) of the land which is the subject of this Section 10.7 certificate. To confirm that the land hasn't been used for a purpose which would be likely to have contaminated the land, parties should make their own enquiries as to whether the land may be contaminated.

For further information, please contact the Strategic Planning Department on 9911 3612.



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Part 5: ADDITIONAL INFORMATION PROVIDED UNDER SECTION 10.7(5) OF THE ACT

The instruments and the plans should be examined in relation to the specific restrictions which may apply to any development which may be proposed.

The land is subject to a Tree Preservation Order, details of which are available at Council's Customer Service Centre.

The Register of Consents may be examined at Council's Customer Service Centre for particulars relating to development consents which may have been issued for the use or development of the land.

Enquiries regarding Arterial Road Reservations and Regional Open Space should be directed to the Roads and Traffic Authority and Department of Planning respectively.

The information provided concerning the Coastal Protection Act, 1979 is only to the extent that the Council has been notified by the Department of Public Works and Services.

For more information, please contact the Strategic Planning Department on 9911 3555



PLANNING CERTIFICATE

Under Section 10.7 Environmental Planning and Assessment Act, 1979

Applicant:

Chris Bielby

Level 1, 50 Margaret Street

Sydney NSW 2000

Date of Issue:

15/03/2021

Council Reference:

185564

Applicant Reference:

60615

Certificate No:

336

Property address: 12 Berry Road ST LEONARDS NSW 2065

Description: LOT: 33 DP: 7259 LOC:

Property Reference: 4898

INFORMATION PROVIDED PURSUANT TO SECTION 10.7(2) & (5) OF THE ACT

The planning information contained in this certificate applies specifically to the land.

Table of Contents	
Description	Section No.
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Zoning & land use under SEPP (Sydney Region Growth Centres) 2006	2A
Complying Development	3
Coastal protection	4
Certain information relating to beaches and coasts	4A
Annual charges: Local Government Act – coastal protection	4B
Mine Subsidence	5
Road Widening and road realignment	6
Council and other public hazard risk restriction	7
Flood related development controls	7A
Land reserved for acquisition	8
Contributions plans	9
Biodiversity certified land	9A
Biobanking agreements	10
Bushfire prone land	11
Property Vegetation Plans	12
Orders under Trees (disputes between neighbours) act	13
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Site compatibility certificates and conditions for seniors housing	15
Site compatibility certificates for infrastructure	16
Site compatibility certificates and conditions for affordable rental housing	17
Contaminated Land Management Act 1997s.59(2)	Note
Part 5: Additional information for Section 10.7 (5)	Part 5



PART 2:

Sec: 1 Names of relevant planning instruments and DCP

- 1) The name of each environmental planning instrument that applies to the carrying out of development on the land.
Lane Cove Local Environmental Plan 2009 - gazetted on 19 February 2010
State Environmental Planning Policy No.19: Bushland in Urban Areas - gazetted 24 October 1986
State Environmental Planning Policy No.55: Remediation of Land - gazetted 28 August 1998
State Environmental Planning Policy No.64: Advertising and Signage - gazetted 16 March 2001
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 - gazetted 25 June 2004
State Environmental Planning Policy (Housing for seniors or people with a disability) 2004 Amendment No.2 - gazetted 31 March 2004 effective 12 October 2007
State Environmental Planning Policy (Temporary Structures and Places of Public Entertainment) - gazetted 28 September 2007
State Environmental Planning Policy (Infrastructure) 2007 - gazetted 21 December 2007; commenced 1 January 2008
State Environmental Planning Policy (Exempt & Complying Development Codes) - gazetted 12 December 2008
State Environmental Planning Policy (Affordable Rental Housing) 2009, gazetted: 31 September 2009
State Environmental Planning Policy (Major Projects) 2005 - gazetted 1 August 2005. Replaced by State Environmental Planning Policy (State Significant Precincts) 2005.
State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 - gazetted 25 August 2017
- 2) The name of each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultations or on public exhibition under the Act (unless the Director-General has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved)
Planning Proposal 25 (St Leonards South) to amend Local Environmental Plan 2009 applies to this land. This amendment was gazetted on 31 August 2020, but does not take effect until 1 November 2020
- 3) The name of each development control plan that applies to the carrying out of development on the land.
Lane Cove Development Control Plan, effective 22 February 2010
- 4) In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or draft environmental planning instrument.



Sec: 2 Zoning and land use under relevant LEPs

The land is zoned: High Density Residential R4

1) Objectives of zone

- To provide for the housing needs of the community within a high density residential environment.
- To provide a variety of housing types within a high density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.
- To provide for a high concentration of housing with good access to transport, services and facilities.
- To ensure that the existing amenity of residences in the neighbourhood is respected.
- To avoid the isolation of sites resulting from site amalgamation.
- To ensure that landscaping is maintained and enhanced as a major element in the residential environment.

2) Permitted without consent

Nil

3) Permitted with consent

Bed and breakfast accommodation; Boarding houses; Centre-based child care facilities; Community facilities; Exhibition homes; Group homes; Home businesses; Home industries; Hotel or motel accommodation; Multi dwelling housing; Neighbourhood shops; Oyster aquaculture; Places of public worship; Residential flat buildings; Respite day care centres; Restaurants or cafes; Roads; Shop top housing; Signage

4) Prohibited

Pond-based aquaculture; Tank-based aquaculture Any development not specified in item 2 or 3

- 5) Whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed:

No

- 6) Whether the land includes or comprises critical habitat:

NO

- 7) Whether the land is in a conservation area (however described):

NO

- 8) Whether an item of environmental heritage (however described) is situated on the land:

NO



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Sec: 2A Zoning and land use under State Environmental Planning Policy (Sydney Region Growth Centres) 2006

Not applicable.

Sec: 3 Complying development

- 1) The extent to which the land is on which complying development may be carried out under each of the codes for complying development because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.
- 2) The extent to which complying development may not be carried out on that land because of the provisions of clauses 1.17A (1)(c) to (e), (2), (3) and (4) and 1.19 of that Policy and the reasons why it may not be carried out under those clauses.
- 3) If the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

(1) Complying development may be carried out on the land as a whole under the SEPP in accordance with the following Codes (unless the land is excluded elsewhere in this Section):- Housing Code, Housing Alterations Code, General Development Code, Subdivision Code, Demolition Code and/or Fire Safety Code.

(2) Not applicable.

(3) Not applicable

Sec: 4 Coastal Protection

Whether or not the land is affected by the operation of section 38 or 39 of the [Coastal Protection Act 1979](#), but only to the extent that the council has been so notified by the Department of Services, Technology and Administration.

NO

Sec: 4A Certain information relating to beaches and coasts

Not applicable.

Sec: 4B Annual charges under [Local Government Act 1993](#) for coastal protection services that relate to existing coastal protection works

Not applicable.

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Sec: 5 Mine subsidence

Whether or not the land is proclaimed to be a mine subsidence district within the meaning of section 15 of the *Mine Subsidence Compensation Act 1961*:

NO

Sec: 6 Road widening and road realignment

Whether or not the land is affected by any road widening or road realignment under:

- a) Division 2 of Part 3 of the *Roads Act 1993*:
Not affected by road widening

- b) Any environmental planning instrument:
NO

- c) Any resolution of the council:
NO

Sec: 7 Council and other public authority policies on hazard risk restrictions

Whether or not the land is affected by a policy:

- a) Adopted by the council, or
b) Adopted by any other public authority and notified to the council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the council, that restricts the development of the land because of the likelihood of :-

Land slip:
NO

Bushfire:
See Section 11.

Tidal inundation:
NO

Subsidence:
NO

Acid Sulphate soils:
NO

Sec: 7A Flood related development controls information

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- 1) Whether or not development on that land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is subject to flood related development controls.
The Lane Cove Development Control Plan - effective 22 February 2010 - applies

- 2) Whether or not development on that land or part of the land for any other purpose is subject to flood related development controls.
The Lane Cove Development Control Plan - effective 22 February 2010 - applies

Overland Flow

A study is currently being undertaken to determine exact locations subject to overland flow in the Municipality of Lane Cove. Until such time as Council has completed this work, property owners should conduct their own investigations to be satisfied that this property is not affected by overland flow.

Words and expressions in this clause have the same meanings as in the standard instrument set out in the Standard Instrument (Local Environmental Plans) Order 2006.

Sec: 8 Land reserved for acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 27 of the Act.

NO

Sec: 9 Contributions plans

Lane Cove Section 94 Contributions Plan.

Sec: 9A Biodiversity certified land

Not applicable.

Sec: 10 Biobanking agreements

Not applicable.

Sec: 11 Bushfire prone land

The land is not identified on the Lane Cove Bushfire Prone Land Map dated 27 May 2016.

Sec: 12 Property vegetation plans

Not applicable.

Sec: 13 Orders under Trees (disputes Between Neighbours) Act 2006

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Fax: 9911 3600

Whether an order has been made under the *Trees (Disputes Between Neighbours) Act 2006* to carry out work in relation to a tree on the land (but only if the council has been notified of the order).

NONE

Sec: 14 Directions under Part 3A

If there is a direction by the Minister in force under section 75P (2) (c1) of the Act that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act does not have effect, a statement to that effect identifying the provision that does not have effect.

NONE

Sec: 15 Site compatibility certificates and conditions for seniors housing

If the land to which *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004* applies:

NO

Sec: 16 Site compatibility certificates for infrastructure

Whether there is a valid site compatibility certificate (infrastructure), of which the council is aware, in respect of proposed development on the land.

NO

Sec: 17 Site compatibility certificates and conditions for affordable rental housing

Whether there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land:

NO

Sec: 18 Paper Subdivision Information

- 1) The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.
Not applicable
- 2) The date of an subdivision order that applies to the land.
Not applicable
- 3) Words and expressions used in this clause have the same meaning as they have in Part 16C of this Regulation.

Sec: 19 Site verification certificates

To authenticate this certificate visit <http://www.lanecove.nsw.gov.au/CertCheck>

Cert. #:336, Page 7 of 10



Not applicable

Sec: 20 Loose-fill asbestos insulation

If the land includes any residential premises (within the meaning of Division 1A of Part 8 of the Home Building Act 1989) that are listed on the register that is required to be maintained under that Division, a statement to that effect.

- **Some residential homes located in the Local Government Area have been identified as containing Loose Fill Asbestos Insulation (LFAI) , for example in the roof space**
- **NSW Fair Trading maintains a Register of these homes that are affected by Loose Fill Asbestos Insulation. This register can be found on NSW Fair Trading's website - http://www.fairtrading.nsw.gov.au/ftw/Tenants_and_home_owners/Loose_fill_asbestos_insulation.page**

You should make your own enquiries as to the age of the buildings on the land to which this certificate relates to confirm the status of the property.

Sec: 21 Affected building notices and building product rectification orders

- 1) A statement of whether there is any affected building notice of which the council is aware that is in force in respect of the land.
NO
- 2) A statement of:
 - (a) whether there is any building product rectification order of which the council is aware that is in force in respect of the land and has not been fully complied with, and
NO
 - (b) whether any notice of intention to make a building product rectification order of which the council is aware has been given in respect of the land and is outstanding.
NO
- 3) In this clause:
affected building notice has the same meaning as in Part 4 of the Building Products (Safety) Act 2017.
building product rectification order has the same meaning as in the Building Products (Safety) Act 2017.

Note. The following matters are prescribed by section 59 (2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate:

- a) That the land to which the certificate relates is significantly contaminated land within the meaning of that Act – if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,
NO
- b) That the land to which the certificate relates is subject to a management order within the meaning of that Act – if it is subject to such an order at the date when the certificate is issued,



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NO

- c) That the land to which the certificate relates is subject of an approved voluntary management proposal within the meaning of that Act – if it is the subject of such an approved proposal at the date when the certificate is issued,

NO

- d) That the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of that Act – if it is subject to such an order at the date when the certificate is issued,

NO

- e) That the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act – if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

NO

Council records do not have sufficient information about the uses (including previous uses) of the land which is the subject of this Section 10.7 certificate. To confirm that the land hasn't been used for a purpose which would be likely to have contaminated the land, parties should make their own enquiries as to whether the land may be contaminated.

For further information, please contact the Strategic Planning Department on 9911 3612.



Part 5:

ADDITIONAL INFORMATION PROVIDED UNDER SECTION 10.7(5) OF THE ACT

The instruments and the plans should be examined in relation to the specific restrictions which may apply to any development which may be proposed.

The land is subject to a Tree Preservation Order, details of which are available at Council's Customer Service Centre.

The Register of Consents may be examined at Council's Customer Service Centre for particulars relating to development consents which may have been issued for the use or development of the land.

Enquiries regarding Arterial Road Reservations and Regional Open Space should be directed to the Roads and Traffic Authority and Department of Planning respectively.

The information provided concerning the Coastal Protection Act, 1979 is only to the extent that the Council has been notified by the Department of Public Works and Services.

For more information, please contact the Strategic Planning Department on 9911 3555



PLANNING CERTIFICATE

Under Section 10.7 Environmental Planning and Assessment Act, 1979

Applicant:

Chris Bielby

Level 1, 50 Margaret Street

Sydney NSW 2000

Date of Issue:

15/03/2021

Council Reference:

185566

Applicant Reference:

60615

Certificate No:

338

Property address: 15 Holdsworth Avenue ST LEONARDS NSW 2065

Description: LOT: 12 DP: 7259 LOC:

Property Reference: 2510

INFORMATION PROVIDED PURSUANT TO SECTION 10.7(2) & (5) OF THE ACT

The planning information contained in this certificate applies specifically to the land.

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Coastal protection	4
Certain information relating to beaches and coasts	4A
Annual charges: Local Government Act – coastal protection	4B
Mine Subsidence	5
Road Widening and road realignment	6
Council and other public hazard risk restriction	7
Flood related development controls	7A
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Biobanking agreements	10
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Site compatibility certificates and conditions for seniors housing	15
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Site compatibility certificates and conditions for affordable rental housing	17
Contaminated Land Management Act 1997s.59(2)	Note
Part 5: Additional information for Section 10.7 (5)	Part 5



PART 2:

Sec: 1 Names of relevant planning instruments and DCP

- 1) The name of each environmental planning instrument that applies to the carrying out of development on the land.
Lane Cove Local Environmental Plan 2009 - gazetted on 19 February 2010
State Environmental Planning Policy No.19: Bushland in Urban Areas - gazetted 24 October 1986
State Environmental Planning Policy No.55: Remediation of Land - gazetted 28 August 1998
State Environmental Planning Policy No.64: Advertising and Signage - gazetted 16 March 2001
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 - gazetted 25 June 2004
State Environmental Planning Policy (Housing for seniors or people with a disability) 2004 Amendment No.2 - gazetted 31 March 2004 effective 12 October 2007
State Environmental Planning Policy (Temporary Structures and Places of Public Entertainment) - gazetted 28 September 2007
State Environmental Planning Policy (Infrastructure) 2007 - gazetted 21 December 2007; commenced 1 January 2008
State Environmental Planning Policy (Exempt & Complying Development Codes) - gazetted 12 December 2008
State Environmental Planning Policy (Affordable Rental Housing) 2009, gazetted: 31 September 2009
State Environmental Planning Policy (Major Projects) 2005 - gazetted 1 August 2005. Replaced by State Environmental Planning Policy (State Significant Precincts) 2005.
State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 - gazetted 25 August 2017
- 2) The name of each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultations or on public exhibition under the Act (unless the Director-General has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved)
Planning Proposal 25 (St Leonards South) to amend Local Environmental Plan 2009 applies to this land. This amendment was gazetted on 31 August 2020, but does not take effect until 1 November 2020
- 3) The name of each development control plan that applies to the carrying out of development on the land.
Lane Cove Development Control Plan, effective 22 February 2010
- 4) In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or draft environmental planning instrument.



Sec: 2 Zoning and land use under relevant LEPs

The land is zoned: High Density Residential R4

1) Objectives of zone

- To provide for the housing needs of the community within a high density residential environment.
- To provide a variety of housing types within a high density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.
- To provide for a high concentration of housing with good access to transport, services and facilities.
- To ensure that the existing amenity of residences in the neighbourhood is respected.
- To avoid the isolation of sites resulting from site amalgamation.
- To ensure that landscaping is maintained and enhanced as a major element in the residential environment.

2) Permitted without consent

Nil

3) Permitted with consent

Bed and breakfast accommodation; Boarding houses; Centre-based child care facilities; Community facilities; Exhibition homes; Group homes; Home businesses; Home industries; Hotel or motel accommodation; Multi dwelling housing; Neighbourhood shops; Oyster aquaculture; Places of public worship; Residential flat buildings; Respite day care centres; Restaurants or cafes; Roads; Shop top housing; Signage

4) Prohibited

Pond-based aquaculture; Tank-based aquaculture Any development not specified in item 2 or 3

- 5) Whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed:

No

- 6) Whether the land includes or comprises critical habitat:

NO

- 7) Whether the land is in a conservation area (however described):

NO

- 8) Whether an item of environmental heritage (however described) is situated on the land:

NO



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Sec: 2A Zoning and land use under State Environmental Planning Policy (Sydney Region Growth Centres) 2006

Not applicable.

Sec: 3 Complying development

- 1) The extent to which the land is on which complying development may be carried out under each of the codes for complying development because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.
- 2) The extent to which complying development may not be carried out on that land because of the provisions of clauses 1.17A (1)(c) to (e), (2), (3) and (4) and 1.19 of that Policy and the reasons why it may not be carried out under those clauses.
- 3) If the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

(1) Complying development may be carried out on the land as a whole under the SEPP in accordance with the following Codes (unless the land is excluded elsewhere in this Section):- Housing Code, Housing Alterations Code, General Development Code, Subdivision Code, Demolition Code and/or Fire Safety Code.

(2) Not applicable.

(3) Not applicable

Sec: 4 Coastal Protection

Whether or not the land is affected by the operation of section 38 or 39 of the [Coastal Protection Act 1979](#), but only to the extent that the council has been so notified by the Department of Services, Technology and Administration.

NO

Sec: 4A Certain information relating to beaches and coasts

Not applicable.

Sec: 4B Annual charges under [Local Government Act 1993](#) for coastal protection services that relate to existing coastal protection works

Not applicable.

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Sec: 5 Mine subsidence

Whether or not the land is proclaimed to be a mine subsidence district within the meaning of section 15 of the *Mine Subsidence Compensation Act 1961*:

NO

Sec: 6 Road widening and road realignment

Whether or not the land is affected by any road widening or road realignment under:

- a) Division 2 of Part 3 of the *Roads Act 1993*:

Not affected by road widening

- b) Any environmental planning instrument:

NO

- c) Any resolution of the council:

NO

Sec: 7 Council and other public authority policies on hazard risk restrictions

Whether or not the land is affected by a policy:

- a) Adopted by the council, or
b) Adopted by any other public authority and notified to the council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the council, that restricts the development of the land because of the likelihood of :-

Land slip:

NO

Bushfire:

See Section 11.

Tidal inundation:

NO

Subsidence:

NO

Acid Sulphate soils:

NO

Sec: 7A Flood related development controls information

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Tel: 9911 3555

Fax: 9911 3600

- 1) Whether or not development on that land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is subject to flood related development controls.
The Lane Cove Development Control Plan - effective 22 February 2010 - applies
- 2) Whether or not development on that land or part of the land for any other purpose is subject to flood related development controls.
The Lane Cove Development Control Plan - effective 22 February 2010 - applies

Overland Flow

A study is currently being undertaken to determine exact locations subject to overland flow in the Municipality of Lane Cove. Until such time as Council has completed this work, property owners should conduct their own investigations to be satisfied that this property is not affected by overland flow.

Words and expressions in this clause have the same meanings as in the standard instrument set out in the Standard Instrument (Local Environmental Plans) Order 2006.

Sec: 8 Land reserved for acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 27 of the Act.

NO

Sec: 9 Contributions plans

Lane Cove Section 94 Contributions Plan.

Sec: 9A Biodiversity certified land

Not applicable.

Sec: 10 Biobanking agreements

Not applicable.

Sec: 11 Bushfire prone land

The land is not identified on the Lane Cove Bushfire Prone Land Map dated 27 May 2016.

Sec: 12 Property vegetation plans

Not applicable.

Sec: 13 Orders under Trees (disputes Between Neighbours) Act 2006

To authenticate this certificate visit <http://www.lanecove.nsw.gov.au/CertCheck>

Cert. #:338, Page 6 of 10



Lane Cove Council

48 Longueville Road, Lane Cove NSW 2066

Tel: 9911 3555

Fax: 9911 3600

Whether an order has been made under the *Trees (Disputes Between Neighbours) Act 2006* to carry out work in relation to a tree on the land (but only if the council has been notified of the order).

NONE

Sec: 14 Directions under Part 3A

If there is a direction by the Minister in force under section 75P (2) (c1) of the Act that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act does not have effect, a statement to that effect identifying the provision that does not have effect.

NONE

Sec: 15 Site compatibility certificates and conditions for seniors housing

If the land to which *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004* applies:

NO

Sec: 16 Site compatibility certificates for infrastructure

Whether there is a valid site compatibility certificate (infrastructure), of which the council is aware, in respect of proposed development on the land.

NO

Sec: 17 Site compatibility certificates and conditions for affordable rental housing

Whether there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land:

NO

Sec: 18 Paper Subdivision Information

- 1) The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.
Not applicable
- 2) The date of an subdivision order that applies to the land.
Not applicable
- 3) Words and expressions used in this clause have the same meaning as they have in Part 16C of this Regulation.

Sec: 19 Site verification certificates

To authenticate this certificate visit <http://www.lanecove.nsw.gov.au/CertCheck>

Cert. #:338, Page 7 of 10



Lane Cove Council

48 Longueville Road, Lane Cove NSW 2066

Tel: 9911 3555

Fax: 9911 3600

Not applicable

Sec: 20 Loose-fill asbestos insulation

If the land includes any residential premises (within the meaning of Division 1A of Part 8 of the Home Building Act 1989) that are listed on the register that is required to be maintained under that Division, a statement to that effect.

- **Some residential homes located in the Local Government Area have been identified as containing Loose Fill Asbestos Insulation (LFAI) , for example in the roof space**
- **NSW Fair Trading maintains a Register of these homes that are affected by Loose Fill Asbestos Insulation. This register can be found on NSW Fair Trading's website -**
http://www.fairtrading.nsw.gov.au/ftw/Tenants_and_home_owners/Loose_fill_asbestos_insulation.page

You should make your own enquiries as to the age of the buildings on the land to which this certificate relates to confirm the status of the property.

Sec: 21 Affected building notices and building product rectification orders

- 1) A statement of whether there is any affected building notice of which the council is aware that is in force in respect of the land.
NO
- 2) A statement of:
 - (a) whether there is any building product rectification order of which the council is aware that is in force in respect of the land and has not been fully complied with, and
NO
 - (b) whether any notice of intention to make a building product rectification order of which the council is aware has been given in respect of the land and is outstanding.
NO
- 3) In this clause:
affected building notice has the same meaning as in Part 4 of the Building Products (Safety) Act 2017.
building product rectification order has the same meaning as in the Building Products (Safety) Act 2017.

Note. The following matters are prescribed by section 59 (2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate:

- a) That the land to which the certificate relates is significantly contaminated land within the meaning of that Act – if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,
NO
- b) That the land to which the certificate relates is subject to a management order within the meaning of that Act – if it is subject to such an order at the date when the certificate is issued,

To authenticate this certificate visit <http://www.lanecove.nsw.gov.au/CertCheck>

Cert. #:338, Page 8 of 10



Lane Cove Council

48 Longueville Road, Lane Cove NSW 2066

Tel: 9911 3555

Fax: 9911 3600

NO

- c) That the land to which the certificate relates is subject of an approved voluntary management proposal within the meaning of that Act – if it is the subject of such an approved proposal at the date when the certificate is issued,
NO
- d) That the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of that Act – if it is subject to such an order at the date when the certificate is issued,
NO
- e) That the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act – if a copy of such a statement has been provided at any time to the local authority issuing the certificate.
NO

Council records do not have sufficient information about the uses (including previous uses) of the land which is the subject of this Section 10.7 certificate. To confirm that the land hasn't been used for a purpose which would be likely to have contaminated the land, parties should make their own enquiries as to whether the land may be contaminated.

For further information, please contact the Strategic Planning Department on 9911 3612.



Lane Cove Council

48 Longueville Road, Lane Cove NSW 2066

Tel: 9911 3555

Fax: 9911 3600

Part 5:

ADDITIONAL INFORMATION PROVIDED UNDER SECTION 10.7(5) OF THE ACT

The instruments and the plans should be examined in relation to the specific restrictions which may apply to any development which may be proposed.

The land is subject to a Tree Preservation Order, details of which are available at Council's Customer Service Centre.

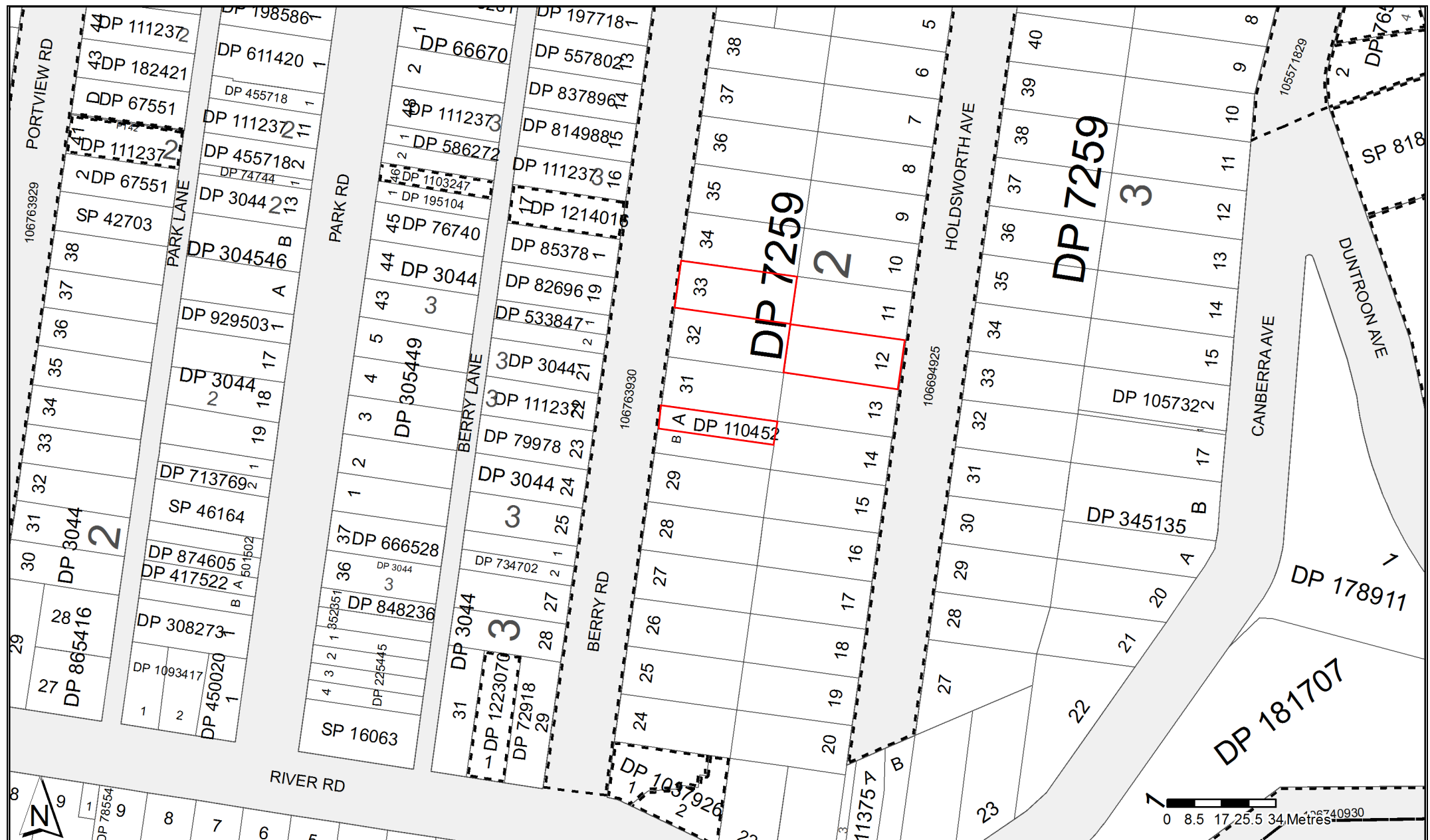
The Register of Consents may be examined at Council's Customer Service Centre for particulars relating to development consents which may have been issued for the use or development of the land.

Enquiries regarding Arterial Road Reservations and Regional Open Space should be directed to the Roads and Traffic Authority and Department of Planning respectively.

The information provided concerning the Coastal Protection Act, 1979 is only to the extent that the Council has been notified by the Department of Public Works and Services.

For more information, please contact the Strategic Planning Department on 9911 3555

Appendix G Land Titles





SEARCH DATE

16/3/2021 8:02AM

FOLIO: 33/2/7259

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

Prior Title(s): VOL 3410 FOL 189

Recorded	Number	Type of Instrument	C.T. Issue
-----	-----	-----	-----
17/9/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
7/6/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
1/10/1991	Z955116	TRANSMISSION APPLICATION	EDITION 1
21/1/1992	E180204	WITHDRAWAL OF CAVEAT	
21/1/1992	E117896	TRANSFER	
21/1/1992	E117897	MORTGAGE	EDITION 2
26/4/1994	U207090	DISCHARGE OF MORTGAGE	
26/4/1994	U207091	TRANSFER	
26/4/1994	U207092	MORTGAGE	EDITION 3
4/8/2005	AB675675	DISCHARGE OF MORTGAGE	
4/8/2005	AB675676	TRANSFER	
4/8/2005	AB675677	MORTGAGE	EDITION 4
20/4/2010	AF442222	TRANSFER ALTERING TENANCY	EDITION 5
19/2/2014	AI389573	DISCHARGE OF MORTGAGE	
19/2/2014	AI389574	MORTGAGE	EDITION 6
14/6/2016	AK506681	CAVEAT	
20/11/2017	AM898837	WITHDRAWAL OF CAVEAT	
20/11/2017	AM898838	DISCHARGE OF MORTGAGE	
20/11/2017	AM898839	TRANSFER	
20/11/2017	AM898865	MORTGAGE	EDITION 7 CORD ISSUED

*** END OF SEARCH ***



RP2

STAMP DUTY



B



2

955116 A

TRANSMISSION APPLICATION

SECTION 93, REAL PROPERTY ACT, 1900
(See Instructions for Completion on back of form)

TA

	of	
\$		R /

DESCRIPTION
OF LAND
Note (a)

LAND of which deceased is registered proprietor		
Torrens Title reference	If Part Only, Delete Whole and Give Details	Location
Certificate of Title Volume 3410 Folio 189 Now FI 33/2/7259	WHOLE	at St. Leonards

REGISTERED
DEALING
Note (b)

Type of Dealing	Registered Number	Torrens Title Reference	Location

DECEASED
REGISTERED
PROPRIETOR
Note (c)

JANE <u>BLANCHE ELIZABETH McALISTER</u>
--

Note (d)

(The abovenamed DECEASED) is registered as proprietor of the land above described. The APPLICANT

APPLICANT
Note (e)

<u>PUBLIC TRUSTEE</u>	OFFICE USE ONLY
-----------------------	-----------------

ENTITLEMENT
Note (f) and (j)

being entitled as Administrator by Representation of the ~~will~~ estate of the abovenamed deceased
Probate No. ~~XXXXXX~~ of whose will was granted on 2/10/73 to Alan John
McAlister who died on 30/6/88 intestate Letters of Administration of his estate were granted to
the Public Trustee on 19/7/89.

Note (d)

hereby applies to be registered as proprietor of the estate or interest of the said deceased in the land above described.

DATE 30 SEP 1991

I hereby certify this application to be correct for the purposes of the real Property Act, 1900.
Signed in my presence by the applicant and sealed.

EXECUTION
Note (g)

Signature of Witness
A. PASCAL
Name of Witness (BLOCK LETTERS)
19 O'Connell St Sydney
Address and Occupation of Witness
Legal Clerk



Signature of Applicant
DEPUTY PUBLIC TRUSTEE

TO BE COMPLETED
BY LODGING PARTY
Notes (g) and (h)

LODGED BY: PUBLIC TRUSTEE		LOCATION OF DOCUMENTS	
19 O'CONNELL ST., SYDNEY, PHONE 240 0735 DELIVERY BOX 706F FAX: 231 4527 Ref: Delivery Box Number MCA LISTER L22		CT PROBATE No. AND/OR OTHER DATE OF DEATH	
Checked Ref 59	Passed	① SECT. 50 X2	Herewith.
Signed	Extra Fee		In L.T.O. with
REGISTERED - 19		Secondary Directions	Produced by
- 1 OCT 1991		Delivery Directions	

Caveat 5378466. does not prevent Reg.

97-01 T



TRANSFER

Real Property Act, 1900



U
207091 P

00574

557891479100155 0045 482022

Office of State Revenue use only

B

(A) **LAND TRANSFERRED**

Show no more than 20 References to Title.
If appropriate, specify the share transferred.

33/2/7259

(B) **LODGED BY**

L.T.O. Box

Name, Address or DX and Telephone

NATIONAL AUSTRALIA BANK LIMITED
National Australia Bank Limited
George Street, Sydney
267-1111 FAX 237-1284

REFERENCE (max. 15 characters):

950802

RALPH DOUGHTY

(C) **TRANSFEROR**

(D) acknowledges receipt of the consideration of **\$395,000.00**

and as regards the land specified above transfers to the Transferee an estate in fee simple

(E) subject to the following **ENCUMBRANCES** 1. 2. 3.

(F) **TRANSFEE**

T

QUENTIN EARL DEMPSTER and ELIZABETH
MARGARET O'BRIEN both of 73 Stafford Road,
Artarmon

(G) **TENANCY: Joint Tenants**

(H) We certify this dealing correct for the purposes of the Real Property Act, 1900.

DATED 10/13/2010

Signed in my presence by the Transferor who is personally known to me.

Peter Thomas Newton

Signature of Witness

PETER THOMAS NEWTON, SOLICITOR

Name of Witness (BLOCK LETTERS)

141/29, 1 MARKET ST., SYDNEY

Address of Witness

R. Doughty

R. Doughty

Signature of Transferor

Signed in my presence by the Transferee who is personally known to

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address of Witness

Ian H. Barnett

Signature of Transferee

Solicitor for Transferee- **Ian H. Barnett**

INSTRUCTIONS FOR FILLING OUT THIS FORM ARE AVAILABLE FROM THE LAND TITLES OFFICE

CHECKED BY (office use only)

Form: 01T
Release: 2.1
www.lpi.nsw.gov.au

TRANSFER

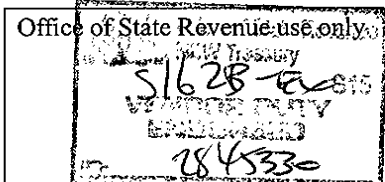
New South Wales
Real Property Act 1900



AB675676T

PRIVACY NOTE: this information is legally required and will become part of the public record

STAMP DUTY



NEW SOUTH WALES DUTY
20-07-2005 0002818343-001
SECTION 18(2)
DUTY \$ *****2.00

(A) TORRENS TITLE

33/2/7259

(B) LODGED BY

Delivery Box 259	Name, Address or DX and Telephone EDS BPA PTY LTD 25 PIERSON ST LOCKLEYS SA 5032 TEL: 132558 LLPN: 123002H Reference:	CODES T TW (Sheriff)
-------------------------	--	---------------------------------------

(C) TRANSFEROR

Quentin Earl DEMPSTER and Elizabeth Margaret O'BRIEN

(D) CONSIDERATION The transferor acknowledges receipt of the consideration of \$ 1,410,000.00 and as regards

(E) ESTATE the land specified above transfers to the transferee an estate in fee simple

(F) SHARE TRANSFERRED

(G) Encumbrances (if applicable):

(H) TRANSFEREE

Rick Anthony WALKER and Roslyn Eleanor WALKER

(I) TENANCY: Joint Tenants

(J) DATE 03-08-05

I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of witness: X

Name of witness:

Address of witness:

Paul Friend.

1 Berry Road.

ST LEONARDS

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor:

Certified for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Signatory's name:

Signatory's capacity:

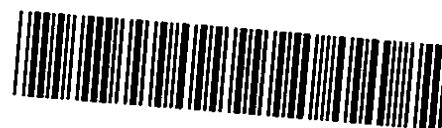
Esther Helen COSSMAN

transferees' solicitor

Form: 01T
Release: 61

TRANSFER

New South Wales
Real Property Act 1900



AM898839W

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar to use the information provided on this form for the establishment and maintenance of the Real Property Act Register. The Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY

Office of State Revenue use only

Office of State Revenue NSW Treasury	
Client No: 119578250	3560
Duty: 10.00	Trans No: 9221630-
Asst details: 001	

(A) TORRENS TITLE

33/2/7259

(B) LODGED BY

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any M J ARMSTRONG & CO - DENTONS 654X LPP:131317K Reference: 396195	CODES T TW
-------------------------	---	--------------------------------

(C) TRANSFEROR

Rick Anthony Walker and Roslyn Eleanor Walker

(D) CONSIDERATION

The transferor acknowledges receipt of the consideration of \$ 6,541,666.00 and as regards

(E) ESTATE

the abovementioned land transfers to the transferee an estate in fee simple

(F) SHARE TRANSFERRED

(G) ENCUMBRANCES (if applicable):

(H) TRANSFeree

SJD St Leonards Pty Ltd ACN 606 429 896

(I) TENANCY:

DATE 13/11/2017

(J) I certify I am an eligible witness and that the transferor signed this dealing in my presence
[See note* below]

Signature of witness:

Name of witness:

Address of witness:

Michael John Beverley
Solicitor & Attorney
L2, 1 Innovation Road
North Ryde NSW 2113
Law Society # 1205

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor:

RAWalker
RWalker

Certified correct for the purposes of the Real Property Act 1900 on behalf of the transferee by the person whose signature appears below.

Signature:

D. Marucci

Signatory's name:

Signatory's capacity:

Daniel John Marucci

solicitor

(K) The transferee's solicitor certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 1438735 Full name: Daniel John Marucci Signature: *D. Marucci*

* s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation.



FOLIO: 33/2/7259

SEARCH DATE	TIME	EDITION NO	DATE
16/3/2021	8:02 AM	7	20/11/2017

NO CERTIFICATE OF TITLE HAS ISSUED FOR THE CURRENT EDITION OF THIS FOLIO.
CONTROL OF THE RIGHT TO DEAL IS HELD BY ING BANK (AUSTRALIA) LIMITED.

LAND

LOT 33 OF SECTION 2 IN DEPOSITED PLAN 7259
AT ST LEONARDS
LOCAL GOVERNMENT AREA LANE COVE
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP7259

FIRST SCHEDULE

SJD ST LEONARDS PTY LTD

(T AM898839)

SECOND SCHEDULE (3 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 A265905 COVENANT
- 3 AM898865 MORTGAGE TO ING BANK (AUSTRALIA) LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***



LAND
REGISTRY
SERVICES

Historical Title



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

16/3/2021 8:00AM

FOLIO: A/110452

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

Prior Title(s): VOL 8023 FOL 79

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
31/8/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
7/11/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
19/1/1994	I959224	DISCHARGE OF MORTGAGE	
19/1/1994	I959225	TRANSFER	EDITION 1
14/6/2016	AK506771	CAVEAT	
20/11/2017	AM898845	WITHDRAWAL OF CAVEAT	
20/11/2017	AM898846	TRANSFER	
20/11/2017	AM898865	MORTGAGE	EDITION 2 CORD ISSUED

*** END OF SEARCH ***

St Leonards Berry & Holdsworth

PRINTED ON 16/3/2021

InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

97-01 T



①

B TRANSFER
Real Property Act, 1900



I
959225 X



42

Office: (office use only)

00*24

50/846965100 40 508Z 262180

(A) LAND TRANSFERRED

Show no more than 20 References to Title.
If appropriate, specify the share transferred.

FOLIO IDENTIFIER: A/110452

(B) LODGED BY

L.T.O. Box

Name, Address or DX and Telephone

369W

HARRINGTON, MAGUIRE & CO.

SOLICITORS

32 YORK STREET, SYDNEY

DX 790 SYDNEY - Phone 2997838

REFERENCE (max. 15 characters): **369W**

(C) TRANSFEROR

STEPHEN JOHN MORRIS

(D) acknowledges receipt of the consideration of \$347,000.00

and as regards the land specified above transfers to the Transferee an estate in fee simple

(E) subject to the following **ENCUMBRANCES** 1. 2. 3.

(F) TRANSFEE

T

LANA MARALYN MAHONEY

TENANCY:

(G)

(H) We certify this dealing correct for the purposes of the Real Property Act, 1900.

DATED *17th January 1994*
~~15 December 1993~~

Signed in my presence by the Transferor who is personally known to me.

[Signature]
Signature of Witness

DAVID DOYLE LENNON

Name of Witness (BLOCK LETTERS)

121 Bower Street, Manly
Address of Witness

A. J. Maguire
Signature of Transferor

Signed in my presence by the Transferee who is personally known to

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address of Witness

Solicitor to ~~Signature of~~ Transferee

J.D. Maguire

INSTRUCTIONS FOR FILLING OUT THIS FORM ARE AVAILABLE FROM THE LAND TITLES OFFICE

CHECKED BY (office use only)

LN 5-1



FOLIO: A/110452

SEARCH DATE	TIME	EDITION NO	DATE
16/3/2021	7:59 AM	2	20/11/2017

NO CERTIFICATE OF TITLE HAS ISSUED FOR THE CURRENT EDITION OF THIS FOLIO.
CONTROL OF THE RIGHT TO DEAL IS HELD BY ING BANK (AUSTRALIA) LIMITED.

LAND

LOT A IN DEPOSITED PLAN 110452
LOCAL GOVERNMENT AREA LANE COVE
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP110452

FIRST SCHEDULE

SJD ST LEONARDS PTY LTD

(T AM898846)

SECOND SCHEDULE (5 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 658032 COVENANT
- 3 A72305 COVENANT
- 4 H264409 CROSS EASEMENTS (S181 B CONVEYANCING ACT, 1919)
AFFECTING THE PARTY WALL(S) SHOWN ON THE COMMON
BOUNDARY OF LOTS A AND B IN DP110452
- 5 AM898865 MORTGAGE TO ING BANK (AUSTRALIA) LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***



CERTIFICATE OF TITLE

PROPERTY ACT, 1900



12679030

NEW SOUTH WALES

Appln. No. 3083

Prior Title Vol. 7457 Fol. 4



Vol. 12679 Fol. 30

Edition issued 23-1-1975

12679 30

Fol.

(Page 1) Vol.

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

CANCELLED

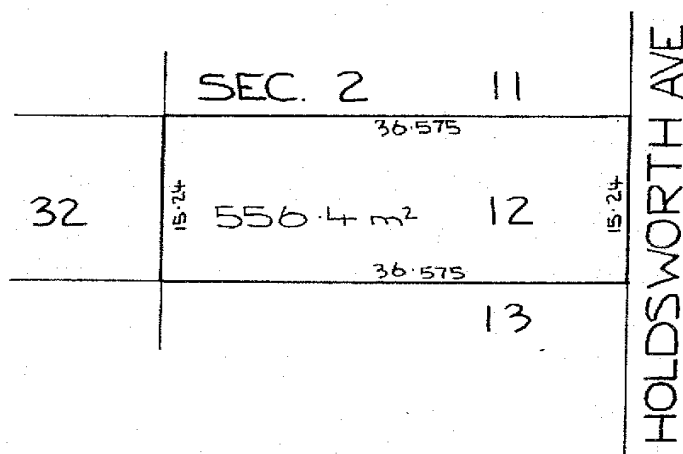
Registrar General.



PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES

SEE AUTO FOLIO



P117407 **AB**
SGRY

REDUCTION RATIO 1:500

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 12 of Section 2 in Deposited Plan 7259 in the Municipality of Lane Cove Parish of Willoughby and County of Cumberland being part of Portion 323 granted to Edward Wollstonecraft on 30-6-1825.

FIRST SCHEDULE

~~ALICE JOAN FELTON, of Wollstonecraft, Widow.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
2. Covenants created by Transfers Nos 658032 and A331244.
3. Mortgage No. 6864251 to Director of War Service Homes. Entered 20-3-1958. Discharged V11315

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



LAND
REGISTRY
SERVICES

Historical Title



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

16/3/2021 8:02AM

FOLIO: 12/2/7259

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

Prior Title(s): VOL 12679 FOL 30

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
5/8/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
22/9/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
10/1/1994	I933615	MORTGAGE	EDITION 1
6/7/1998	5105025	DISCHARGE OF MORTGAGE	
6/7/1998	5105026	DISCHARGE OF MORTGAGE	
6/7/1998	5105027	DISCHARGE OF MORTGAGE	EDITION 2
19/10/2015	AJ914021	TRANSMISSION APPLICATION (DEWISEE, BENEFICIARY, NEXT OF KIN)	EDITION 3
14/6/2016	AK506773	CAVEAT	
20/11/2017	AM898856	WITHDRAWAL OF CAVEAT	
20/11/2017	AM898857	TRANSFER	
20/11/2017	AM898865	MORTGAGE	EDITION 4 CORD ISSUED
15/9/2020	AP912711	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

St Leonards Berry & Holdsworth

PRINTED ON 16/3/2021

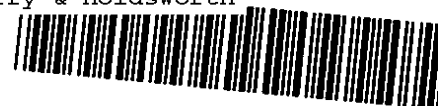
InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

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Received: 16/03/2021 08:02:43

Form: 03AD
Edition: 1203

**TRANSMISSION
APPLICATION**
by a Devisee,
Beneficiary, or Next-of-Kin
New South Wales



AJ914021T



Section 93 Real Property Act 1900

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY

Office of State Revenue use only

Office of State Revenue
NSW Treasury
Client No: 3323749 2766
Duty: \$50 Trans No: 8370202
Asst details: _____

(A) TORRENS TITLE

12/2/7259 LOT 12, SECTION 2, DEPOSITED PLAN 7259

(B) REGISTERED DEALING

Number

Torrens Title

(C) LODGED BY

Document
Collection
Box
1W

Name, Address or DX, Telephone, and Customer Account Number if any

MR GRAEME JOHN FELTON
2 PLUNKETT STREET
NAREMBURN NSW 2065

0403888005

CODE

AD

(D) DECEASED REGISTERED PROPRIETOR

ALICE JOAN FELTON

(E) APPLICANT

TENANCY: TENANTS IN COMMON
44% GLENYS JOAN O'RILEY - 44% (forty-four percent)
28% RHONDA COLLEEN SCULLEY - 28% (twenty-eight percent)
28% GRAEME JOHN FELTON - 28% (twenty-eight percent)

(F) I, the applicant, being entitled as beneficiary under the will/~~devisee under the will~~/next-of-kin of the deceased registered proprietor (who died on 30 April 2015) pursuant to probate/~~letters of administration~~ No. 2015/240186 granted on 2 October 2015 to GRAEME JOHN FELTON, GLENYS JOAN O'RILEY, RHONDA COLLEEN SCULLEY (which is lodged herewith/a certified copy of which is lodged herewith) apply to be registered as proprietor of the estate or interest of the deceased registered proprietor in the land/~~registered dealing~~ specified above.

DATE

17 / 10 / 2015
dd mm yyyy

(G) I certify that I am an eligible witness and that the applicant signed this dealing in my presence. [See note* below].

Signature of witness: Rita Marlene Felton

Name of witness: RITA MARLENE FELTON

Address of witness: 2 PLUNKETT STREET, NAREMBURN
NSW 2065

Certified correct for the purposes of the Real Property Act 1900 by the applicant.

Signature of applicant:

G. O'Riley
R. Sculley
G. Felton

(H) CONSENT OF EXECUTOR, ADMINISTRATOR OR TRUSTEE

I, _____
executor of the will/administrator of the estate/trustee of the estate of the deceased registered proprietor, consent to this application.

Signature of witness:

Signature of executor/administrator/trustee:

Name of witness:

Address of witness:

(I) This section is to be completed where a notice of sale is required and the relevant data has been forwarded through eNOS. The applicant / applicant's solicitor / applicant's agent certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. _____ Full name: _____ Signature: _____

* s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation.

ALL HANDWRITING MUST BE IN BLOCK CAPITALS.

Evidence sighted/sighted and returned (office use only): _____



FOLIO: 12/2/7259

SEARCH DATE	TIME	EDITION NO	DATE
16/3/2021	8:02 AM	4	20/11/2017

NO CERTIFICATE OF TITLE HAS ISSUED FOR THE CURRENT EDITION OF THIS FOLIO.
CONTROL OF THE RIGHT TO DEAL IS HELD BY ING BANK (AUSTRALIA) LIMITED.

LAND

LOT 12 OF SECTION 2 IN DEPOSITED PLAN 7259
AT ST LEONARDS
LOCAL GOVERNMENT AREA LANE COVE
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP7259

FIRST SCHEDULE

SJD ST LEONARDS PTY LTD

(T AM898857)

SECOND SCHEDULE (4 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 658032 COVENANT
- 3 A331244 COVENANT
- 4 AM898865 MORTGAGE TO ING BANK (AUSTRALIA) LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***



ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

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

Summary of Owners Report

Address: - 12 & 18 Berry Road and 15 Holdsworth Avenue St Leonards

Description: - Lots 12 & 33 Section 2 D.P. 7259 & Lot A D.P. 110452

As regards Lot 33 Section 2 D.P. 7259 – 12 Berry Road

<u>Date of Acquisition and term held</u>	<u>Registered Proprietor(s) & Occupations where available</u>	<u>Reference to Title at Acquisition and sale</u>
23.01.1923 (1923 to 1923)	Henry George Alan Harding (Chemist) Arthur Hoskin (Contractor)	Vol 3410 Fol 189
15.03.1923 (1923 to 1936)	Unity McAlister (Spinster)	Vol 3410 Fol 189
09.04.1936 (1936 to 1956)	Milton Frederick McAlister (Company director) Blanche Elizabeth McAlister (Married Woman)	Vol 3410 Fol 189
10.05.1936 (1936 to 1991)	Blanche Elizabeth McAlister (Widow)	Vol 3410 Fol 189 Now 33/2/7259
01.10.1991 (1991 to 1992)	Public Trustee (Administrator of the Estate of Blanche Elizabeth McAlister)	33/2/7259
21.10.1992 (1992 to 1994)	Ralph Doughty	33/2/7259
26.04.1994 (1994 to 2005)	Quentin Earl Dempster Elizabeth Margaret O'Brien	33/2/7259
04.08.2005 (2005 to 2017)	Rick Anthony Walker Roslyn Eleanor Walker	33/2/7259
20.11.2017 (2017 to date)	# SJD St Leonards Pty Ltd	33/2/7259

Denotes current registered proprietor

Leases and Easements: - NIL



ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

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

As regards Lot A D.P. 110452 – 18 Berry Road

<u>Date of Acquisition and term held</u>	<u>Registered Proprietor(s) & Occupations where available</u>	<u>Reference to Title at Acquisition and sale</u>
18.08.1922 (1922 to 1949)	Richard Gross (Retired) (Transmission Application not investigated)	Vol 2445 Fol 221
18.01.1949 (1949 to 1954)	Ida Elsie June Angus (Married Woman) (Transmission Application not investigated)	Vol 2445 Fol 221
13.05.1954 (1954 to 1959)	Agnes Mary Crosbie (Widow)	Vol 2445 Fol 221
23.06.1959 (1959 to 1960)	Charles Lawrence Andrews (Company Director)	Vol 2445 Fol 221
07.04.1960 (1960 to 1978)	Soumbat Bek-Avsharov (Rubber Worker)	Vol 2445 Fol 221 Now Vol 8023 Fol 79
21.03.1978 (1978 to 1983)	Gregory James MacDonald (Accounts Clerk) Natalia MacDonald (Married Woman)	Vol 8023 Fol 79
11.03.1983 (1983 to 1985)	Stephen Thomas Baker Lesley Joanne Baker	Vol 8023 Fol 79
29.11.1985 (1985 to 1994)	Stephen John Morris	Vol 8023 Fol 79 Now A/110452
19.01.1994 (1994 to 2017)	Lana Maralyn Mahoney	A/110452
20.11.2017 (2017 to date)	# SJD St Leonards Pty Ltd	A/110452

Denotes current registered proprietor

Leases: - NIL

Easements: -

- 20.07.1959 9H 264409) Cross Easements for Party Wall (with Lot B).



ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

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

As regards Lot 12 Section 2 D.P. 7259 – 15 Holdsworth Avenue

<u>Date of Acquisition and term held</u>	<u>Registered Proprietor(s) & Occupations where available</u>	<u>Reference to Title at Acquisition and sale</u>
18.02.1924 (1924 to 1937)	Andrew Bayley Colville (School Teacher)	Vol 2785 Fol 34
03.11.1937 (1937 to 1937)	Henry Truman (Builder)	Vol 2785 Fol 34
03.11.1937 (1937 to 1954)	Violet Lily McDonald (Married Woman)	Vol 2785 Fol 34
13.12.1956 (1956 to 1975)	Colin Felton (Clerk)	Vol 2785 Fol 34 Now Vol 7457 Fol 4
15.01.1975 (1975 to 1984)	Alice Joan Felton (Widow) (Section 93 Application not investigated)	Vol 7457 Fol 4 Now Vol 12679 Fol 30
13.03.1984 (1984 to 2015)	Alice Joan Felton (Widow) (Transmission 93 Application not investigated)	Vol 12679 Fol 30 Now 12/2/7259
18.10.2015 (2015 to 2017)	Glenys Joan O'Riley Rhonda Jean Sculley Graeme John Felton	12/2/7259
20.11.2017 (2017 to date)	# SJD St Leonards Pty Ltd	12/2/7259

Denotes current registered proprietor

Leases and Easements: - NIL

Yours Sincerely
Mark Groll
16 March 2021

Appendix H Field Logs

Project Number 62180	Contractor JBS&G	Easting N/A
Client	Date 14-Jan-22	Northing N/A
Project Name St Leonards South	Plant N/A	Coordinate System GDA94_MGA_zone_54
Address 11 Holdsworth Ave, St Leonards. NSW	Method Hand Auger	Logged By Chris Dagger

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Silty Clay, Black to very dark brown, moderate to high plasticity, heterogeneous, soft, trace inclusions of rootlets	SM	HA01_0.0-0.1		No Odours, Staining or Asbestos
		0.2							
		0.3					HA01_0.2-0.3		
		0.4							
HA		0.5		CL-SC	Sandy Clay, Light brown, high plasticity, heterogenous, firm to stiff, minor inclusions of small sandstone and ironstone gravels	SM	HA01_0.5-0.6		No Odours, Staining or Asbestos
		0.6							
		0.7							
		0.8							
		0.9			Termination Depth at: 0.90 m.				
		1							
		1.1							
		1.2							
		1.3							
		1.4							

Comments:

Project Number 62180	Contractor JBS&G	Easting N/A
Client	Date 14-Jan-22	Northing N/A
Project Name St Leonards South	Plant N/A	Coordinate System GDA94_MGA_zone_54
Address 11 Holdsworth Ave, St Leonards. NSW	Method Hand Auger	Logged By Chris Dagger

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Silty Clay, Black to very dark brown, high plasticity, heterogeneous, soft, inclusions of rootlets and tile	M	HA02_0.0-0.1		No Odours, Staining or Asbestos
		0.2							
HA		0.3		CL-SC	Sandy Clay, Light brown, high plasticity, heterogeneous, firm, mottling of bright red, orange and white, no inclusions	SM	HA02_0.2-0.3		No Odours, Staining or Asbestos
		0.4							
		0.5							
		0.6							
		0.7							
		0.8					HA02_0.7-0.8		
		0.9			Termination Depth at: 0.80 m.				
		1.0							
		1.1							
		1.2							
		1.3							
		1.4							

Comments:

Project Number 62180	Contractor JBS&G	Easting N/A
Client	Date 14-Jan-22	Northing N/A
Project Name St Leonards South	Plant N/A	Coordinate System GDA94_MGA_zone_54
Address 11 Holdsworth Ave, St Leonards. NSW	Method Hand Auger	Logged By Chris Dagger

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Clayey Sandy Silt, Black to dark brown, moderate plasticity, heterogeneous, soft, inclusions of rootlets	SM	HA03_0.0-0.1		No Odours, Staining or Asbestos
		0.2							
		0.3					HA03_0.2-0.3		
		0.4							
HA		0.5		CL-SC	Sandy Clay, Light brown/yellow, high plasticity, heterogeneous, firm, inclusions of sandstone and ironstone coarse gravels	SM	HA03_0.5-0.6		No Odours, Staining or Asbestos
		0.6							
		0.7							
		0.8							
		0.9			Termination Depth at: 0.90 m.				
		1							
		1.1							
		1.2							
		1.3							
		1.4							

Comments:

Project Number 62180	Contractor JBS&G	Easting N/A
Client	Date 13-Jan-22	Northing N/A
Project Name St Leonards South	Plant N/A	Coordinate System GDA94_MGA_zone_54
Address 11 Holdsworth Ave, St Leonards. NSW	Method Hand Auger	Logged By Chris Dagger

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Silty Sand, Dark brown, low plasticity, heterogeneous, soft, trace inclusions of rootlets	SM	HA04_0.0-0.1		No Odours, Staining or Asbestos
		0.2							
HA		0.3		CL-SC	Clay, Yellow, high plasticity, firm, no inclusions	SM	HA04_0.2-0.3		No Odours, Staining or Asbestos
		0.4							
		0.5							
		0.6					HA04_0.5-0.6		
		0.7			Termination Depth at: 0.60 m.				
		0.8							
		0.9							
		1							
		1.1							
		1.2							
		1.3							
		1.4							

Comments:

Project Number 62180	Contractor JBS&G	Easting N/A
Client	Date 13-Jan-22	Northing N/A
Project Name St Leonards South	Plant N/A	Coordinate System GDA94_MGA_zone_54
Address 11 Holdsworth Ave, St Leonards. NSW	Method Hand Auger	Logged By Chris Dagger

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA				Fill	Silty Sand, Black to very dark brown, low plasticity, heterogeneous, soft, organic rich soil, no inclusions	W	HA05_0.0-0.1		No Odours, Staining or Asbestos
HA		0.1		Fill	Sandy Clay, Light brown, high plasticity, heterogeneous, firm, minor mottling, no inclusions	W			No Odours, Staining or Asbestos
		0.2					HA05_0.2-0.3		
		0.3							
		0.4							
		0.5							
		0.6							
HA		0.7		CL-SC	Sandy Clay, Light brown, high plasticity, heterogeneous, firm,	W	HA05_0.7-0.8		No Odours, Staining or Asbestos
		0.8			Termination Depth at: 0.80 m. Refusal				
		0.9							
		1							
		1.1							
		1.2							
		1.3							
		1.4							

Comments:

Project Number 62180	Contractor JBS&G	Easting N/A
Client	Date 14-Jan-22	Northing N/A
Project Name St Leonards South	Plant N/A	Coordinate System GDA94_MGA_zone_54
Address 11 Holdsworth Ave, St Leonards. NSW	Method Hand Auger	Logged By Chris Dagger

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Sandy Silt, Black to very dark brown, moderate to low plasticity, heterogeneous, soft, trace inclusions of ironstone gravels, rootlets and glass	D	HA06_0.0-0.1		No Odours, Staining or Asbestos
		0.2							
		0.3					HA06_0.2-0.3		
HA		0.4		Fill	Sandy Clay, Light brown to grey, moderate to low plasticity, heterogeneous, firm, high sand content, minor inclusions of sandstone gravels and roots.	SM			No Odours, Staining or Asbestos
		0.5					HA06_0.4-0.5		
		0.6							
HA		0.7		CL-SC	Sandy Clay, Light brown, moderate to high plasticity, heterogeneous, firm, inclusions of roots	SM	HA06_0.6-0.7		No Odours, Staining or Asbestos
		0.8							
		0.9							
		1.0			Termination Depth at: 1.00 m.				
		1.1							
		1.2							
		1.3							
		1.4							

Comments:

Project Number 62180	Contractor JBS&G	Easting N/A
Client	Date 14-Jan-22	Northing N/A
Project Name St Leonards South	Plant N/A	Coordinate System GDA94_MGA_zone_54
Address 11 Holdsworth Ave, St Leonards. NSW	Method Hand Auger	Logged By Chris Dagger

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Silty Sandy Clay, Dark brown, high plasticity, heterogeneous, firm, inclusions of minor brick, sandstone gravels and tile	SM	HA07_0.0-0.1		No Odours, Staining or Asbestos
		0.2							
		0.3					HA07_0.2-0.3		
		0.4							
HA		0.5		CL-SC	Sandy Clay, Light brown, high plasticity, heterogeneous, firm, inclusions of sandstone and ironstone gravels	SM	HA07_0.5-0.6		No Odours, Staining or Asbestos
		0.6							
		0.7							
		0.8							
		0.9			Termination Depth at: 0.80 m.				
		1.0							
		1.1							
		1.2							
		1.3							
		1.4							

Comments:

Project Number 62180	Contractor JBS&G	Easting N/A
Client	Date 14-Jan-22	Northing N/A
Project Name St Leonards South	Plant N/A	Coordinate System GDA94_MGA_zone_54
Address 11 Holdsworth Ave, St Leonards. NSW	Method Hand Auger	Logged By Chris Dagger

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Sandy Silt, Black to very dark brown, low plasticity, heterogeneous, inclusions of rootles and grass	SM	HA08_0.0-0.1		No Odours, Staining or Asbestos
		0.2							
HA		0.3		CL-SC	Sandy Clay, Orange/yellow, high plasticity, heterogeneous, inclusions of sandstone and ironstone gravels	SM	HA08_0.2-0.3		No Odours, Staining or Asbestos
		0.4							
		0.5							
		0.6					HA08_0.5-0.6		
		0.7			Termination Depth at: 0.60 m. Refusal				
		0.8							
		0.9							
		1							
		1.1							
		1.2							
		1.3							
		1.4							

Comments:

Project Number 62180	Contractor JBS&G	Easting N/A
Client	Date 14-Jan-22	Northing N/A
Project Name St Leonards South	Plant N/A	Coordinate System GDA94_MGA_zone_54
Address 11 Holdsworth Ave, St Leonards. NSW	Method Hand Auger	Logged By Chris Dagger

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Silty Sand, Black to very dark brown, low plasticity, heterogeneous, firm and dense, inclusions of broken brick, ash, tile, asphalt/charcoal and glass	SM	HA09_0.0-0.1		No Odours, Staining or Asbestos
		0.2							
		0.3					HA09_0.2-0.3		
		0.4							
HA		0.5		Fill	Sandy Clay, Grey, high plasticity, heterogeneous, soft, no inclusions	M	HA09_0.5-0.6		No Odours, Staining or Asbestos
		0.6							
HA		0.7		CL-SC	Sandy Clay, Yellow, high plasticity, heterogeneous, firm, inclusions of sandstone and ironstone gravels	SM	HA09_0.65-0.75		No Odours, Staining or Asbestos
		0.8							
		0.9							
		1.0							
		1.1			Termination Depth at: 1.00 m. Refusal				
		1.2							
		1.3							
		1.4							

Comments:

Project Number 62180	Contractor JBS&G	Easting N/A
Client	Date 14-Jan-22	Northing N/A
Project Name St Leonards South	Plant N/A	Coordinate System GDA94_MGA_zone_54
Address 11 Holdsworth Ave, St Leonards. NSW	Method Hand Auger	Logged By Chris Dagger

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Silty Sand, Black to very dark brown, low plasticity, heterogeneous, firm and dense, inclusions of broken brick, ash, tile, asphalt/charcoal and glass	SM	HA10_0.0-0.1		No Odours, Staining or Asbestos
		0.2							
		0.3					HA10_0.2-0.3		
		0.4							
HA		0.5		Fill	Sandy Clay, Grey, high plasticity, heterogeneous, soft, no inclusions	M	HA10_0.5-0.6		No Odours, Staining or Asbestos
		0.6							
		0.7							
		0.8							
HA		0.9		CL-SC	Sandy Clay, Yellow, high plasticity, heterogeneous, firm, inclusions of sandstone and ironstone gravels	SM	HA10_0.8-0.9		No Odours, Staining or Asbestos
		1.0							
		1.1							
		1.2							
		1.3			Termination Depth at: 1.10 m. Refusal				
		1.4							

Comments:

Project Number 62180	Contractor JBS&G	Easting N/A
Client	Date 13-Jan-22	Northing N/A
Project Name St Leonards South	Plant N/A	Coordinate System GDA94_MGA_zone_54
Address 11 Holdsworth Ave, St Leonards. NSW	Method Hand Auger	Logged By Chris Dagger

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Sandy Silt, Black to very dark brown, non-plastic heterogeneous, rich in organic matter, soft, inclusions of building waste: fibreboard (wood), metal, minor inclusions of sandstone gravels	SM	HA11_0.0-0.1		No Odours, Staining or Asbestos
		0.2							
		0.3							
		0.4							
		0.5							
HA		0.6		RWN	Sand, Yellow, angular coarse grained, non-plastic, homogeneous, very dense, very stiff, no inclusions	SM	HA11_0.5-0.6		No Odours, Staining or Asbestos
		0.7							
		0.8							
		0.9			Termination Depth at: 1.00 m. Refusal		HA11_0.7-0.8		
		1.0							
		1.1							
		1.2							
		1.3							
		1.4							

Comments:

Project Number 62180	Contractor JBS&G	Easting N/A
Client	Date 13-Jan-22	Northing N/A
Project Name St Leonards South	Plant N/A	Coordinate System GDA94_MGA_zone_54
Address 11 Holdsworth Ave, St Leonards. NSW	Method Hand Auger	Logged By Chris Dagger

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Sandy Clay, light brown, high plasticity, heterogeneous, firm, mottling, inclusions of brick, metal, sandstone and ironstone gravels.	SM	HA12_0.0-0.1		No Odours, Staining or Asbestos
		0.2							
		0.3					HA12_0.2-0.3		
		0.4							
HA		0.5		RWN	Clay, White, high plasticity, heterogeneous, firm/stiff, mottled, inclusions of ironstone gravels	SM	HA12_0.5-0.6		No Odours, Staining or Asbestos
		0.6							
		0.7							
		0.8							
		0.9			Termination Depth at: 0.80 m. Refusal				
		1							
		1.1							
		1.2							
		1.3							
		1.4							

Comments:

Project Number 62180	Contractor JBS&G	Easting N/A
Client	Date 13-Jan-22	Northing N/A
Project Name St Leonards South	Plant N/A	Coordinate System GDA94_MGA_zone_54
Address 11 Holdsworth Ave, St Leonards. NSW	Method Hand Auger	Logged By Chris Dagger

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Silty Sand, Black to very dark brown, low plasticity, heterogeneous, soft, inclusions of rootlets	SM	HA13_0.0-0.1		No Odours, Staining or Asbestos
HA		0.2		Fill	Clayey Sand, Light brown, non-plastic, heterogeneous, soft, minor inclusions of sandstone gravels	SM	HA13_0.2-0.3		No Odours, Staining or Asbestos
HA		0.3							
		0.4		CL-SC	Sandy Clay, Light brown/beige, high plasticity, heterogeneous, mottled, stiff, no inclusions	SM	HA13_0.4-0.5	No Odours, Staining or Asbestos	
0.5									
		0.6			Termination Depth at: 0.60 m. Refusal				
		0.7							
		0.8							
		0.9							
		1							
		1.1							
		1.2							
		1.3							
		1.4							

Comments:

Project Number 62180	Contractor JBS&G	Easting N/A
Client	Date 13-Jan-22	Northing N/A
Project Name St Leonards South	Plant N/A	Coordinate System GDA94_MGA_zone_54
Address 11 Holdsworth Ave, St Leonards. NSW	Method Hand Auger	Logged By Chris Dagger

Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Silty Sandy Clay, Dark brown, high plasticity, heterogeneous, soft, inclusions of rootlets	SM	HA14_0.0-0.1		No Odours, Staining or Asbestos
		0.2							
HA		0.3		Fill	Clay, Light brown, high plasticity, heterogeneous, stiff, inclusions of rootlets, asphalt/tar, sandstone and ironstone gravels	SM	HA14_0.2-0.3		No Odours, Staining or Asbestos
		0.4							
		0.5							
		0.6							
		0.7							
HA		0.8		RWN	Clay, Light brown, high plasticity, heterogeneous, stiff, increased inclusions of sandstone and ironstone gravels	SM	HA14_0.8-0.9		No Odours, Staining or Asbestos
		0.9							
HA		1.0		CL-SC	Sandy Clay, Yellow, high plasticity, heterogeneous, firm, mottling of red and white, inclusions of ironstone	SM	HA14_1.0-1.1		No Odours, Staining or Asbestos
		1.1							
		1.2							
		1.3							
		1.4			Termination Depth at: 1.40 m.				

Comments:

PROJECT NUMBER 60615	DRILLING COMPANY JBS&G	EASTING N/A
PROJECT NAME St Leonards DD	DRILLING DATE 19-Mar-21	NORTHING N/A
CLIENT Aqualand	DRILL RIG Hand Auger	COORD SYS N/A
ADDRESS St Leonards	DRILLING METHOD Hand Auger	COORD SOURCE Map Approximation
	DIAMETER 100 mm	LOGGED BY JS

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Fill- Clay, brown/orange, high plasticity, firm, homogeneous, inclusions of ironstone	W	HA01 0.0_0.1	0	No Odours, Staining or Asbestos
		HA01 0.2_0.3					0	No Odours, Staining or Asbestos	
		0.5			Termination Depth at: 0.5 m.				End of Hole- Sandstone Refusal
		0.6							
		0.7							
		0.8							
		0.9							
		1							
		1.1							
		1.2							
		1.3							
		1.4							

PROJECT NUMBER 60615	DRILLING COMPANY JBS&G	EASTING N/A
PROJECT NAME St Leonards DD	DRILLING DATE 19-Mar-21	NORTHING N/A
CLIENT Aqualand	DRILL RIG Hand Auger	COORD SYS N/A
ADDRESS St Leonards	DRILLING METHOD Hand Auger	COORD SOURCE Map Approximation
	DIAMETER 150 mm	LOGGED BY JS

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Fill- Clay, brown, medium plasticity, firm, homogeneous	D	HA02 0.0_0.1	0	No Odours, Staining or Asbestos
		0.2							
		0.3					HA02 0.2_0.3	0	No Odours, Staining or Asbestos
		0.4		CL-ML	Silty clay, orange, high plasticity, firm, homogeneous	D			
		0.5							
		0.6							
		0.7							
		0.8							
		0.9							
		1							
		1.1							
		1.2							
		1.3							
		1.4							
					Termination Depth at: 0.7 m.				

PROJECT NUMBER 60615	DRILLING COMPANY JBS&G	EASTING N/A
PROJECT NAME St Leonards DD	DRILLING DATE 19-Mar-21	NORTHING N/A
CLIENT Aqualand	DRILL RIG Hand Auger	COORD SYS N/A
ADDRESS St Leonards	DRILLING METHOD Hand Auger	COORD SOURCE Map Approximation
	DIAMETER 150 mm	LOGGED BY JS

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Fill- Silty clay, topsoil, dark brown, low plasticity, soft, inclusions of gravel	W	HA03 0.0_0.1	0	No Odours, Staining or Asbestos
		0.2		Fill	Fill- Clay, grey/brown mottled, high plasticity, soft	W	HA03 0.2_0.3	0	No Odours, Staining or Asbestos
		0.3							
		0.4							
		0.5							
		0.6							
		0.7							
		0.8		CL-ML	Silty clay, orange/light brown, high plasticity, firm, homogeneous, inclusions of sandstone cobbles	W			
		0.9							
		1.0							
		1.1							
		1.2							
		1.3							
		1.4			Termination Depth at: 1.3 m.				

PROJECT NUMBER 60615	DRILLING COMPANY JBS&G	EASTING N/A
PROJECT NAME St Leonards DD	DRILLING DATE 19-Mar-21	NORTHING N/A
CLIENT Aqualand	DRILL RIG Hand Auger	COORD SYS N/A
ADDRESS St Leonards	DRILLING METHOD Hand Auger	COORD SOURCE Map Approximation
	DIAMETER 150 mm	LOGGED BY JS

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Fill- Silty clay, brown, high plasticity, heterogeneous, soft, inclusions of ironstone	SM	HA04 0.0_0.1	0	No Odours, Staining or Asbestos
		0.2							
		0.3					HA04 0.2_0.3	0	No Odours, Staining or Asbestos
		0.4		CL-ML	Silty clay, orange, high plasticity, homogeneous, dense	SM			
		0.5			Termination Depth at: 0.4 m.				
		0.6							
		0.7							
		0.8							
		0.9							
		1							
		1.1							
		1.2							
		1.3							
		1.4							

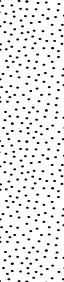
PROJECT NUMBER 60615	DRILLING COMPANY JBS&G	EASTING N/A
PROJECT NAME St Leonards DD	DRILLING DATE 19-Mar-21	NORTHING N/A
CLIENT Aqualand	DRILL RIG Hand Auger	COORD SYS N/A
ADDRESS St Leonards	DRILLING METHOD Hand Auger	COORD SOURCE Map Approximation
	DIAMETER 150 mm	LOGGED BY JS

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Fill- Clay, grey/orange mottle, high plasticity, soft	W	HA05 0.0_0.1	0	No Odours, Staining or Asbestos
		0.3			Termination Depth at: 0.3 m.				End of Hole- Sandstone Refusal
		0.4							
		0.5							
		0.6							
		0.7							
		0.8							
		0.9							
		1							
		1.1							
		1.2							
		1.3							
		1.4							

PROJECT NUMBER 60615	DRILLING COMPANY JBS&G	EASTING N/A
PROJECT NAME St Leonards DD	DRILLING DATE 19-Mar-21	NORTHING N/A
CLIENT Aqualand	DRILL RIG Hand Auger	COORD SYS N/A
ADDRESS St Leonards	DRILLING METHOD Hand Auger	COORD SOURCE Map Approximation
	DIAMETER 150 mm	LOGGED BY JS

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Fill- Clay, orange/grey mottle, high plasticity, soft, inclusions of ash	W	HA06 0.0_0.1	0	No Odours, Staining or Asbestos
		0.2							
		0.3					HA06 0.2_0.3	0	No Odours, Staining or Asbestos
		0.4							
		0.5					HA06 0.5_0.6	0	No Odours, Staining or Asbestos
		0.6							
		0.7		Sandstone	Weathered sandstone, orange, fine grained, firm	D			
		0.8					HA06 0.7_0.8	0	No Odours, Staining or Asbestos
		0.9							
		1.0			Termination Depth at: 0.9 m.				
		1.1							
		1.2							
		1.3							
		1.4							

PROJECT NUMBER 60615	DRILLING COMPANY JBS&G	EASTING N/A
PROJECT NAME St Leonards DD	DRILLING DATE 19-Mar-21	NORTHING N/A
CLIENT Aqualand	DRILL RIG Hand Auger	COORD SYS N/A
ADDRESS St Leonards	DRILLING METHOD Hand Auger	COORD SOURCE Map Approximation
	DIAMETER 150 mm	LOGGED BY JS

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Fill- Silty clay, topsoil, dark brown, low plasticity, soft, inclusions of gravel	W	HA07 0.0_0.1	0	No Odours, Staining or Asbestos
		0.2		CL-ML	Silty clay, orange/grey mottle, high plasticity, firm, inclusions of ironstone and sandstone	W	HA07 0.2_0.3	0	No Odours, Staining or Asbestos
		0.3							
		0.4							
		0.5			Termination Depth at: 0.5 m.				
		0.6							
		0.7							
		0.8							
		0.9							
		1							
		1.1							
		1.2							
		1.3							
		1.4							

PROJECT NUMBER 60615	DRILLING COMPANY JBS&G	EASTING N/A
PROJECT NAME St Leonards DD	DRILLING DATE 19-Mar-21	NORTHING N/A
CLIENT Aqualand	DRILL RIG Hand Auger	COORD SYS N/A
ADDRESS St Leonards	DRILLING METHOD Hand Auger	COORD SOURCE Map Approximation
	DIAMETER 150 mm	LOGGED BY JS

COMMENTS

Drilling Method	Water (m bgl)	Depth (m bgl)	Graphic Log	Lithological Class	Lithological Description	Moisture	Samples	PID	Additional Observations
HA		0.1		Fill	Fill- Silty clay, topsoil, brown, medium plasticity, soft, homogeneous	W	HA08 0.0_0.1	0	No Odours, Staining or Asbestos
		0.2			Termination Depth at: 0.2 m.				End of Hole- Sandstone Refusal
		0.3							
		0.4							
		0.5							
		0.6							
		0.7							
		0.8							
		0.9							
		1							
		1.1							
		1.2							
		1.3							
		1.4							

Appendix I Laboratory Certificates of Analysis

CERTIFICATE OF ANALYSIS 264732

Client Details

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

Sample Details

Your Reference	60615, St Leonards
Number of Samples	1 soil
Date samples received	19/03/2021
Date completed instructions received	19/03/2021

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	22/03/2021
Date of Issue	22/03/2021
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Asbestos Approved By

Analysed by Asbestos Approved Identifier: Ridwan Wijaya
 Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By

Dragana Tomas, Senior Chemist
 Jaimie Loa-Kum-Cheung, Metals Supervisor
 Lucy Zhu, Asbestos Supervisor
 Manju Dewendrage, Chemist

Authorised By



Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		264732-1
Your Reference	UNITS	QA01
Date Sampled		19/03/2021
Type of sample		soil
Date extracted	-	19/03/2021
Date analysed	-	22/03/2021
TRH C ₆ - C ₉	mg/kg	<25
TRH C ₆ - C ₁₀	mg/kg	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<3
Surrogate aaa-Trifluorotoluene	%	102

svTRH (C10-C40) in Soil		
Our Reference		264732-1
Your Reference	UNITS	QA01
Date Sampled		19/03/2021
Type of sample		soil
Date extracted	-	19/03/2021
Date analysed	-	20/03/2021
TRH C ₁₀ - C ₁₄	mg/kg	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100
TRH >C ₁₀ -C ₁₆	mg/kg	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	105

PAHs in Soil		
Our Reference		264732-1
Your Reference	UNITS	QA01
Date Sampled		19/03/2021
Type of sample		soil
Date extracted	-	19/03/2021
Date analysed	-	19/03/2021
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	0.5
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	1
Pyrene	mg/kg	0.9
Benzo(a)anthracene	mg/kg	0.5
Chrysene	mg/kg	0.3
Benzo(b,j+k)fluoranthene	mg/kg	0.6
Benzo(a)pyrene	mg/kg	0.4
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	0.4
Total +ve PAH's	mg/kg	4.8
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.6
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.6
Surrogate <i>p</i> -Terphenyl-d14	%	129

Organochlorine Pesticides in soil		
Our Reference		264732-1
Your Reference	UNITS	QA01
Date Sampled		19/03/2021
Type of sample		soil
Date extracted	-	19/03/2021
Date analysed	-	19/03/2021
alpha-BHC	mg/kg	<0.1
HCB	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	128

PCBs in Soil		
Our Reference		264732-1
Your Reference	UNITS	QA01
Date Sampled		19/03/2021
Type of sample		soil
Date extracted	-	19/03/2021
Date analysed	-	19/03/2021
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCMX	%	128

Acid Extractable metals in soil		
Our Reference		264732-1
Your Reference	UNITS	QA01
Date Sampled		19/03/2021
Type of sample		soil
Date prepared	-	22/03/2021
Date analysed	-	22/03/2021
Arsenic	mg/kg	5
Cadmium	mg/kg	0.5
Chromium	mg/kg	16
Copper	mg/kg	45
Lead	mg/kg	250
Mercury	mg/kg	0.2
Nickel	mg/kg	5
Zinc	mg/kg	140

Moisture		
Our Reference	UNITS	264732-1
Your Reference		QA01
Date Sampled		19/03/2021
Type of sample		soil
Date prepared	-	19/03/2021
Date analysed	-	22/03/2021
Moisture	%	24

Asbestos ID - soils NEPM		
Our Reference		264732-1
Your Reference	UNITS	QA01
Date Sampled		19/03/2021
Type of sample		soil
Date analysed	-	22/03/2021
Sample mass tested	g	585.16
Sample Description	-	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected
Total Asbestos ^{#1}	g/kg	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected
ACM >7mm Estimation*	g	—
FA and AF Estimation*	g	—
FA and AF Estimation*#2	%(w/w)	<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.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.

Method ID	Methodology Summary
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date extracted	-			19/03/2021	[NT]	[NT]	[NT]	[NT]	19/03/2021	[NT]
Date analysed	-			22/03/2021	[NT]	[NT]	[NT]	[NT]	22/03/2021	[NT]
TRH C ₆ - C ₉	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	87	[NT]
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	87	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	74	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	103	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	89	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	85	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	90	[NT]
naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	115	[NT]	[NT]	[NT]	[NT]	114	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date extracted	-			19/03/2021	[NT]	[NT]	[NT]	[NT]	19/03/2021	[NT]
Date analysed	-			20/03/2021	[NT]	[NT]	[NT]	[NT]	20/03/2021	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	103	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	83	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	108	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	103	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	83	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	108	[NT]
Surrogate o-Terphenyl	%		Org-020	110	[NT]	[NT]	[NT]	[NT]	108	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date extracted	-			19/03/2021	[NT]	[NT]	[NT]	[NT]	19/03/2021	[NT]
Date analysed	-			19/03/2021	[NT]	[NT]	[NT]	[NT]	19/03/2021	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	129	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	125	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	112	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	132	[NT]	[NT]	[NT]	[NT]	122	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date extracted	-			19/03/2021	[NT]	[NT]	[NT]	[NT]	19/03/2021	[NT]
Date analysed	-			19/03/2021	[NT]	[NT]	[NT]	[NT]	19/03/2021	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	115	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	109	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	119	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	114	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	123	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	130	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	123	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	126	[NT]	[NT]	[NT]	[NT]	124	[NT]

Client Reference: 60615, St Leonards

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date extracted	-			19/03/2021	[NT]	[NT]	[NT]	[NT]	19/03/2021	[NT]
Date analysed	-			19/03/2021	[NT]	[NT]	[NT]	[NT]	19/03/2021	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-021	126	[NT]	[NT]	[NT]	[NT]	124	[NT]

Client Reference: 60615, St Leonards

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date prepared	-			22/03/2021	[NT]	[NT]	[NT]	[NT]	22/03/2021	[NT]
Date analysed	-			22/03/2021	[NT]	[NT]	[NT]	[NT]	22/03/2021	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	106	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	101	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	112	[NT]

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

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.

018291

CHAIN OF CUSTODY

[illegible]

CERTIFICATE OF ANALYSIS 286699

Client Details

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

Sample Details

Your Reference	<u>61280, St Leonards</u>
Number of Samples	4 Soil
Date samples received	14/01/2022
Date completed instructions received	17/01/2022

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	21/01/2022
Date of Issue	21/01/2022
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Asbestos Approved By

Analysed by Asbestos Approved Analyst: Nyovan Moonean
 Authorised by Asbestos Approved Signatory: Panika Wongchanda

Results Approved By

Hannah Nguyen, Metals Supervisor
 Kyle Gavrily, Chemist
 Manju Dewendrage, Prep Team Leader
 Panika Wongchanda, Asbestos Approved Identifier/Counter
 Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		286699-1
Your Reference	UNITS	QA01
Date Sampled		14/01/2022
Type of sample		Soil
Date extracted	-	18/01/2022
Date analysed	-	18/01/2022
TRH C ₆ - C ₉	mg/kg	<25
TRH C ₆ - C ₁₀	mg/kg	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<3
Surrogate aaa-Trifluorotoluene	%	102

svTRH (C10-C40) in Soil		
Our Reference		286699-1
Your Reference	UNITS	QA01
Date Sampled		14/01/2022
Type of sample		Soil
Date extracted	-	18/01/2022
Date analysed	-	20/01/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100
Total +ve TRH (C10-C36)	mg/kg	<50
TRH >C ₁₀ -C ₁₆	mg/kg	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	91

PAHs in Soil		
Our Reference		286699-1
Your Reference	UNITS	QA01
Date Sampled		14/01/2022
Type of sample		Soil
Date extracted	-	18/01/2022
Date analysed	-	19/01/2022
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	0.2
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	0.5
Pyrene	mg/kg	0.4
Benzo(a)anthracene	mg/kg	0.2
Chrysene	mg/kg	0.2
Benzo(b,j+k)fluoranthene	mg/kg	0.3
Benzo(a)pyrene	mg/kg	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2
Total +ve PAH's	mg/kg	2.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate <i>p</i> -Terphenyl-d14	%	87

Organochlorine Pesticides in soil		
Our Reference		286699-1
Your Reference	UNITS	QA01
Date Sampled		14/01/2022
Type of sample		Soil
Date extracted	-	18/01/2022
Date analysed	-	19/01/2022
alpha-BHC	mg/kg	<0.1
HCB	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	86

PCBs in Soil		
Our Reference		286699-1
Your Reference	UNITS	QA01
Date Sampled		14/01/2022
Type of sample		Soil
Date extracted	-	18/01/2022
Date analysed	-	19/01/2022
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCMX	%	86

Acid Extractable metals in soil		
Our Reference		286699-1
Your Reference	UNITS	QA01
Date Sampled		14/01/2022
Type of sample		Soil
Date prepared	-	18/01/2022
Date analysed	-	19/01/2022
Arsenic	mg/kg	13
Cadmium	mg/kg	<0.4
Chromium	mg/kg	15
Copper	mg/kg	39
Lead	mg/kg	150
Mercury	mg/kg	<0.1
Nickel	mg/kg	4
Zinc	mg/kg	170

Moisture		
Our Reference	UNITS	286699-1
Your Reference		QA01
Date Sampled		14/01/2022
Type of sample		Soil
Date prepared	-	18/01/2022
Date analysed	-	19/01/2022
Moisture	%	24

Asbestos ID - soils NEPM - ASB-001		
Our Reference		286699-1
Your Reference	UNITS	QA01
Date Sampled		14/01/2022
Type of sample		Soil
Date analysed	-	21/01/2022
Sample mass tested	g	387.59
Sample Description	-	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected
Total Asbestos ^{#1}	g/kg	<0.1
Asbestos ID in soil <0.1g/kg*	-	Chrysotile Amosite
ACM >7mm Estimation*	g	—
FA and AF Estimation*	g	0.0017
ACM >7mm Estimation*	%(w/w)	<0.01
FA and AF Estimation*#2	%(w/w)	<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.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.

Method ID	Methodology Summary
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			18/01/2022	[NT]	[NT]	[NT]	[NT]	18/01/2022	[NT]
Date analysed	-			18/01/2022	[NT]	[NT]	[NT]	[NT]	18/01/2022	[NT]
TRH C ₆ - C ₉	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	101	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	107	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	96	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	98	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	106	[NT]	[NT]	[NT]	[NT]	106	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			18/01/2022	[NT]	[NT]	[NT]	[NT]	18/01/2022	[NT]
Date analysed	-			20/01/2022	[NT]	[NT]	[NT]	[NT]	20/01/2022	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	85	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	89	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	85	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	89	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	109	[NT]
Surrogate o-Terphenyl	%		Org-020	81	[NT]	[NT]	[NT]	[NT]	85	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			18/01/2022	[NT]	[NT]	[NT]	[NT]	18/01/2022	[NT]
Date analysed	-			19/01/2022	[NT]	[NT]	[NT]	[NT]	19/01/2022	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	123	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	87	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	96	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	101	[NT]	[NT]	[NT]	[NT]	124	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			18/01/2022	[NT]	[NT]	[NT]	[NT]	18/01/2022	[NT]
Date analysed	-			19/01/2022	[NT]	[NT]	[NT]	[NT]	19/01/2022	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	85	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	103	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	78	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	88	[NT]	[NT]	[NT]	[NT]	87	[NT]

Client Reference: 61280, St Leonards

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			18/01/2022	[NT]	[NT]	[NT]	[NT]	18/01/2022	[NT]
Date analysed	-			19/01/2022	[NT]	[NT]	[NT]	[NT]	19/01/2022	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-021	88	[NT]	[NT]	[NT]	[NT]	87	[NT]

Client Reference: 61280, St Leonards

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date prepared	-			18/01/2022	[NT]	[NT]	[NT]	[NT]	18/01/2022	[NT]
Date analysed	-			19/01/2022	[NT]	[NT]	[NT]	[NT]	19/01/2022	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	100	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	98	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

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.

Factual description of asbestos identified in the soil samples: NEPM

Sample 286699-1; Chrysotile and Amosite asbestos identified in 0.0024g of fibrous matted material

CHAIN OF CUSTODY

23705



PROJECT NO.: 61280					LABORATORY BATCH NO.:				
PROJECT NAME: St Leonards					SAMPLERS: CD				
DATE NEEDED BY: 8th					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)@jbsg.com.au; (3)@jbsg.com.au									
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:									
well email C Dagger									
TYPE OF ASBESTOS ANALYSIS									
IDENTIFICATION									
NEPM/WA									
NOTES:									
SAMPLE ID									
MATRIX									
DATE									
TIME									
TYPE & PRESERVATIVE									
pH									
QA01 1 Soil 14/1 Jar F Bay.									
QA02 2									
QA03 3									
QA04 4									
Job No: 286599									
Date Received: 14/12									
Time Received: 1620									
Received by: SD									
Temp/Cool/Ambient									
Cooling: Ice/icepack									
Security: Intact/Broken/None									
RELIQUISHED BY:									
NAME: DATE:									
OF: JBS&G									
NAME: DATE:									
OF:									
METHOD OF SHIPMENT:									
CONSIGNMENT NOTE NO.									
TRANSPORT CO.									
CONSIGNMENT NOTE NO.									
TRANSPORT CO.									
RECEIVED BY:									
NAME: DATE:									
OF: 14/12/22									
OF: GCS STN 1620									
FOR RECEIVING LAB USE ONLY:									
COOLER SEAL - Yes..... No..... Intact..... Broken.....									
COOLER TEMP deg C 18C									
COOLER SEAL - Yes..... No..... Intact..... Broken.....									
COOLER TEMP deg C									
Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsrd; C = Sodium Hydroxide Prsrd; VC = Hydrochloric Acid Prsrd Vial; VS = Sulfuric Acid Prsrd Vial; S = Sulfuric Acid Prsrd; Z = Zinc Prsrd; E = EDTA Prsrd; ST = Sterile Bottle; O = Other									

PROJECT NO.: 60615					LABORATORY BATCH NO.:														
PROJECT NAME: St Leonards					SAMPLERS:														
DATE NEEDED BY: 24th TAT					QC LEVEL: NEPM (2013)														
PHONE: Sydney 02 8245 0300 Perth 08 9488 0100 Brisbane 07 3112 2688 Melbourne 03 9642 0599 Adelaide 08 8431 7113 SEND REPORT & INVOICE TO: (1) adminsw@bsg.com.au; (2) jordan.lay@bsg.com.au; (3) G.B. Elby@bsg.com.au																			
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:																			
					TYPE OF ASBESTOS ANALYSIS IDENTIFICATION MEM/N/A 781709 NOTES:														
SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH														
HAD1-0-0.1	SOIL	17/3/21		J + B + Ice		X													
0.2-0.3						X													
HAD2-0-0.1						X													
0.2-0.3						X													
HAD3-0-0.1																			
0.2-0.3																			
0.5-0.6																			
1.0-1.1																			
HAD4-0-0.1																			
0.2-0.3						X													
HAD5-0-0.1						X													
HAD6-0-0.1																			
0.2-0.3																			
0.5-0.6						X													
0.7-0.8																			
HAD7-0-0.1				Jar		X													
0.2-0.3				Jar + Bag + Ice		X													
HAD8-0-0.1						X													
0.2-0.3						X													
QCCO1A						X													
RELINQUISHED BY:					METHOD OF SHIPMENT:					RECEIVED BY:					FOR RECEIVING LAB USE ONLY:				
NAME: Josh DATE: 17/3/21					CONSIGNMENT NOTE NO.					NAME: MR [Signature] DATE: 19/3/21 4:36 PM					COOLER SEAL - Yes..... No..... Intact..... Broken.....				
OF: JBS&G					TRANSPORT CO. Courier					OF: Eurofins					COOLER TEMP. D deg C				
NAME: DATE:					CONSIGNMENT NOTE NO.					DATE:					COOLER SEAL - Yes..... No..... Intact..... Broken.....				
															COOLER TEMP..... deg C				

CHAIN OF CUSTODY

[illegible]

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

Australia
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

Newcastle

4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand
Auckland

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

Christchurch

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

Sample Receipt Advice

Company name: JBS & G Australia (NSW) P/L
Contact name: Joshua Stainlay
Project name: ST LEONARDS
Project ID: 60615
Turnaround time: 1 Day
Date/Time received: Mar 19, 2021 4:36 PM
Eurofins reference: 781709

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 0 degrees Celsius.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Joshua Stainlay - jstainlay@jbsg.com.au.

Australia

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

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

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

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

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

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000
Project Name: ST LEONARDS
Project ID: 60615

Order No.:
Report #: 781709
Phone: 02 8245 0300
Fax:

Received: Mar 19, 2021 4:36 PM
Due: Mar 22, 2021
Priority: 1 Day
Contact Name: Joshua Stainlay

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	JBS&G Suite 2	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
Mayfield Laboratory													
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	HA01 0.2-0.3	Mar 19, 2021		Soil	S21-Ma36659	X					X	X	
2	HA02 0-0.1	Mar 19, 2021		Soil	S21-Ma36660	X					X	X	
3	HA03 0-0.1	Mar 19, 2021		Soil	S21-Ma36661	X					X	X	
4	HA03 1.0-1.1	Mar 19, 2021		Soil	S21-Ma36662			X	X		X		
5	HA04 0.2-0.3	Mar 19, 2021		Soil	S21-Ma36663	X					X	X	
6	HA05 0-0.1	Mar 19, 2021		Soil	S21-Ma36664	X					X	X	
7	HA06 0.5-0.6	Mar 19, 2021		Soil	S21-Ma36665	X					X	X	
8	HA06 0.7-0.8	Mar 19, 2021		Soil	S21-Ma36666			X	X		X		
9	HA07 0-0.1	Mar 19, 2021		Soil	S21-Ma36667	X					X	X	

Australia

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Phone : +61 2 4968 8448

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IANZ # 1290

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

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000
Project Name: ST LEONARDS
Project ID: 60615

Order No.:
Report #: 781709
Phone: 02 8245 0300
Fax:

Received: Mar 19, 2021 4:36 PM
Due: Mar 22, 2021
Priority: 1 Day
Contact Name: Joshua Stainlay

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	JBS&G Suite 2	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
Mayfield Laboratory													
External Laboratory													
10	HA07_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36668			X	X		X		
11	HA08_0-0.1	Mar 19, 2021		Soil	S21-Ma36669	X					X	X	
12	QC01	Mar 19, 2021		Soil	S21-Ma36670	X					X	X	
13	TS	Mar 19, 2021		Water	S21-Ma36671								X
14	TB	Mar 19, 2021		Water	S21-Ma36672					X			
15	RINSE	Mar 19, 2021		Water	S21-Ma36673			X	X	X			
16	HA01_0-0.1	Mar 19, 2021		Soil	S21-Ma36674		X						
17	HA02_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36675		X						
18	HA03_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36676		X						
19	HA03_0.5-0.6	Mar 19, 2021		Soil	S21-Ma36677		X						
20	HA04_0-0.1	Mar 19, 2021		Soil	S21-Ma36678		X						

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Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
Mayfield Laboratory													
External Laboratory													
21	HA06_0-0.1	Mar 19, 2021		Soil	S21-Ma36679		X						
22	HA06_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36680		X						
Test Counts						9	7	4	4	2	12	9	1

JBS & G Australia (NSW) P/L
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NSW 2000



NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: Joshua Stainlay
Report 781709-AID
Project Name ST LEONARDS
Project ID 60615
Received Date Mar 19, 2021
Date Reported Mar 22, 2021

Methodology:

Asbestos Fibre
 Identification

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

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

Unknown Mineral
 Fibres

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

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

Subsampling Soil
 Samples

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

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

Bonded asbestos-
 containing material
 (ACM)

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

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

Limit of Reporting

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

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

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

Project Name ST LEONARDS
Project ID 60615
Date Sampled Mar 19, 2021
Report 781709-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
HA01_0.2-0.3	21-Ma36659	Mar 19, 2021	Approximate Sample 424g Sample consisted of: Brown fine-grained clayey soil, coal and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA02_0-0.1	21-Ma36660	Mar 19, 2021	Approximate Sample 737g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA03_0-0.1	21-Ma36661	Mar 19, 2021	Approximate Sample 565g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA04_0.2-0.3	21-Ma36663	Mar 19, 2021	Approximate Sample 502g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA05_0-0.1	21-Ma36664	Mar 19, 2021	Approximate Sample 674g Sample consisted of: Brown fine-grained clayey soil, coal and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA06_0.5-0.6	21-Ma36665	Mar 19, 2021	Approximate Sample 406g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA07_0-0.1	21-Ma36667	Mar 19, 2021	Approximate Sample 834g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA08_0-0.1	21-Ma36669	Mar 19, 2021	Approximate Sample 465g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
QC01	21-Ma36670	Mar 19, 2021	Approximate Sample 698g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

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

Asbestos - LTM-ASB-8020

Testing Site

Sydney

Extracted

Mar 19, 2021

Holding Time

Indefinite

Australia

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

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Unit F3, Building F
16 Mars Road
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Kewdale WA 6105
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New Zealand

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NSW 2000
Project Name: ST LEONARDS
Project ID: 60615

Order No.:
Report #: 781709
Phone: 02 8245 0300
Fax:

Received: Mar 19, 2021 4:36 PM
Due: Mar 22, 2021
Priority: 1 Day
Contact Name: Joshua Stainlay

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	JBS&G Suite 2	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
Mayfield Laboratory													
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	HA01 0.2-0.3	Mar 19, 2021		Soil	S21-Ma36659	X					X	X	
2	HA02 0-0.1	Mar 19, 2021		Soil	S21-Ma36660	X					X	X	
3	HA03 0-0.1	Mar 19, 2021		Soil	S21-Ma36661	X					X	X	
4	HA03 1.0-1.1	Mar 19, 2021		Soil	S21-Ma36662			X	X		X		
5	HA04 0.2-0.3	Mar 19, 2021		Soil	S21-Ma36663	X					X	X	
6	HA05 0-0.1	Mar 19, 2021		Soil	S21-Ma36664	X					X	X	
7	HA06 0.5-0.6	Mar 19, 2021		Soil	S21-Ma36665	X					X	X	
8	HA06 0.7-0.8	Mar 19, 2021		Soil	S21-Ma36666			X	X		X		
9	HA07 0-0.1	Mar 19, 2021		Soil	S21-Ma36667	X					X	X	

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Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	JBS&G Suite 2	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
Mayfield Laboratory													
External Laboratory													
10	HA07_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36668			X	X		X		
11	HA08_0-0.1	Mar 19, 2021		Soil	S21-Ma36669	X					X	X	
12	QC01	Mar 19, 2021		Soil	S21-Ma36670	X					X	X	
13	TS	Mar 19, 2021		Water	S21-Ma36671								X
14	TB	Mar 19, 2021		Water	S21-Ma36672					X			
15	RINSE	Mar 19, 2021		Water	S21-Ma36673			X	X	X			
16	HA01_0-0.1	Mar 19, 2021		Soil	S21-Ma36674		X						
17	HA02_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36675		X						
18	HA03_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36676		X						
19	HA03_0.5-0.6	Mar 19, 2021		Soil	S21-Ma36677		X						
20	HA04_0-0.1	Mar 19, 2021		Soil	S21-Ma36678		X						

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Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
Mayfield Laboratory													
External Laboratory													
21	HA06_0-0.1	Mar 19, 2021		Soil	S21-Ma36679		X						
22	HA06_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36680		X						
Test Counts						9	7	4	4	2	12	9	1

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

Units

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

Terms

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

S21-Ma36659, S21-Ma36665, S21-Ma36669: Samples received were less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

Sample Integrity

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

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 reports.

Attention: **Joshua Stainlay**

Report **781709-S**
Project name **ST LEONARDS**
Project ID **60615**
Received Date **Mar 19, 2021**

Client Sample ID			HA01_0.2-0.3	HA02_0-0.1	HA03_0-0.1	HA03_1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Ma36659	S21-Ma36660	S21-Ma36661	S21-Ma36662
Date Sampled			Mar 19, 2021	Mar 19, 2021	Mar 19, 2021	Mar 19, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	-
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	92	90	92	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.9	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HA01_0.2-0.3	HA02_0-0.1	HA03_0-0.1	HA03_1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Ma36659	S21-Ma36660	S21-Ma36661	S21-Ma36662
Date Sampled			Mar 19, 2021	Mar 19, 2021	Mar 19, 2021	Mar 19, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	1.1	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	1.0	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	3.1	< 0.5
2-Fluorobiphenyl (surr.)	1	%	76	82	78	84
p-Terphenyl-d14 (surr.)	1	%	91	95	86	97
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	-
Dibutylchloroendate (surr.)	1	%	100	102	108	-
Tetrachloro-m-xylene (surr.)	1	%	103	104	99	-
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibutylchloroendate (surr.)	1	%	100	102	108	-
Tetrachloro-m-xylene (surr.)	1	%	103	104	99	-

Client Sample ID			HA01_0.2-0.3	HA02_0-0.1	HA03_0-0.1	HA03_1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Ma36659	S21-Ma36660	S21-Ma36661	S21-Ma36662
Date Sampled			Mar 19, 2021	Mar 19, 2021	Mar 19, 2021	Mar 19, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	8.5	11	4.8	5.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	1.2	< 0.4
Chromium	5	mg/kg	17	34	17	11
Copper	5	mg/kg	30	24	59	19
Lead	5	mg/kg	71	26	370	110
Mercury	0.1	mg/kg	< 0.1	< 0.1	0.2	0.2
Nickel	5	mg/kg	< 5	5.3	6.0	< 5
Zinc	5	mg/kg	79	54	200	110
% Moisture	1	%	16	16	19	23

Client Sample ID			HA04_0.2-0.3	HA05_0-0.1	HA06_0.5-0.6	HA06_0.7-0.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Ma36663	S21-Ma36664	S21-Ma36665	S21-Ma36666
Date Sampled			Mar 19, 2021	Mar 19, 2021	Mar 19, 2021	Mar 19, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	-
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	72	74	95	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HA04_0.2-0.3	HA05_0-0.1	HA06_0.5-0.6	HA06_0.7-0.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Ma36663	S21-Ma36664	S21-Ma36665	S21-Ma36666
Date Sampled			Mar 19, 2021	Mar 19, 2021	Mar 19, 2021	Mar 19, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	76	90	82	88
p-Terphenyl-d14 (surr.)	1	%	88	97	87	95
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
α-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
β-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
δ-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
γ-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	-
Dibutylchloroendate (surr.)	1	%	105	105	90	-
Tetrachloro-m-xylene (surr.)	1	%	97	106	96	-
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-

Client Sample ID			HA04_0.2-0.3	HA05_0-0.1	HA06_0.5-0.6	HA06_0.7-0.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Ma36663	S21-Ma36664	S21-Ma36665	S21-Ma36666
Date Sampled			Mar 19, 2021	Mar 19, 2021	Mar 19, 2021	Mar 19, 2021
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibutylchloroendate (surr.)	1	%	105	105	90	-
Tetrachloro-m-xylene (surr.)	1	%	97	106	96	-
Heavy Metals						
Arsenic	2	mg/kg	11	6.4	9.9	9.7
Cadmium	0.4	mg/kg	0.6	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	22	16	20	19
Copper	5	mg/kg	56	9.6	7.3	5.4
Lead	5	mg/kg	170	100	21	24
Mercury	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	220	81	7.0	5.4
% Moisture	1	%	19	20	19	18

Client Sample ID			HA07_0-0.1	HA07_0.2-0.3	HA08_0-0.1	QC01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Ma36667	S21-Ma36668	S21-Ma36669	S21-Ma36670
Date Sampled			Mar 19, 2021	Mar 19, 2021	Mar 19, 2021	Mar 19, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	74	-	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	-	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	74	-	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	86	-	91	84
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	-	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	100	-	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	-	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	100	-	< 100	< 100

Client Sample ID			HA07_0-0.1	HA07_0.2-0.3	HA08_0-0.1	QC01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Ma36667	S21-Ma36668	S21-Ma36669	S21-Ma36670
Date Sampled			Mar 19, 2021	Mar 19, 2021	Mar 19, 2021	Mar 19, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	1.1	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.4	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.7	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)anthracene	0.5	mg/kg	1.0	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	0.9	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	0.8	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	0.8	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	1.2	< 0.5	< 0.5	0.6
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	1.3	< 0.5	< 0.5	0.5
Total PAH*	0.5	mg/kg	6.6	< 0.5	< 0.5	1.1
2-Fluorobiphenyl (surr.)	1	%	86	85	88	90
p-Terphenyl-d14 (surr.)	1	%	85	91	90	95
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
Toxaphene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	-	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	-	< 0.2	< 0.2
Dibutylchloroendate (surr.)	1	%	119	-	97	110
Tetrachloro-m-xylene (surr.)	1	%	97	-	97	101

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	HA07_0-0.1 Soil S21-Ma36667 Mar 19, 2021	HA07_0.2-0.3 Soil S21-Ma36668 Mar 19, 2021	HA08_0-0.1 Soil S21-Ma36669 Mar 19, 2021	QC01 Soil S21-Ma36670 Mar 19, 2021
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1221	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Aroclor-1232	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibutylchloroendate (surr.)	1	%	119	-	97	110
Tetrachloro-m-xylene (surr.)	1	%	97	-	97	101
Heavy Metals						
Arsenic	2	mg/kg	5.5	12	8.6	7.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	14	29	21	22
Copper	5	mg/kg	25	17	< 5	35
Lead	5	mg/kg	160	68	26	200
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	6.2
Zinc	5	mg/kg	200	51	6.2	140
% Moisture	1	%	21	16	19	25

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
JBS&G Suite 2			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Mar 19, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Mar 19, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Mar 19, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Mar 19, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Mar 19, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Sydney	Mar 19, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Sydney	Mar 19, 2021	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Sydney	Mar 19, 2021	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Mar 19, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			

Australia

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

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

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

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

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

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000
Project Name: ST LEONARDS
Project ID: 60615

Order No.:
Report #: 781709
Phone: 02 8245 0300
Fax:

Received: Mar 19, 2021 4:36 PM
Due: Mar 22, 2021
Priority: 1 Day
Contact Name: Joshua Stainlay

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	JBS&G Suite 2	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
Mayfield Laboratory													
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	HA01 0.2-0.3	Mar 19, 2021		Soil	S21-Ma36659	X					X	X	
2	HA02 0-0.1	Mar 19, 2021		Soil	S21-Ma36660	X					X	X	
3	HA03 0-0.1	Mar 19, 2021		Soil	S21-Ma36661	X					X	X	
4	HA03 1.0-1.1	Mar 19, 2021		Soil	S21-Ma36662			X	X		X		
5	HA04 0.2-0.3	Mar 19, 2021		Soil	S21-Ma36663	X					X	X	
6	HA05 0-0.1	Mar 19, 2021		Soil	S21-Ma36664	X					X	X	
7	HA06 0.5-0.6	Mar 19, 2021		Soil	S21-Ma36665	X					X	X	
8	HA06 0.7-0.8	Mar 19, 2021		Soil	S21-Ma36666			X	X		X		
9	HA07 0-0.1	Mar 19, 2021		Soil	S21-Ma36667	X					X	X	

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Dandenong South VIC 3175
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Lane Cove West NSW 2066
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2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
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Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

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

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

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

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Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
Mayfield Laboratory													
External Laboratory													
10	HA07_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36668			X	X		X		
11	HA08_0-0.1	Mar 19, 2021		Soil	S21-Ma36669	X					X	X	
12	QC01	Mar 19, 2021		Soil	S21-Ma36670	X					X	X	
13	TS	Mar 19, 2021		Water	S21-Ma36671								X
14	TB	Mar 19, 2021		Water	S21-Ma36672					X			
15	RINSE	Mar 19, 2021		Water	S21-Ma36673			X	X	X			
16	HA01_0-0.1	Mar 19, 2021		Soil	S21-Ma36674		X						
17	HA02_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36675		X						
18	HA03_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36676		X						
19	HA03_0.5-0.6	Mar 19, 2021		Soil	S21-Ma36677		X						
20	HA04_0-0.1	Mar 19, 2021		Soil	S21-Ma36678		X						

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Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	JBS&G Suite 2	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
Mayfield Laboratory													
External Laboratory													
21	HA06_0-0.1	Mar 19, 2021		Soil	S21-Ma36679		X						
22	HA06_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36680		X						
Test Counts						9	7	4	4	2	12	9	1

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

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

Units

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

Terms

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

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

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

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB*	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	84			70-130	Pass	
TRH C10-C14	%	80			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	92			70-130	Pass	
Toluene	%	92			70-130	Pass	
Ethylbenzene	%	87			70-130	Pass	
m&p-Xylenes	%	95			70-130	Pass	
o-Xylene	%	91			70-130	Pass	
Xylenes - Total*	%	94			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	106			70-130	Pass	
TRH C6-C10	%	86			70-130	Pass	
TRH >C10-C16	%	79			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	84			70-130	Pass	
Acenaphthylene	%	84			70-130	Pass	
Anthracene	%	90			70-130	Pass	
Benz(a)anthracene	%	74			70-130	Pass	
Benzo(a)pyrene	%	72			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene			%	71			70-130	Pass	
Benzo(g,h,i)perylene			%	72			70-130	Pass	
Benzo(k)fluoranthene			%	75			70-130	Pass	
Chrysene			%	76			70-130	Pass	
Dibenz(a,h)anthracene			%	93			70-130	Pass	
Fluoranthene			%	84			70-130	Pass	
Fluorene			%	88			70-130	Pass	
Indeno(1,2,3-cd)pyrene			%	71			70-130	Pass	
Naphthalene			%	85			70-130	Pass	
Phenanthrene			%	83			70-130	Pass	
Pyrene			%	84			70-130	Pass	
LCS - % Recovery									
Organochlorine Pesticides									
Chlordanes - Total			%	90			70-130	Pass	
4,4'-DDD			%	82			70-130	Pass	
4,4'-DDE			%	95			70-130	Pass	
4,4'-DDT			%	77			70-130	Pass	
a-BHC			%	85			70-130	Pass	
Aldrin			%	92			70-130	Pass	
b-BHC			%	86			70-130	Pass	
d-BHC			%	87			70-130	Pass	
Dieldrin			%	95			70-130	Pass	
Endosulfan I			%	89			70-130	Pass	
Endosulfan II			%	84			70-130	Pass	
Endosulfan sulphate			%	87			70-130	Pass	
Endrin			%	84			70-130	Pass	
Endrin aldehyde			%	80			70-130	Pass	
Endrin ketone			%	83			70-130	Pass	
g-BHC (Lindane)			%	87			70-130	Pass	
Heptachlor			%	84			70-130	Pass	
Heptachlor epoxide			%	89			70-130	Pass	
Hexachlorobenzene			%	90			70-130	Pass	
Methoxychlor			%	79			70-130	Pass	
LCS - % Recovery									
Polychlorinated Biphenyls									
Aroclor-1016			%	74			70-130	Pass	
Aroclor-1260			%	103			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	105			80-120	Pass	
Cadmium			%	110			80-120	Pass	
Chromium			%	110			80-120	Pass	
Copper			%	112			80-120	Pass	
Lead			%	108			80-120	Pass	
Mercury			%	108			80-120	Pass	
Nickel			%	112			80-120	Pass	
Zinc			%	115			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S21-Ma36468	NCP	%	97			75-125	Pass	
Cadmium	S21-Ma36468	NCP	%	103			75-125	Pass	
Chromium	S21-Ma36468	NCP	%	99			75-125	Pass	
Copper	S21-Ma36468	NCP	%	93			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Lead	S21-Ma36468	NCP	%	96		75-125	Pass	
Mercury	S21-Ma36468	NCP	%	106		75-125	Pass	
Nickel	S21-Ma36468	NCP	%	104		75-125	Pass	
Zinc	S21-Ma30641	NCP	%	93		75-125	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	S21-Ma36660	CP	%	93		70-130	Pass	
Acenaphthylene	S21-Ma36660	CP	%	94		70-130	Pass	
Anthracene	S21-Ma36660	CP	%	97		70-130	Pass	
Benz(a)anthracene	S21-Ma36660	CP	%	90		70-130	Pass	
Benzo(a)pyrene	S21-Ma36660	CP	%	96		70-130	Pass	
Benzo(b&j)fluoranthene	S21-Ma36660	CP	%	91		70-130	Pass	
Benzo(g,h,i)perylene	S21-Ma36660	CP	%	93		70-130	Pass	
Benzo(k)fluoranthene	S21-Ma36660	CP	%	99		70-130	Pass	
Chrysene	S21-Ma36660	CP	%	94		70-130	Pass	
Dibenz(a,h)anthracene	S21-Ma36660	CP	%	90		70-130	Pass	
Fluoranthene	S21-Ma36660	CP	%	94		70-130	Pass	
Fluorene	S21-Ma36660	CP	%	98		70-130	Pass	
Indeno(1,2,3-cd)pyrene	S21-Ma36660	CP	%	94		70-130	Pass	
Naphthalene	S21-Ma36660	CP	%	96		70-130	Pass	
Phenanthrene	S21-Ma36660	CP	%	92		70-130	Pass	
Pyrene	S21-Ma36660	CP	%	93		70-130	Pass	
Spike - % Recovery								
Organochlorine Pesticides				Result 1				
Chlordanes - Total	S21-Ma36660	CP	%	95		70-130	Pass	
4,4'-DDD	S21-Ma36660	CP	%	90		70-130	Pass	
4,4'-DDE	S21-Ma36660	CP	%	103		70-130	Pass	
4,4'-DDT	S21-Ma36660	CP	%	79		70-130	Pass	
a-BHC	S21-Ma36660	CP	%	93		70-130	Pass	
Aldrin	S21-Ma36660	CP	%	98		70-130	Pass	
b-BHC	S21-Ma36660	CP	%	93		70-130	Pass	
d-BHC	S21-Ma36660	CP	%	94		70-130	Pass	
Dieldrin	S21-Ma36660	CP	%	104		70-130	Pass	
Endosulfan I	S21-Ma36660	CP	%	96		70-130	Pass	
Endosulfan II	S21-Ma36660	CP	%	94		70-130	Pass	
Endosulfan sulphate	S21-Ma36660	CP	%	92		70-130	Pass	
Endrin	S21-Ma36660	CP	%	89		70-130	Pass	
Endrin ketone	S21-Ma36660	CP	%	90		70-130	Pass	
g-BHC (Lindane)	S21-Ma36660	CP	%	98		70-130	Pass	
Heptachlor	S21-Ma36660	CP	%	88		70-130	Pass	
Heptachlor epoxide	S21-Ma36660	CP	%	94		70-130	Pass	
Hexachlorobenzene	S21-Ma36660	CP	%	96		70-130	Pass	
Methoxychlor	S21-Ma36660	CP	%	81		70-130	Pass	
Spike - % Recovery								
Polychlorinated Biphenyls				Result 1				
Aroclor-1016	S21-Ma36660	CP	%	73		70-130	Pass	
Aroclor-1260	S21-Ma36660	CP	%	100		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C6-C9	S21-Ma36669	CP	%	76		70-130	Pass	
TRH C10-C14	S21-Ma36669	CP	%	80		70-130	Pass	
Spike - % Recovery								
BTEX				Result 1				
Benzene	S21-Ma36669	CP	%	82		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	S21-Ma36669	CP	%	86			70-130	Pass	
Ethylbenzene	S21-Ma36669	CP	%	84			70-130	Pass	
m&p-Xylenes	S21-Ma36669	CP	%	86			70-130	Pass	
o-Xylene	S21-Ma36669	CP	%	86			70-130	Pass	
Xylenes - Total*	S21-Ma36669	CP	%	86			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S21-Ma36669	CP	%	89			70-130	Pass	
TRH C6-C10	S21-Ma36669	CP	%	75			70-130	Pass	
TRH >C10-C16	S21-Ma36669	CP	%	80			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S21-Ma36659	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S21-Ma36659	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S21-Ma36659	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S21-Ma36659	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S21-Ma36659	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S21-Ma36659	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Ma36659	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4,4'-DDD	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDE	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDT	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Endrin aldehyde	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S21-Ma36659	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S21-Ma36659	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1221	S21-Ma36659	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1242	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1248	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1254	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1260	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Total PCB*	S21-Ma36659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S21-Ma36664	CP	mg/kg	6.4	7.2	11	30%	Pass
Cadmium	S21-Ma36664	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S21-Ma36664	CP	mg/kg	16	17	5.0	30%	Pass
Copper	S21-Ma36664	CP	mg/kg	9.6	11	12	30%	Pass
Mercury	S21-Ma36664	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S21-Ma36664	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	S21-Ma36664	CP	mg/kg	81	57	36	30%	Fail
								Q15
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S21-Ma36665	CP	%	19	18	6.0	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S21-Ma36667	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S21-Ma36667	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S21-Ma36667	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S21-Ma36667	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S21-Ma36667	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S21-Ma36667	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total*	S21-Ma36667	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S21-Ma36667	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S21-Ma36667	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S21-Ma36670	CP	mg/kg	7.4	4.4	51	30%	Fail
Cadmium	S21-Ma36670	CP	mg/kg	< 0.4	0.4	25	30%	Pass
Chromium	S21-Ma36670	CP	mg/kg	22	17	24	30%	Pass
Copper	S21-Ma36670	CP	mg/kg	35	41	15	30%	Pass
Lead	S21-Ma36670	CP	mg/kg	200	250	25	30%	Pass
Mercury	S21-Ma36670	CP	mg/kg	< 0.1	0.1	47	30%	Fail
Nickel	S21-Ma36670	CP	mg/kg	6.2	< 5	21	30%	Pass
Zinc	S21-Ma36670	CP	mg/kg	140	150	8.0	30%	Pass
								Q15

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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



NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Joshua Stainlay**

Report **781709-W**
 Project name **ST LEONARDS**
 Project ID **60615**
 Received Date **Mar 19, 2021**

Client Sample ID			TS Water	TB Water	RINSE Water
Sample Matrix					
Eurofins Sample No.			S21-Ma36671	S21-Ma36672	S21-Ma36673
Date Sampled			Mar 19, 2021	Mar 19, 2021	Mar 19, 2021
Test/Reference	LOR	Unit			
BTEX					
Benzene	1	%	100	-	-
Ethylbenzene	1	%	100	-	-
m&p-Xylenes	1	%	110	-	-
o-Xylene	1	%	100	-	-
Toluene	1	%	100	-	-
Xylenes - Total	1	%	110	-	-
4-Bromofluorobenzene (surr.)	1	%	84	-	-
BTEX					
Benzene	0.001	mg/L	-	< 0.001	< 0.001
Toluene	0.001	mg/L	-	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	-	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	-	< 0.002	< 0.002
o-Xylene	0.001	mg/L	-	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	-	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	-	85	84
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	-	-	< 0.001
Acenaphthylene	0.001	mg/L	-	-	< 0.001
Anthracene	0.001	mg/L	-	-	< 0.001
Benz(a)anthracene	0.001	mg/L	-	-	< 0.001
Benzo(a)pyrene	0.001	mg/L	-	-	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	-	-	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	-	-	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	-	-	< 0.001
Chrysene	0.001	mg/L	-	-	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	-	-	< 0.001
Fluoranthene	0.001	mg/L	-	-	< 0.001
Fluorene	0.001	mg/L	-	-	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	-	-	< 0.001
Naphthalene	0.001	mg/L	-	-	< 0.001
Phenanthrene	0.001	mg/L	-	-	< 0.001
Pyrene	0.001	mg/L	-	-	< 0.001
Total PAH*	0.001	mg/L	-	-	< 0.001
2-Fluorobiphenyl (surr.)	1	%	-	-	84
p-Terphenyl-d14 (surr.)	1	%	-	-	63

Client Sample ID			TS	TB	RINSE
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S21-Ma36671	S21-Ma36672	S21-Ma36673
Date Sampled			Mar 19, 2021	Mar 19, 2021	Mar 19, 2021
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	0.001	mg/L	-	-	< 0.001
Cadmium	0.0002	mg/L	-	-	< 0.0002
Chromium	0.001	mg/L	-	-	< 0.001
Copper	0.001	mg/L	-	-	0.001
Lead	0.001	mg/L	-	-	< 0.001
Mercury	0.0001	mg/L	-	-	< 0.0001
Nickel	0.001	mg/L	-	-	< 0.001
Zinc	0.005	mg/L	-	-	< 0.005

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
JBS&G Suite 2			
BTEX	Sydney	Mar 19, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Mar 19, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Mar 19, 2021	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

Australia

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

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

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

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

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

Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000
Project Name: ST LEONARDS
Project ID: 60615

Order No.:
Report #: 781709
Phone: 02 8245 0300
Fax:

Received: Mar 19, 2021 4:36 PM
Due: Mar 22, 2021
Priority: 1 Day
Contact Name: Joshua Stainlay

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	JBS&G Suite 2	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
Mayfield Laboratory													
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	HA01 0.2-0.3	Mar 19, 2021		Soil	S21-Ma36659	X					X	X	
2	HA02 0-0.1	Mar 19, 2021		Soil	S21-Ma36660	X					X	X	
3	HA03 0-0.1	Mar 19, 2021		Soil	S21-Ma36661	X					X	X	
4	HA03 1.0-1.1	Mar 19, 2021		Soil	S21-Ma36662			X	X		X		
5	HA04 0.2-0.3	Mar 19, 2021		Soil	S21-Ma36663	X					X	X	
6	HA05 0-0.1	Mar 19, 2021		Soil	S21-Ma36664	X					X	X	
7	HA06 0.5-0.6	Mar 19, 2021		Soil	S21-Ma36665	X					X	X	
8	HA06 0.7-0.8	Mar 19, 2021		Soil	S21-Ma36666			X	X		X		
9	HA07 0-0.1	Mar 19, 2021		Soil	S21-Ma36667	X					X	X	

Australia

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

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rourke Road
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Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
Mayfield Laboratory													
External Laboratory													
10	HA07_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36668			X	X		X		
11	HA08_0-0.1	Mar 19, 2021		Soil	S21-Ma36669	X					X	X	
12	QC01	Mar 19, 2021		Soil	S21-Ma36670	X					X	X	
13	TS	Mar 19, 2021		Water	S21-Ma36671								X
14	TB	Mar 19, 2021		Water	S21-Ma36672					X			
15	RINSE	Mar 19, 2021		Water	S21-Ma36673			X	X	X			
16	HA01_0-0.1	Mar 19, 2021		Soil	S21-Ma36674		X						
17	HA02_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36675		X						
18	HA03_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36676		X						
19	HA03_0.5-0.6	Mar 19, 2021		Soil	S21-Ma36677		X						
20	HA04_0-0.1	Mar 19, 2021		Soil	S21-Ma36678		X						

Australia

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Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
Mayfield Laboratory													
External Laboratory													
21	HA06_0-0.1	Mar 19, 2021		Soil	S21-Ma36679		X						
22	HA06_0.2-0.3	Mar 19, 2021		Soil	S21-Ma36680		X						
Test Counts						9	7	4	4	2	12	9	1

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

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

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

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

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	94			70-130	Pass	
Toluene	%	94			70-130	Pass	
Ethylbenzene	%	95			70-130	Pass	
m&p-Xylenes	%	95			70-130	Pass	
o-Xylene	%	97			70-130	Pass	
Xylenes - Total*	%	96			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	106			70-130	Pass	
Acenaphthylene	%	110			70-130	Pass	
Anthracene	%	127			70-130	Pass	
Benz(a)anthracene	%	130			70-130	Pass	
Benzo(a)pyrene	%	118			70-130	Pass	
Benzo(g,h,i)perylene	%	123			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(k)fluoranthene			%	127			70-130	Pass	
Chrysene			%	76			70-130	Pass	
Dibenz(a,h)anthracene			%	125			70-130	Pass	
Fluoranthene			%	113			70-130	Pass	
Fluorene			%	123			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	120			70-130	Pass	
Naphthalene			%	88			70-130	Pass	
Phenanthrene			%	115			70-130	Pass	
Pyrene			%	115			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	103			80-120	Pass	
Cadmium			%	102			80-120	Pass	
Chromium			%	105			80-120	Pass	
Copper			%	104			80-120	Pass	
Lead			%	114			80-120	Pass	
Mercury			%	115			80-120	Pass	
Nickel			%	105			80-120	Pass	
Zinc			%	101			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S21-Ma28448	NCP	%	103			75-125	Pass	
Cadmium	S21-Ma28448	NCP	%	101			75-125	Pass	
Chromium	S21-Ma28448	NCP	%	100			75-125	Pass	
Copper	S21-Ma28448	NCP	%	99			75-125	Pass	
Lead	S21-Ma28448	NCP	%	107			75-125	Pass	
Mercury	S21-Ma28448	NCP	%	114			75-125	Pass	
Nickel	S21-Ma28448	NCP	%	100			75-125	Pass	
Zinc	S21-Ma28448	NCP	%	98			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S21-Ma25635	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S21-Ma36673	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium	S21-Ma36673	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	S21-Ma36673	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper	S21-Ma36673	CP	mg/L	0.001	0.001	4.0	30%	Pass
Lead	S21-Ma36673	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury	S21-Ma36673	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	S21-Ma36673	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc	S21-Ma36673	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (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](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Grace Tuckwell

From: #AU04_Enviro_Sample_NSW
To: Ursula Long
Subject: RE: Eurofins Test Results - Report 781709 : Site ST LEONARDS (60615)

Kind regards,

From: Chris Bielby <CBielby@jbsg.com.au>
Sent: Tuesday, 23 March 2021 9:18 AM
To: Ursula Long <UrsulaLong@eurofins.com>
Subject: RE: Eurofins Test Results - Report 781709 : Site ST LEONARDS (60615)

EXTERNAL EMAIL*

Hi Ursula,

Could you please schedule the following additional analysis for delivery tomorrow:

TCLP Lead – HA03 0.0-0.1, HA03 10-1.1, HA04 0.2-0.3, HA07 0.0-0.1, QC01
TCLP BaP – HA07 0.0-0.1

Thanks

From: UrsulaLong@eurofins.com <UrsulaLong@eurofins.com>
Sent: Monday, 22 March 2021 6:32 PM
To: Joshua Stainlay <jstainlay@jbsg.com.au>
Cc: Chris Bielby <CBielby@jbsg.com.au>
Subject: Eurofins Test Results - Report 781709 : Site ST LEONARDS (60615)

[EXTERNAL EMAIL] Stop and think before opening attachments, clicking or responding.

Please find attached results for your project in the subject header.

Regards

Ursula Long

Eurofins

Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA
Phone: +61 428 845 495
Email: UrsulaLong@eurofins.com
Website: environment.eurofins.com.au

Click [here](#) to report this email as spam.

ScannedByWebsenseForEurofins

* WARNING - EXTERNAL: This email originated from outside of Eurofins. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

Grace Tuckwell

From: Chris Bielby <CBielby@jbsg.com.au>
Sent: Tuesday, 23 March 2021 1:45 PM
To: Ursula Long
Subject: RE: Eurofins Test Results - Report 781709 : Site ST LEONARDS (60615)

EXTERNAL EMAIL*

Hi Ursula, could I also get pH, %clay and CEC for sample HA03_0-0.1 for delivery tomorrow please?

Thanks

From: Ursula Long <UrsulaLong@eurofins.com>
Sent: Tuesday, 23 March 2021 10:09 AM
To: Chris Bielby <CBielby@jbsg.com.au>
Subject: RE: Eurofins Test Results - Report 781709 : Site ST LEONARDS (60615)

[EXTERNAL EMAIL] Stop and think before opening attachments, clicking or responding.

Will do Chris.

Kind regards,

Ursula Long
Analytical Services Manager

Eurofins | Environment Testing
Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA
Mobile: +61 428 845 495
Email : UrsulaLong@eurofins.com
Website: www.eurofins.com.au/environmental-testing

For sample receipt enquiries (eg. SRAs, changes to analysis) please contact EnvirosampleNSW@eurofins.com or 02 9900 8421 (7am – 12am).

For despatch enquiries (eg. courier bookings, bottle orders) please contact AU04_Despach_SYD@eurofins.com or 0488 400 929 (8am – 4pm).

From: Chris Bielby <CBielby@jbsg.com.au>
Sent: Tuesday, 23 March 2021 9:18 AM
To: Ursula Long <UrsulaLong@eurofins.com>
Subject: RE: Eurofins Test Results - Report 781709 : Site ST LEONARDS (60615)

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TCLP Lead – HA03 0.0-0.1, HA03 10-1.1, HA04 0.2-0.3, HA07 0.0-0.1, QC01
TCLP BaP – HA07 0.0-0.1

Thanks

From: UrsulaLong@eurofins.com <UrsulaLong@eurofins.com>
Sent: Monday, 22 March 2021 6:32 PM
To: Joshua Stainlay <jstainlay@jbsg.com.au>
Cc: Chris Bielby <CBielby@jbsg.com.au>
Subject: Eurofins Test Results - Report 781709 : Site ST LEONARDS (60615)

*****[EXTERNAL EMAIL] Stop and think before opening attachments, clicking or responding.*****

Please find attached results for your project in the subject header.

Regards

Ursula Long

Eurofins

Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA

Phone: +61 428 845 495

Email: UrsulaLong@eurofins.com

Website: environment.eurofins.com.au

[EnviroNote 1108 - Emissions from Stationary Sources](#)

[EnviroNote 1103 - NATA Accreditation for Dioxins](#)

Click [here](#) to report this email as spam.

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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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NATA # 1261 Site # 20794

Perth

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NATA # 1261
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Newcastle

4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand
Auckland

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

Christchurch

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

Sample Receipt Advice

Company name: JBS & G Australia (NSW) P/L
Contact name: Joshua Stainlay
Project name: ADDITIONAL - ST LEONARDS
Project ID: 60615
Turnaround time: 1 Day
Date/Time received: Mar 23, 2021 10:08 AM
Eurofins reference: 782203

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 0 degrees Celsius.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Joshua Stainlay - jstainlay@jbsg.com.au.

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

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

Project Name: ADDITIONAL - ST LEONARDS
Project ID: 60615

Order No.:
Report #: 782203
Phone: 02 8245 0300
Fax:

Received: Mar 23, 2021 10:08 AM
Due: Mar 24, 2021
Priority: 1 Day
Contact Name: Joshua Stainlay

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						% Clay	Benzo(a)pyrene	Lead	pH (1:5 Aqueous extract at 25°C as rec.)	USA Leaching Procedure	Moisture Set	Cation Exchange Capacity
Melbourne Laboratory - NATA Site # 1254 & 14271											X	X
Sydney Laboratory - NATA Site # 18217							X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794						X						
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory												
External Laboratory												
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID							
1	HA03 0.0-0.1	Mar 19, 2021		US Leachate	S21-Ma41778			X		X		
2	HA03 10-1.1	Mar 19, 2021		US Leachate	S21-Ma41779			X		X		
3	HA04 0.2-0.3	Mar 19, 2021		US Leachate	S21-Ma41780			X		X		
4	HA07 0.0-0.1	Mar 19, 2021		US Leachate	S21-Ma41781		X	X		X		
5	QC01	Mar 19, 2021		US Leachate	S21-Ma41782			X		X		
6	HA03 0.0-0.1	Mar 19, 2021		Soil	S21-Ma41915	X			X		X	X
Test Counts						1	1	5	1	5	1	1

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



NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: Joshua Stainlay

Report 782203-L
Project name ADDITIONAL - ST LEONARDS
Project ID 60615
Received Date Mar 23, 2021

Client Sample ID			HA03 0.0-0.1	HA03 10-1.1	HA04 0.2-0.3	HA07 0.0-0.1
Sample Matrix			US Leachate	US Leachate	US Leachate	US Leachate
Eurofins Sample No.			S21-Ma41778	S21-Ma41779	S21-Ma41780	S21-Ma41781
Date Sampled			Mar 19, 2021	Mar 19, 2021	Mar 19, 2021	Mar 19, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	0.01	mg/L	0.05	0.03	< 0.01	0.02
USA Leaching Procedure						
Leachate Fluid ^{C01}		comment	1.0	1.0	1.0	1.0
pH (initial)	0.1	pH Units	6.1	6.1	6.0	6.0
pH (off)	0.1	pH Units	5.1	5.1	5.1	5.1
pH (USA HCl addition)	0.1	pH Units	1.6	1.6	1.5	1.5
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene	0.001	mg/L	-	-	-	< 0.001

Client Sample ID			QC01
Sample Matrix			US Leachate
Eurofins Sample No.			S21-Ma41782
Date Sampled			Mar 19, 2021
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	0.01	mg/L	0.02
USA Leaching Procedure			
Leachate Fluid ^{C01}		comment	1.0
pH (initial)	0.1	pH Units	6.1
pH (off)	0.1	pH Units	5.1
pH (USA HCl addition)	0.1	pH Units	1.6

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
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Mar 24, 2021	180 Days
USA Leaching Procedure - Method: LTM-GEN-7010 Leaching Procedure for Soils & Solid Wastes	Sydney	Mar 23, 2021	14 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Mar 23, 2021	7 Days

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

Project Name: ADDITIONAL - ST LEONARDS
Project ID: 60615

Order No.:
Report #: 782203
Phone: 02 8245 0300
Fax:

Received: Mar 23, 2021 10:08 AM
Due: Mar 24, 2021
Priority: 1 Day
Contact Name: Joshua Stainlay

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						% Clay	Benzo(a)pyrene	Lead	pH (1:5 Aqueous extract at 25°C as rec.)	USA Leaching Procedure	Moisture Set	Cation Exchange Capacity
Melbourne Laboratory - NATA Site # 1254 & 14271											X	X
Sydney Laboratory - NATA Site # 18217							X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794						X						
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory												
External Laboratory												
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID							
1	HA03 0.0-0.1	Mar 19, 2021		US Leachate	S21-Ma41778			X		X		
2	HA03 10-1.1	Mar 19, 2021		US Leachate	S21-Ma41779			X		X		
3	HA04 0.2-0.3	Mar 19, 2021		US Leachate	S21-Ma41780			X		X		
4	HA07 0.0-0.1	Mar 19, 2021		US Leachate	S21-Ma41781		X	X		X		
5	QC01	Mar 19, 2021		US Leachate	S21-Ma41782			X		X		
6	HA03 0.0-0.1	Mar 19, 2021		Soil	S21-Ma41915	X			X		X	X
Test Counts						1	1	5	1	5	1	1

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

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

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

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

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

QC Data General Comments

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

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank										
Heavy Metals										
Lead				mg/L	< 0.01			0.01	Pass	
Method Blank										
Polycyclic Aromatic Hydrocarbons										
Benzo(a)pyrene				mg/L	< 0.001			0.001	Pass	
LCS - % Recovery										
Heavy Metals										
Lead				%	89			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Heavy Metals										
Lead					Result 1					
Lead				%	92			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Duplicate										
Heavy Metals										
Lead					Result 1	Result 2	RPD			
Lead				mg/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
C01	Leachate Fluid Key: 1 - pH 5.0; 2 - pH 2.9; 3 - pH 9.2; 4 - Reagent (DI) water; 5 - Client sample, 6 - other

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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 Arrangement for the mutual recognition of the
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 inspection and proficiency testing scheme providers
 reports.

Attention: **Joshua Stainlay**

Report **782203-S**
Project name **ADDITIONAL - ST LEONARDS**
Project ID **60615**
Received Date **Mar 23, 2021**

Client Sample ID			HA03 0.0-0.1
Sample Matrix			Soil
Eurofins Sample No.			S21-Ma41915
Date Sampled			Mar 19, 2021
Test/Reference	LOR	Unit	
% Clay	1	%	6.0
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	24
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.5
% Moisture	1	%	19
Cation Exchange Capacity			
Cation Exchange Capacity	0.05	meq/100g	12

Sample History

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

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Description	Testing Site	Extracted	Holding Time
% Clay - Method: LTM-GEN-7040	Brisbane	Mar 24, 2021	14 Days
pH (1:5 Aqueous extract at 25°C as rec.) - Method: LTM-GEN-7090 pH in soil by ISE	Sydney	Mar 23, 2021	7 Days
Conductivity (1:5 aqueous extract at 25°C as rec.) - Method: LTM-INO-4030 Conductivity	Sydney	Mar 23, 2021	7 Days
Cation Exchange Capacity - Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage	Melbourne	Mar 24, 2021	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Mar 23, 2021	14 Days

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Project Name: ADDITIONAL - ST LEONARDS
Project ID: 60615

Order No.:
Report #: 782203
Phone: 02 8245 0300
Fax:

Received: Mar 23, 2021 10:08 AM
Due: Mar 24, 2021
Priority: 1 Day
Contact Name: Joshua Stainlay

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						% Clay	Benzo(a)pyrene	Lead	pH (1:5 Aqueous extract at 25°C as rec.)	USA Leaching Procedure	Moisture Set	Cation Exchange Capacity
Melbourne Laboratory - NATA Site # 1254 & 14271											X	X
Sydney Laboratory - NATA Site # 18217							X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794						X						
Perth Laboratory - NATA Site # 23736												
Mayfield Laboratory												
External Laboratory												
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID							
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2	HA03 10-1.1	Mar 19, 2021		US Leachate	S21-Ma41779			X		X		
3	HA04 0.2-0.3	Mar 19, 2021		US Leachate	S21-Ma41780			X		X		
4	HA07 0.0-0.1	Mar 19, 2021		US Leachate	S21-Ma41781		X	X		X		
5	QC01	Mar 19, 2021		US Leachate	S21-Ma41782			X		X		
6	HA03 0.0-0.1	Mar 19, 2021		Soil	S21-Ma41915	X			X		X	X
Test Counts						1	1	5	1	5	1	1

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- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
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For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

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

Units

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

Terms

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

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

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

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

QC Data General Comments

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

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Conductivity (1:5 aqueous extract at 25°C as rec.)			uS/cm	< 10			10	Pass	
LCS - % Recovery									
Conductivity (1:5 aqueous extract at 25°C as rec.)			%	89			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	S21-Ma41915	CP	uS/cm	24	30	21	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	S21-Ma41915	CP	pH Units	6.5	6.5	Pass	30%	Pass	
% Moisture	S21-Ma41805	NCP	%	14	16	12	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Ursula Long	Analytical Services Manager
Charl Du Preez	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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RE: St Leonards - Job Number: 62180

Christopher Dagger <cdagger@jbsg.com.au>

Tue 1/18/2022 10:56 AM

To: Ursula Long <UrsulaLong@eurofins.com>

Cc: Nathan Cussen <NCussen@jbsg.com.au>

EXTERNAL EMAIL *

Hi Ursula,

Could I please make the following amendments to the scheduled analysis:

Could sample HA01_0.0-0.1 additionally include TRH/BTEX and OCP/PCB

Could Sample HA09_0.5-0.6 be cancelled

Could sample QC01 additionally include TRH/BTEX and OCP/PCB

The complete required analysis should look like this:

Sample ID	Analytical Suite
HA01_0.0-0.1	Asbestos (500ml) Heavy Metals PAH TRH/BTEX OCP/PCB
HA02_0.0-0.1	Asbestos (500ml) Heavy Metals PAH
HA04_0.0-0.1	Asbestos (500ml) Heavy Metals PAH
HA05_0.0-0.1	Asbestos (500ml) Heavy Metals PAH
HA05_0.2-0.3	Asbestos (500ml) Heavy Metals PAH TRH/BTEX OCP/PCB
HA06_0.0-0.1	Asbestos (500ml) Heavy Metals PAH TRH/BTEX OCP/PCB
HA07_0.0-0.1	Asbestos (500ml) Heavy Metals PAH TRH/BTEX OCP/PCB
HA07_0.5-0.6	pH CEC %Clay
HA08_0.0-0.1	Asbestos (500ml) Heavy Metals PAH
HA09_0.0-0.1	Asbestos (500ml) Heavy Metals

Chris

Contaminated Land | Groundwater Remediation | Environmental Approvals | Auditing and Compliance | Hygiene and Hazardous Materials | Due Diligence and Liability | Stakeholder and Risk Management

From: Ursula Long <UrsulaLong@eurofins.com>
Sent: Tuesday, 18 January 2022 10:49 AM
To: Christopher Dagger <cdagger@jbsg.com.au>
Cc: Nathan Cussen <NCussen@jbsg.com.au>
Subject: RE: St Leonards - Job Number: 62180

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From: Christopher Dagger
Sent: Monday, 17 January 2022 4:26 PM
To: UrsulaLong@eurofins.com
Cc: Nathan Cussen <NCussen@jbsg.com.au>
Subject: St Leonards - Job Number: 62180

Hi Ursula,

On Friday (14th) 3x eskies were sent to eurofins with the Job number of 62180 and placed on Hold.
 Could I please schedule the following analysis on Standard TAT:

Sample ID	Analytical Suite
HA01_0.0-0.1	Asbestos (500ml) Heavy Metals PAH
HA02_0.0-0.1	Asbestos (500ml) Heavy Metals PAH
HA04_0.0-0.1	Asbestos (500ml) Heavy Metals PAH
HA05_0.0-0.1	Asbestos (500ml) Heavy Metals PAH
HA05_0.2-0.3	Asbestos (500ml) Heavy Metals PAH TRH/BTEX OCP/PCB
HA06_0.0-0.1	Asbestos (500ml) Heavy Metals PAH TRH/BTEX OCP/PCB
HA07_0.0-0.1	Asbestos (500ml) Heavy Metals PAH TRH/BTEX OCP/PCB
HA07_0.5-0.6	pH CEC %Clay
HA08_0.0-0.1	Asbestos (500ml) Heavy Metals PAH
HA09_0.0-0.1	Full
HA09_0.5-0.6	TRH/BTEX OCP/PCB
HA10_0.2-0.3	Asbestos (500ml) Heavy Metals PAH
HA11_0.0-0.1	Asbestos (500ml) Heavy Metals

	PAH TRH/BTEX OCP/PCB	
HA12_0.0-0.1	Asbestos (500ml) Heavy Metals PAH TRH/BTEX OCP/PCB	
HA13_0.4-0.5	pH CEC %Clay	
HA14_0.0-0.1	Asbestos (500ml) Heavy Metals PAH	
HA14_0.2-0.3	Asbestos (500ml) Heavy Metals PAH TRH/BTEX OCP/PCB	
QC01	Asbestos (500ml) Heavy Metals PAH	

Kind regards,
Chris



Chris Dagger | Environmental Consultant | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane | Canberra | Darwin | Wollongong
Level 1, 50 Margaret Street Sydney NSW 2000

T: 02 8245 0300 | M: 0447 490 001 | E: cdagger@jbsg.com.au | W: www.jbsg.com.au

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*****[EXTERNAL EMAIL]** Stop and think before opening attachments, clicking or responding.***

No problem Chris.

Kind regards,

Ursula Long
Analytical Services Manager

Eurofins | Environment Testing

Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA

Mobile: +61 428 845 495

Email : UrsulaLong@eurofins.com

Website: www.eurofins.com.au/environmental-testing

For sample receipt enquiries (eg. SRAs, changes to analysis) please contact EnvirosampleNSW@eurofins.com or 02 9900 8421 (7am – 12am).

For despatch enquiries (eg. courier bookings, bottle orders) please contact AU04_Despatch_SYD@eurofins.com or 0488 400 929 (8am – 4pm).

From: Christopher Dagger <cdagger@jbsg.com.au>

Sent: Monday, 17 January 2022 4:31 PM

To: Ursula Long <UrsulaLong@eurofins.com>

Cc: Nathan Cussen <NCussen@jbsg.com.au>

Subject: RE: St Leonards - Job Number: 62180

EXTERNAL EMAIL *

Apologies Ursula,

For sample HA09_0.0-0.1 can you please analyse this for:

Asbestos (500ml)

Heavy Metals

PAH

TRH/BTEX

OCP/PCB

Also on a standard TAT

Regards,
Chris



Chris Dagger | Environmental Consultant | JBS&G

Sydney | Melbourne | Adelaide | Perth | Brisbane | Canberra | Darwin | Wollongong

Level 1, 50 Margaret Street Sydney NSW 2000

T: 02 8245 0300 | M: 0447 490 001 | E: cdagger@jbsg.com.au | W: www.jbsg.com.au

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CHAIN OF CUSTODY

23703



PROJECT NO.: 62180					LABORATORY BATCH NO.:																																																																																																																												
PROJECT NAME: St Leonards					SAMPLERS: CO																																																																																																																												
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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

IMSO Forms013 - Chain of Custody - Generic

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23704



PROJECT NO.: 62180					LABORATORY BATCH NO.:																			
PROJECT NAME: St Leonards					SAMPLERS: CD																			
DATE NEEDED BY: hold					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) NCUSSEN@jbsg.com.au; (3) COAGGER@jbsg.com.au																								
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:																								
SAMPLE ID					MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH															
HA07-0.0-0.1					soil	13/14-1-22		B+J + VC	x															
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HA09-0.0-0.1								B+J																
0.2-0.3								B+J																
0.5-0.6								B+J																
0.65-0.75								B+J																
HA10-0.0-0.1								B+J																
0.2-0.3								B+J																
0.5-0.6								B+J																
0.8-0.9								B+J																
HA11-0.0-0.1								B+J																
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CHAIN OF CUSTODY

23706



PROJECT NO.: 62180					LABORATORY BATCH NO.:																																																																																																																																																						
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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 Australia Pty Ltd

ABN: 50 005 085 521

Melbourne

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

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
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle

4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth

46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited

NZBN: 9429046024954

Auckland

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

Christchurch

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

Sample Receipt Advice

Company name: JBS & G Australia (NSW) P/L
Contact name: Christopher Dagger
Project name: ST LEONARDS
Project ID: 62180
Turnaround time: 5 Day
Date/Time received: Jan 18, 2022 10:56 AM
Eurofins reference: 857006

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 12.5 degrees Celsius.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

No asbestos bag provided for samples HA05_0.2-0.3 or HA14_0.2-0.3 asbestos analysis cancelled.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Christopher Dagger - cdagger@jbsg.com.au.



Environment Testing

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ABN: 50 005 085 521

Melbourne
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Dandenong South VIC 3175
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Sydney
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Phone: 02 8245 0300
Fax:

Received: Jan 18, 2022 10:56 AM
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Priority: 5 Day
Contact Name: Christopher Dagger

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1
Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	HA01 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22062	X			X	X	X	X		X
2	HA02 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22063	X			X	X		X		
3	HA04 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22064	X			X	X		X		
4	HA05 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22065	X			X	X		X		
5	HA05 0.2-0.3	Jan 13, 2022		Soil	S22-Ja22066				X	X	X	X		X
6	HA06 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22067	X			X	X	X	X		X
7	HA07 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22068	X			X	X	X	X		X
8	HA07 0.5-0.6	Jan 13, 2022		Soil	S22-Ja22069			X				X	X	
9	HA08 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22070	X			X	X		X		



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Unit F3, Building F
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Welshpool WA 6106
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Penrose, Auckland 1061
Phone : +64 9 526 45 51
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Christchurch
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web: www.eurofins.com.au
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Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
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Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
10	HA09_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22071	X			X	X	X	X		X
11	HA09_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22072						X	X		X
12	HA10_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22073	X			X	X		X		
13	HA11_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22074	X			X	X	X	X		X
14	HA12_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22075	X			X	X	X	X		X
15	HA13_0.4-0.5	Jan 13, 2022		Soil	S22-Ja22076			X				X	X	
16	HA14_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22077	X			X	X		X		
17	HA14_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22078				X	X	X	X		X
18	QC01	Jan 13, 2022		Soil	S22-Ja22079	X			X	X	X	X		X
19	HA01_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22250		X							
20	HA01_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22251		X							



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Sydney
Unit F3, Building F
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Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
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Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

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NZBN: 9429046024954

Auckland
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Penrose, Auckland 1061
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Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
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External Laboratory														
21	HA02_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22252		X							
22	HA02_0.7-0.8	Jan 13, 2022		Soil	S22-Ja22253		X							
23	HA03_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22254		X							
24	HA03_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22255		X							
25	HA03_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22256		X							
26	HA04_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22257		X							
27	HA05_0.7-0.8	Jan 13, 2022		Soil	S22-Ja22259		X							
28	HA06_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22260		X							
29	HA06_0.4-0.5	Jan 13, 2022		Soil	S22-Ja22261		X							
30	HA06_0.6-0.7	Jan 13, 2022		Soil	S22-Ja22262		X							
31	HA07_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22263		X							



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

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

Sydney
Unit F3, Building F
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Lane Cove West NSW 2066
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46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

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NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
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IANZ # 1327

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Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
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Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
32	HA08_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22264		X							
33	HA08_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22265		X							
34	HA09_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22266		X							
35	HA10_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22267		X							
36	HA10_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22268		X							
37	HA10_0.8-0.9	Jan 13, 2022		Soil	S22-Ja22269		X							
38	HA11_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22270		X							
39	HA11_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22271		X							
40	HA11_0.7-0.8	Jan 13, 2022		Soil	S22-Ja22272		X							
41	HA12_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22273		X							
42	HA12_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22274		X							



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Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1
Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
43	HA13_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22275		X							
44	HA13_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22276		X							
45	HA14_0.8-0.9	Jan 13, 2022		Soil	S22-Ja22277		X							
46	HA14_1.0-1.1	Jan 13, 2022		Soil	S22-Ja22278		X							
47	QC2	Jan 13, 2022		Soil	S22-Ja22279		X							
48	QC3	Jan 13, 2022		Soil	S22-Ja22280		X							
49	QC4	Jan 13, 2022		Soil	S22-Ja22281		X							
50	RINSATE	Jan 13, 2022		Water	S22-Ja22282		X							
51	TS	Jan 13, 2022		Water	S22-Ja22283		X							
52	TB	Jan 13, 2022		Water	S22-Ja22284		X							
53	HA04_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22477		X							

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

Project Name: ST LEONARDS
Project ID: 62180

Order No.:
Report #: 857006
Phone: 02 8245 0300
Fax:

Received: Jan 18, 2022 10:56 AM
Due: Jan 24, 2022
Priority: 5 Day
Contact Name: Christopher Dagger

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - WA guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1
Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
54	HA09_0.65-0.75	Jan 13, 2022		Soil	S22-Ja22478		X							
Test Counts						13	36	2	15	15	10	18	2	10

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



NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: Christopher Dagger
Report 857006-AID
Project Name **ST LEONARDS**
Project ID **62180**
Received Date Jan 18, 2022
Date Reported Jan 27, 2022

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 ST LEONARDS
Project ID 62180
Date Sampled Jan 13, 2022
Report 857006-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
HA01_0.0-0.1	22-Ja22062	Jan 13, 2022	Approximate Sample 470g Sample consisted of: Brown coarse-grained soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA02_0.0-0.1	22-Ja22063	Jan 13, 2022	Approximate Sample 432g Sample consisted of: Brown coarse-grained soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA04_0.0-0.1	22-Ja22064	Jan 13, 2022	Approximate Sample 320g Sample consisted of: Brown coarse-grained sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA05_0.0-0.1	22-Ja22065	Jan 13, 2022	Approximate Sample 843g Sample consisted of: Brown coarse-grained sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA06_0.0-0.1	22-Ja22067	Jan 13, 2022	Approximate Sample 453g Sample consisted of: Brown fine-grained clayey soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA07_0.0-0.1	22-Ja22068	Jan 13, 2022	Approximate Sample 572g Sample consisted of: Brown fine-grained clayey soil, brick, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA08_0.0-0.1	22-Ja22070	Jan 13, 2022	Approximate Sample 487g Sample consisted of: Brown fine-grained clayey soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA09_0.0-0.1	22-Ja22071	Jan 13, 2022	Approximate Sample 379g Sample consisted of: Brown fine-grained clayey soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
HA10_0.2-0.3	22-Ja22073	Jan 13, 2022	Approximate Sample 497g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA11_0.0-0.1	22-Ja22074	Jan 13, 2022	Approximate Sample 521g Sample consisted of: Brown coarse-grained soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA12_0.0-0.1	22-Ja22075	Jan 13, 2022	Approximate Sample 568g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
HA14_0.0-0.1	22-Ja22077	Jan 13, 2022	Approximate Sample 369g Sample consisted of: Brown fine-grained clayey soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
QC01	22-Ja22079	Jan 13, 2022	Approximate Sample 359g Sample consisted of: Brown coarse-grained soil, brick, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Jan 21, 2022	Indefinite

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Jan 18, 2022 10:56 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	Report #:	857006	Due:	Jan 24, 2022
Project Name:	ST LEONARDS	Phone:	02 8245 0300	Priority:	5 Day
Project ID:	62180	Fax:		Contact Name:	Christopher Dagger

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1
Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	HA01 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22062	X			X	X	X	X		X
2	HA02 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22063	X			X	X		X		
3	HA04 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22064	X			X	X		X		
4	HA05 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22065	X			X	X		X		
5	HA05 0.2-0.3	Jan 13, 2022		Soil	S22-Ja22066				X	X	X	X		X
6	HA06 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22067	X			X	X	X	X		X
7	HA07 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22068	X			X	X	X	X		X
8	HA07 0.5-0.6	Jan 13, 2022		Soil	S22-Ja22069			X				X	X	
9	HA08 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22070	X			X	X		X		

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		Phone:	02 8245 0300	Priority:	5 Day
		Fax:		Contact Name:	Christopher Dagger
Project Name:	ST LEONARDS				
Project ID:	62180				

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1
Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
10	HA09_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22071	X			X	X	X	X		X
11	HA09_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22072						X	X		X
12	HA10_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22073	X			X	X		X		
13	HA11_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22074	X			X	X	X	X		X
14	HA12_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22075	X			X	X	X	X		X
15	HA13_0.4-0.5	Jan 13, 2022		Soil	S22-Ja22076			X				X	X	
16	HA14_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22077	X			X	X		X		
17	HA14_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22078				X	X	X	X		X
18	QC01	Jan 13, 2022		Soil	S22-Ja22079	X			X	X	X	X		X
19	HA01_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22250		X							
20	HA01_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22251		X							

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Project Name:	ST LEONARDS				
Project ID:	62180				

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1
Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
21	HA02_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22252		X							
22	HA02_0.7-0.8	Jan 13, 2022		Soil	S22-Ja22253		X							
23	HA03_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22254		X							
24	HA03_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22255		X							
25	HA03_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22256		X							
26	HA04_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22257		X							
27	HA05_0.7-0.8	Jan 13, 2022		Soil	S22-Ja22259		X							
28	HA06_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22260		X							
29	HA06_0.4-0.5	Jan 13, 2022		Soil	S22-Ja22261		X							
30	HA06_0.6-0.7	Jan 13, 2022		Soil	S22-Ja22262		X							
31	HA07_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22263		X							

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Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1
Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
32	HA08_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22264		X							
33	HA08_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22265		X							
34	HA09_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22266		X							
35	HA10_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22267		X							
36	HA10_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22268		X							
37	HA10_0.8-0.9	Jan 13, 2022		Soil	S22-Ja22269		X							
38	HA11_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22270		X							
39	HA11_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22271		X							
40	HA11_0.7-0.8	Jan 13, 2022		Soil	S22-Ja22272		X							
41	HA12_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22273		X							
42	HA12_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22274		X							

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Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
43	HA13_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22275		X							
44	HA13_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22276		X							
45	HA14_0.8-0.9	Jan 13, 2022		Soil	S22-Ja22277		X							
46	HA14_1.0-1.1	Jan 13, 2022		Soil	S22-Ja22278		X							
47	QC2	Jan 13, 2022		Soil	S22-Ja22279		X							
48	QC3	Jan 13, 2022		Soil	S22-Ja22280		X							
49	QC4	Jan 13, 2022		Soil	S22-Ja22281		X							
50	RINSATE	Jan 13, 2022		Water	S22-Ja22282		X							
51	TS	Jan 13, 2022		Water	S22-Ja22283		X							
52	TB	Jan 13, 2022		Water	S22-Ja22284		X							
53	HA04_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22477		X							

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Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
54	HA09_0.65-0.75	Jan 13, 2022		Soil	S22-Ja22478		X							
Test Counts						13	36	2	15	15	10	18	2	10

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 the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).

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:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (% w/w)
F/ld	Airborne fibre filter loading as Fibres (N) per Fields counted (n)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (C)
g, kg	Mass, e.g. of whole sample (M) or asbestos-containing find within the sample (m)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (V = r x t)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (r)
min	Time (t), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \frac{a}{a} \times \frac{n}{n} \times \frac{r}{r} \times \frac{t}{t} = K \times \frac{n}{n} \times \frac{r}{r}$

Asbestos Content (as asbestos): $\% w/w = \frac{(m \times PA)}{M}$

Weighted Average (of asbestos): $\% w = \frac{\sum (m \times PA)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 <i>Appendix 2</i> , else assumed to be 15% in accordance with WA DOH <i>Appendix 2 (PA)</i> .
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (% w/w).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Compliant	Indicates the item has been assessed against the relevant criteria, e.g. NATA SAC_07.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
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.
HSG248	UK HSE HSG248, <i>Asbestos: The Analysts Guide</i> , 2nd Edition (2021).
HSG264	UK HSE HSG264, <i>Asbestos: The Survey Guide</i> (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (K) as derived from the effective filter area of the given AFM membrane used for collecting the sample (A) and the projected eyepiece graticule area of the specific microscope used for the analysis (a).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, <i>Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres</i> , 2nd Edition [NOHSC:3003(2005)].
N/A	Not Applicable. Indicates a result or assessment is not required or applicable to that item.
NATA	National Association of Testing Authorities, Australia.
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SAC_07	Specific Accreditation Criteria: ISO/IEC 17025 Application Document, Life Sciences – Annex, Asbestos sampling and testing.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according to the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, <i>Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia</i> (updated 2021), including Appendix Four: <i>Laboratory analysis</i>
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (%w _A).

Comments

22-Ja22062 to 22-Ja22064, 22-Ja22067, 22-Ja22070 to 22-Ja22073, 22-Ja22077 and 22-Ja22079: Samples received were less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

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](#).

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



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Accreditation Number 1261
Site Number 18217

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 Arrangement for the mutual recognition of the
 equivalence of testing, medical testing, calibration,
 inspection, proficiency testing scheme providers and
 reference materials producers reports and certificates.

Attention: **Christopher Dagger**

Report **857006-S**
Project name **ST LEONARDS**
Project ID **62180**
Received Date **Jan 18, 2022**

Client Sample ID			HA01_0.0-0.1	HA02_0.0-0.1	HA04_0.0-0.1	HA05_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja22062	S22-Ja22063	S22-Ja22064	S22-Ja22065
Date Sampled			Jan 13, 2022	Jan 13, 2022	Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	-	-	-
TRH C10-C14	20	mg/kg	< 20	-	-	-
TRH C15-C28	50	mg/kg	< 50	-	-	-
TRH C29-C36	50	mg/kg	< 50	-	-	-
TRH C10-C36 (Total)	50	mg/kg	< 50	-	-	-
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	-	-	-
TRH C6-C10	20	mg/kg	< 20	-	-	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	-	-	-
TRH >C10-C16	50	mg/kg	< 50	-	-	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	-	-	-
TRH >C16-C34	100	mg/kg	< 100	-	-	-
TRH >C34-C40	100	mg/kg	< 100	-	-	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-	-	-
4-Bromofluorobenzene (surr.)	1	%	77	-	-	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			HA01_0.0-0.1	HA02_0.0-0.1	HA04_0.0-0.1	HA05_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja22062	S22-Ja22063	S22-Ja22064	S22-Ja22065
Date Sampled			Jan 13, 2022	Jan 13, 2022	Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	< 0.5	0.8	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	0.8	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	1.6	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	94	93	98	88
p-Terphenyl-d14 (surr.)	1	%	88	80	81	71
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4,4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4,4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4,4'-DDT	0.05	mg/kg	< 0.05	-	-	-
α-HCH	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
β-HCH	0.05	mg/kg	< 0.05	-	-	-
δ-HCH	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
γ-HCH (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.05	mg/kg	< 0.05	-	-	-
Toxaphene	0.5	mg/kg	< 0.5	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchloroendate (surr.)	1	%	73	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	97	-	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchloroendate (surr.)	1	%	73	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	97	-	-	-

Client Sample ID			HA01_0.0-0.1	HA02_0.0-0.1	HA04_0.0-0.1	HA05_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja22062	S22-Ja22063	S22-Ja22064	S22-Ja22065
Date Sampled			Jan 13, 2022	Jan 13, 2022	Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	6.0	< 2	3.5	4.1
Cadmium	0.4	mg/kg	1.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	20	< 5	5.1	< 5
Copper	5	mg/kg	87	< 5	6.1	5.7
Lead	5	mg/kg	500	11	26	32
Mercury	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	10	< 5	< 5	< 5
Zinc	5	mg/kg	450	10	48	51
% Moisture	1	%	20	22	32	20

Client Sample ID			HA05_0.2-0.3	HA06_0.0-0.1	HA07_0.0-0.1	HA07_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja22066	S22-Ja22067	S22-Ja22068	S22-Ja22069
Date Sampled			Jan 13, 2022	Jan 13, 2022	Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	25	< 20	< 20	-
TRH C15-C28	50	mg/kg	96	120	100	-
TRH C29-C36	50	mg/kg	79	150	120	-
TRH C10-C36 (Total)	50	mg/kg	200	270	220	-
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	140	200	210	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	140	200	210	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	65	91	99	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-

Client Sample ID			HA05_0.2-0.3	HA06_0.0-0.1	HA07_0.0-0.1	HA07_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja22066	S22-Ja22067	S22-Ja22068	S22-Ja22069
Date Sampled			Jan 13, 2022	Jan 13, 2022	Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	0.7	0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	0.8	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	1.5	0.5	-
2-Fluorobiphenyl (surr.)	1	%	91	102	91	-
p-Terphenyl-d14 (surr.)	1	%	83	97	98	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
α-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
β-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
δ-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
γ-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Dibutylchloroendate (surr.)	1	%	59	85	76	-
Tetrachloro-m-xylene (surr.)	1	%	86	83	106	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-

Client Sample ID			HA05_0.2-0.3	HA06_0.0-0.1	HA07_0.0-0.1	HA07_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja22066	S22-Ja22067	S22-Ja22068	S22-Ja22069
Date Sampled			Jan 13, 2022	Jan 13, 2022	Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Dibutylchloroendate (surr.)	1	%	59	85	76	-
Tetrachloro-m-xylene (surr.)	1	%	86	83	106	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	4.5	20	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	5.7	9.4	24	-
Copper	5	mg/kg	9.4	56	140	-
Lead	5	mg/kg	11	100	210	-
Mercury	0.1	mg/kg	< 0.1	0.2	< 0.1	-
Nickel	5	mg/kg	< 5	< 5	6.1	-
Zinc	5	mg/kg	53	39	270	-
% Moisture	1	%	50	24	17	18
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	-	98
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	-	5.9
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	-	-	8.3

Client Sample ID			HA08_0.0-0.1	HA09_0.0-0.1	HA09_0.5-0.6	HA10_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja22070	S22-Ja22071	S22-Ja22072	S22-Ja22073
Date Sampled			Jan 13, 2022	Jan 13, 2022	Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	< 20	-
TRH C10-C14	20	mg/kg	-	< 20	< 20	-
TRH C15-C28	50	mg/kg	-	< 50	< 50	-
TRH C29-C36	50	mg/kg	-	< 50	< 50	-
TRH C10-C36 (Total)	50	mg/kg	-	< 50	< 50	-
Naphthalene ^{N02}	0.5	mg/kg	-	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	-	< 20	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	< 20	< 20	-
TRH >C10-C16	50	mg/kg	-	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	-	< 50	< 50	-
TRH >C16-C34	100	mg/kg	-	< 100	< 100	-
TRH >C34-C40	100	mg/kg	-	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	< 100	-
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	-	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	96	98	-

Client Sample ID			HA08_0.0-0.1	HA09_0.0-0.1	HA09_0.5-0.6	HA10_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja22070	S22-Ja22071	S22-Ja22072	S22-Ja22073
Date Sampled			Jan 13, 2022	Jan 13, 2022	Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	1.9	0.7	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	2.2	1.0	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	2.5	1.3	-	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	1.1	0.6	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	1.6	0.6	-	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	1.1	< 0.5	-	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	0.6	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	0.8	0.7	-	< 0.5
Chrysene	0.5	mg/kg	1.7	0.7	-	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	4.3	1.3	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	2.6	0.6	-	< 0.5
Pyrene	0.5	mg/kg	3.8	1.2	-	< 0.5
Total PAH*	0.5	mg/kg	17.6	5.7	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	87	69	-	100
p-Terphenyl-d14 (surr.)	1	%	74	86	-	86
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	-
4,4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	-
4,4'-DDE	0.05	mg/kg	-	0.10	< 0.05	-
4,4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	-
α-HCH	0.05	mg/kg	-	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	-
β-HCH	0.05	mg/kg	-	< 0.05	< 0.05	-
δ-HCH	0.05	mg/kg	-	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	-
γ-HCH (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	-
Methoxychlor	0.05	mg/kg	-	< 0.05	< 0.05	-
Toxaphene	0.5	mg/kg	-	< 0.5	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	0.1	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	0.1	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	< 0.1	-
Dibutylchloroendate (surr.)	1	%	-	59	101	-
Tetrachloro-m-xylene (surr.)	1	%	-	92	84	-

Client Sample ID			HA08_0.0-0.1	HA09_0.0-0.1	HA09_0.5-0.6	HA10_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja22070	S22-Ja22071	S22-Ja22072	S22-Ja22073
Date Sampled			Jan 13, 2022	Jan 13, 2022	Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	< 0.1	< 0.1	-
Aroclor-1221	0.1	mg/kg	-	< 0.1	< 0.1	-
Aroclor-1232	0.1	mg/kg	-	< 0.1	< 0.1	-
Aroclor-1242	0.1	mg/kg	-	< 0.1	< 0.1	-
Aroclor-1248	0.1	mg/kg	-	< 0.1	< 0.1	-
Aroclor-1254	0.1	mg/kg	-	< 0.1	< 0.1	-
Aroclor-1260	0.1	mg/kg	-	< 0.1	< 0.1	-
Total PCB*	0.1	mg/kg	-	< 0.1	< 0.1	-
Dibutylchloredate (surr.)	1	%	-	59	101	-
Tetrachloro-m-xylene (surr.)	1	%	-	92	84	-
Heavy Metals						
Arsenic	2	mg/kg	8.6	9.0	-	18
Cadmium	0.4	mg/kg	0.5	0.5	-	2.9
Chromium	5	mg/kg	16	16	-	35
Copper	5	mg/kg	60	64	-	200
Lead	5	mg/kg	250	260	-	1200
Mercury	0.1	mg/kg	0.1	0.4	-	0.8
Nickel	5	mg/kg	7.5	5.6	-	10
Zinc	5	mg/kg	170	170	-	1400
% Moisture	1	%	21	19	18	22

Client Sample ID			HA11_0.0-0.1	HA12_0.0-0.1	HA13_0.4-0.5	HA14_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja22074	S22-Ja22075	S22-Ja22076	S22-Ja22077
Date Sampled			Jan 13, 2022	Jan 13, 2022	Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	-	-
TRH C10-C14	20	mg/kg	< 20	< 20	-	-
TRH C15-C28	50	mg/kg	< 50	< 50	-	-
TRH C29-C36	50	mg/kg	< 50	< 50	-	-
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	-	-
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	-	-
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	< 100	< 100	-	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	100	84	-	-

Client Sample ID			HA11_0.0-0.1	HA12_0.0-0.1	HA13_0.4-0.5	HA14_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja22074	S22-Ja22075	S22-Ja22076	S22-Ja22077
Date Sampled			Jan 13, 2022	Jan 13, 2022	Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	94	117	-	100
p-Terphenyl-d14 (surr.)	1	%	80	111	-	87
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	-
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	-
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	-
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	-
α-HCH	0.05	mg/kg	< 0.05	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
β-HCH	0.05	mg/kg	< 0.05	< 0.05	-	-
δ-HCH	0.05	mg/kg	< 0.05	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	-
γ-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	-
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	-
Dibutylchloroendate (surr.)	1	%	63	117	-	-
Tetrachloro-m-xylene (surr.)	1	%	93	114	-	-

Client Sample ID			HA11_0.0-0.1	HA12_0.0-0.1	HA13_0.4-0.5	HA14_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ja22074	S22-Ja22075	S22-Ja22076	S22-Ja22077
Date Sampled			Jan 13, 2022	Jan 13, 2022	Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	-	-
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	63	117	-	-
Tetrachloro-m-xylene (surr.)	1	%	93	114	-	-
Heavy Metals						
Arsenic	2	mg/kg	3.3	7.1	-	4.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
Chromium	5	mg/kg	7.2	16	-	12
Copper	5	mg/kg	17	< 5	-	15
Lead	5	mg/kg	72	22	-	42
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Nickel	5	mg/kg	< 5	< 5	-	< 5
Zinc	5	mg/kg	89	7.0	-	83
% Moisture	1	%	18	16	16	26
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	79	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	5.3	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	-	5.9	-

Client Sample ID			HA14_0.2-0.3	QC01
Sample Matrix			Soil	Soil
Eurofins Sample No.			S22-Ja22078	S22-Ja22079
Date Sampled			Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	90
TRH C29-C36	50	mg/kg	< 50	140
TRH C10-C36 (Total)	50	mg/kg	< 50	230
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	180
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	180

Client Sample ID			HA14_0.2-0.3	QC01
Sample Matrix			Soil	Soil
Eurofins Sample No.			S22-Ja22078	S22-Ja22079
Date Sampled			Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit		
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	105	94
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	98	92
p-Terphenyl-d14 (surr.)	1	%	84	76
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05

Client Sample ID			HA14_0.2-0.3	QC01
Sample Matrix			Soil	Soil
Eurofins Sample No.			S22-Ja22078	S22-Ja22079
Date Sampled			Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit		
Organochlorine Pesticides				
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchloredate (surr.)	1	%	69	55
Tetrachloro-m-xylene (surr.)	1	%	97	85
Polychlorinated Biphenyls				
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchloredate (surr.)	1	%	69	55
Tetrachloro-m-xylene (surr.)	1	%	97	85
Heavy Metals				
Arsenic	2	mg/kg	8.4	22
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	20	25
Copper	5	mg/kg	15	67
Lead	5	mg/kg	68	220
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	8.4
Zinc	5	mg/kg	62	390
% Moisture	1	%	20	26

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B1			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jan 21, 2022	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jan 21, 2022	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jan 21, 2022	14 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jan 21, 2022	14 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Jan 21, 2022	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Jan 21, 2022	28 Days
pH (1:5 Aqueous extract at 25°C as rec.) - Method: LTM-GEN-7090 pH by ISE	Sydney	Jan 21, 2022	7 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Jan 21, 2022	14 Days
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Jan 21, 2022	28 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Jan 21, 2022	14 Days
Conductivity (1:5 aqueous extract at 25°C as rec.) - Method: LTM-INO-4030 Conductivity	Sydney	Jan 21, 2022	7 Days
Cation Exchange Capacity - Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage	Melbourne	Jan 25, 2022	28 Days

Company Name:	JBS & G Australia (NSW) P/L	Order No.:		Received:	Jan 18, 2022 10:56 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	Report #:	857006	Due:	Jan 24, 2022
Project Name:	ST LEONARDS	Phone:	02 8245 0300	Priority:	5 Day
Project ID:	62180	Fax:		Contact Name:	Christopher Dagger

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1
Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	HA01 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22062	X			X	X	X	X		X
2	HA02 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22063	X			X	X		X		
3	HA04 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22064	X			X	X		X		
4	HA05 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22065	X			X	X		X		
5	HA05 0.2-0.3	Jan 13, 2022		Soil	S22-Ja22066				X	X	X	X		X
6	HA06 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22067	X			X	X	X	X		X
7	HA07 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22068	X			X	X	X	X		X
8	HA07 0.5-0.6	Jan 13, 2022		Soil	S22-Ja22069			X				X	X	
9	HA08 0.0-0.1	Jan 13, 2022		Soil	S22-Ja22070	X			X	X		X		

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Sample Detail						Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1
Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
10	HA09_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22071	X			X	X	X	X		X
11	HA09_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22072						X	X		X
12	HA10_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22073	X			X	X		X		
13	HA11_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22074	X			X	X	X	X		X
14	HA12_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22075	X			X	X	X	X		X
15	HA13_0.4-0.5	Jan 13, 2022		Soil	S22-Ja22076			X				X	X	
16	HA14_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22077	X			X	X		X		
17	HA14_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22078				X	X	X	X		X
18	QC01	Jan 13, 2022		Soil	S22-Ja22079	X			X	X	X	X		X
19	HA01_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22250		X							
20	HA01_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22251		X							

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Sample Detail						Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1
Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
21	HA02_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22252		X							
22	HA02_0.7-0.8	Jan 13, 2022		Soil	S22-Ja22253		X							
23	HA03_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22254		X							
24	HA03_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22255		X							
25	HA03_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22256		X							
26	HA04_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22257		X							
27	HA05_0.7-0.8	Jan 13, 2022		Soil	S22-Ja22259		X							
28	HA06_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22260		X							
29	HA06_0.4-0.5	Jan 13, 2022		Soil	S22-Ja22261		X							
30	HA06_0.6-0.7	Jan 13, 2022		Soil	S22-Ja22262		X							
31	HA07_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22263		X							

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Sample Detail						Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1
Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
32	HA08_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22264		X							
33	HA08_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22265		X							
34	HA09_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22266		X							
35	HA10_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22267		X							
36	HA10_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22268		X							
37	HA10_0.8-0.9	Jan 13, 2022		Soil	S22-Ja22269		X							
38	HA11_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22270		X							
39	HA11_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22271		X							
40	HA11_0.7-0.8	Jan 13, 2022		Soil	S22-Ja22272		X							
41	HA12_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22273		X							
42	HA12_0.5-0.6	Jan 13, 2022		Soil	S22-Ja22274		X							

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Project Name:	ST LEONARDS				
Project ID:	62180				

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1
Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
43	HA13_0.0-0.1	Jan 13, 2022		Soil	S22-Ja22275		X							
44	HA13_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22276		X							
45	HA14_0.8-0.9	Jan 13, 2022		Soil	S22-Ja22277		X							
46	HA14_1.0-1.1	Jan 13, 2022		Soil	S22-Ja22278		X							
47	QC2	Jan 13, 2022		Soil	S22-Ja22279		X							
48	QC3	Jan 13, 2022		Soil	S22-Ja22280		X							
49	QC4	Jan 13, 2022		Soil	S22-Ja22281		X							
50	RINSATE	Jan 13, 2022		Water	S22-Ja22282		X							
51	TS	Jan 13, 2022		Water	S22-Ja22283		X							
52	TB	Jan 13, 2022		Water	S22-Ja22284		X							
53	HA04_0.2-0.3	Jan 13, 2022		Soil	S22-Ja22477		X							

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Sample Detail						Asbestos - WA guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B1
Melbourne Laboratory - NATA # 1261 Site # 1254												X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
54	HA09_0.65-0.75	Jan 13, 2022		Soil	S22-Ja22478		X							
Test Counts						13	36	2	15	15	10	18	2	10

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

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

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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

Results <10 times the LOR: No Limit

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

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

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	78			70-130	Pass	
TRH C10-C14	%	72			70-130	Pass	
Naphthalene	%	98			70-130	Pass	
TRH C6-C10	%	77			70-130	Pass	
TRH >C10-C16	%	85			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	93			70-130	Pass	
Toluene	%	89			70-130	Pass	
Ethylbenzene	%	90			70-130	Pass	
m&p-Xylenes	%	91			70-130	Pass	
o-Xylene	%	93			70-130	Pass	
Xylenes - Total*	%	92			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	93			70-130	Pass	
Acenaphthylene	%	94			70-130	Pass	
Anthracene	%	95			70-130	Pass	
Benz(a)anthracene	%	99			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	%	105			70-130	Pass	
Benzo(b&j)fluoranthene	%	98			70-130	Pass	
Benzo(g,h,i)perylene	%	113			70-130	Pass	
Benzo(k)fluoranthene	%	107			70-130	Pass	
Chrysene	%	100			70-130	Pass	
Dibenz(a,h)anthracene	%	103			70-130	Pass	
Fluoranthene	%	92			70-130	Pass	
Fluorene	%	98			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	103			70-130	Pass	
Naphthalene	%	92			70-130	Pass	
Phenanthrene	%	91			70-130	Pass	
Pyrene	%	91			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	79			70-130	Pass	
4,4'-DDD	%	84			70-130	Pass	
4,4'-DDE	%	89			70-130	Pass	
4,4'-DDT	%	84			70-130	Pass	
a-HCH	%	85			70-130	Pass	
Aldrin	%	86			70-130	Pass	
b-HCH	%	82			70-130	Pass	
d-HCH	%	84			70-130	Pass	
Dieldrin	%	83			70-130	Pass	
Endosulfan I	%	98			70-130	Pass	
Endosulfan II	%	77			70-130	Pass	
Endosulfan sulphate	%	72			70-130	Pass	
Endrin	%	80			70-130	Pass	
Endrin aldehyde	%	72			70-130	Pass	
Endrin ketone	%	88			70-130	Pass	
g-HCH (Lindane)	%	78			70-130	Pass	
Heptachlor	%	86			70-130	Pass	
Heptachlor epoxide	%	81			70-130	Pass	
Hexachlorobenzene	%	87			70-130	Pass	
Methoxychlor	%	110			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	90			70-130	Pass	
Aroclor-1260	%	89			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	103			80-120	Pass	
Cadmium	%	105			80-120	Pass	
Chromium	%	112			80-120	Pass	
Copper	%	113			80-120	Pass	
Lead	%	113			80-120	Pass	
Mercury	%	97			80-120	Pass	
Nickel	%	112			80-120	Pass	
Zinc	%	106			80-120	Pass	
LCS - % Recovery							
Conductivity (1:5 aqueous extract at 25°C as rec.)	%	99			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S22-Ja19585	NCP	%	93			70-130	Pass	
TRH >C10-C16	S22-Ja19585	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Copper	S22-Ja19588	NCP	%	92			75-125	Pass	
Lead	S22-Ja19588	NCP	%	113			75-125	Pass	
Zinc	S22-Ja21942	NCP	%	113			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S22-Ja22067	CP	%	80			70-130	Pass	
Naphthalene	S22-Ja22067	CP	%	90			70-130	Pass	
TRH C6-C10	S22-Ja22067	CP	%	77			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S22-Ja22067	CP	%	89			70-130	Pass	
Toluene	S22-Ja22067	CP	%	85			70-130	Pass	
Ethylbenzene	S22-Ja22067	CP	%	87			70-130	Pass	
m&p-Xylenes	S22-Ja22067	CP	%	89			70-130	Pass	
o-Xylene	S22-Ja22067	CP	%	90			70-130	Pass	
Xylenes - Total*	S22-Ja22067	CP	%	90			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S22-Ja22067	CP	%	72			70-130	Pass	
Acenaphthylene	S22-Ja22067	CP	%	76			70-130	Pass	
Anthracene	S22-Ja19855	NCP	%	86			70-130	Pass	
Benz(a)anthracene	S22-Ja19855	NCP	%	89			70-130	Pass	
Benzo(a)pyrene	S22-Ja19855	NCP	%	85			70-130	Pass	
Benzo(b&j)fluoranthene	S22-Ja19855	NCP	%	79			70-130	Pass	
Benzo(g,h,i)perylene	S22-Ja19855	NCP	%	77			70-130	Pass	
Benzo(k)fluoranthene	S22-Ja19855	NCP	%	88			70-130	Pass	
Chrysene	S22-Ja19855	NCP	%	87			70-130	Pass	
Dibenz(a,h)anthracene	S22-Ja19855	NCP	%	78			70-130	Pass	
Fluoranthene	S22-Ja22067	CP	%	74			70-130	Pass	
Fluorene	S22-Ja22067	CP	%	78			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S22-Ja19855	NCP	%	79			70-130	Pass	
Naphthalene	S22-Ja22067	CP	%	91			70-130	Pass	
Phenanthrene	S22-Ja22067	CP	%	85			70-130	Pass	
Pyrene	S22-Ja22067	CP	%	75			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S22-Ja19855	NCP	%	83			70-130	Pass	
4,4'-DDE	S22-Ja19855	NCP	%	74			70-130	Pass	
a-HCH	S22-Ja19855	NCP	%	75			70-130	Pass	
Aldrin	S22-Ja19855	NCP	%	73			70-130	Pass	
b-HCH	S22-Ja19855	NCP	%	78			70-130	Pass	
d-HCH	S22-Ja19855	NCP	%	83			70-130	Pass	
Dieldrin	S22-Ja19855	NCP	%	73			70-130	Pass	
Endosulfan I	S22-Ja19855	NCP	%	72			70-130	Pass	
Endosulfan II	S22-Ja19845	NCP	%	73			70-130	Pass	
Endrin	S22-Ja19855	NCP	%	75			70-130	Pass	
g-HCH (Lindane)	S22-Ja19855	NCP	%	80			70-130	Pass	
Heptachlor epoxide	S22-Ja19855	NCP	%	73			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Hexachlorobenzene	S22-Ja19855	NCP	%	88			70-130	Pass	
Methoxychlor	S22-Ja19855	NCP	%	128			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S22-Ja22070	CP	%	86			75-125	Pass	
Cadmium	S22-Ja22070	CP	%	93			75-125	Pass	
Chromium	S22-Ja22070	CP	%	84			75-125	Pass	
Mercury	S22-Ja22070	CP	%	76			75-125	Pass	
Nickel	S22-Ja22070	CP	%	93			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Ja22063	CP	%	22	23	2.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-Ja22066	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Naphthalene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S22-Ja22066	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Ja22066	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S22-Ja22066	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S22-Ja22066	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S22-Ja22066	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S22-Ja22066	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S22-Ja22066	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S22-Ja22066	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4,4'-DDD	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDE	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDT	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Dieldrin	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-HCH (Lindane)	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S22-Ja22066	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S22-Ja22066	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S22-Ja22066	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	S22-Ja22066	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S22-Ja22066	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	S22-Ja22066	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	S22-Ja22066	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	S22-Ja22066	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	S22-Ja22066	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	S22-Ja22066	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S22-Ja22068	CP	mg/kg	20	22	9.0	30%	Pass
Cadmium	S22-Ja22068	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S22-Ja22068	CP	mg/kg	24	27	10	30%	Pass
Lead	S22-Ja22068	CP	mg/kg	210	200	6.0	30%	Pass
Mercury	S22-Ja22068	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S22-Ja22068	CP	mg/kg	6.1	< 5	24	30%	Pass
Zinc	S22-Ja22068	CP	mg/kg	270	380	37	30%	Fail
Q15								
Duplicate								
				Result 1	Result 2	RPD		
Conductivity (1:5 aqueous extract at 25°C as rec.)	S22-Ja17542	NCP	uS/cm	34	37	7.8	30%	Pass
pH (1:5 Aqueous extract at 25°C as rec.)	S22-Ja17542	NCP	pH Units	6.7	6.7	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD		
TRH C10-C14	S22-Ja22071	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S22-Ja22071	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S22-Ja22071	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C10-C16	S22-Ja22071	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S22-Ja22071	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S22-Ja22071	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S22-Ja22073	CP	%	22	22	2.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S22-Ja22074	CP	mg/kg	3.3	3.8	15	30%	Pass
Cadmium	S22-Ja22074	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S22-Ja22074	CP	mg/kg	7.2	7.3	2.0	30%	Pass
Copper	S22-Ja22074	CP	mg/kg	17	17	<1	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S22-Ja22074	CP	mg/kg	72	66	10	30%	Pass
Mercury	S22-Ja22074	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S22-Ja22074	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	S22-Ja22074	CP	mg/kg	89	85	5.0	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Charl Du Preez	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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RE: Eurofins Test Results - Report 857006 : Site ST LEONARDS (62180)

Ursula Long <UrsulaLong@eurofins.com>

Tue 1/25/2022 1:24 PM

To: Christopher Dagger <cdagger@jbsg.com.au>; #AU04_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>

Cc: Nathan Cussen <NCussen@jbsg.com.au>

Please amend as per the below & attached

Instead of the entire suite for Metals,
Could TCLP be carried out on just Lead:

HA01_0.0-0.1 (Lead)

HA08_0.0-0.1 (PAH)

HA10_0.2-0.3 (Lead)

QC01 (Lead)

Kind regards,

Ursula Long

Analytical Services Manager

Eurofins Environment Testing Australia Pty Ltd

Unit F3, Parkview Building

16 Mars Road

LANE COVE WEST NSW 2066

AUSTRALIA

Mobile: +61 428 845 495**Email :** UrsulaLong@eurofins.com**Website:** www.eurofins.com.au/environmental-testing

For sample receipt enquiries (eg. SRAs, changes to analysis) please contact EnviroSampleNSW@eurofins.com or 02 9900 8421 (7am – 12am).

For despatch enquiries (eg. courier bookings, bottle orders) please contact AU04_Despatch_SYD@eurofins.com or 0488 400 929 (8am – 4pm).

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From: Ursula Long**Sent:** Tuesday, 25 January 2022 1:22 PM**To:** Christopher Dagger <cdagger@jbsg.com.au>; #AU04_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>**Cc:** Nathan Cussen <NCussen@jbsg.com.au>**Subject:** RE: Eurofins Test Results - Report 857006 : Site ST LEONARDS (62180)**Importance:** High

No problem Chris.

Sample receipt please log in this additional analysis on a 1 day TAT

Kind regards,

Ursula Long

Analytical Services Manager

Eurofins Environment Testing Australia Pty Ltd

Unit F3, Parkview Building

16 Mars Road

LANE COVE WEST NSW 2066

AUSTRALIA

Mobile: +61 428 845 495

Email : UrsulaLong@eurofins.com

Website: www.eurofins.com.au/environmental-testing

For sample receipt enquiries (eg. SRAs, changes to analysis) please contact EnvirosampleNSW@eurofins.com or 02 9900 8421 (7am – 12am).

For despatch enquiries (eg. courier bookings, bottle orders) please contact AU04_Despatch_SYD@eurofins.com or 0488 400 929 (8am – 4pm).

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From: Christopher Dagger <cdagger@jbsg.com.au>

Sent: Tuesday, 25 January 2022 1:14 PM

To: Ursula Long <UrsulaLong@eurofins.com>

Cc: Nathan Cussen <NCussen@jbsg.com.au>

Subject: RE: Eurofins Test Results - Report 857006 : Site ST LEONARDS (62180)

EXTERNAL EMAIL*

Hi Ursula,

With regards to the lab batch 857006.

Could I schedule the following for TCLP analysis on 24hr TAT:

HA01_0.0-0.1 (Metals)

HA08_0.0-0.1 (PAH)

HA10_0.2-0.3 (metals)

QC01 (Metals)

Kind regards,

Chris



Chris Dagger | Environmental Consultant | JBS&G

Sydney | Melbourne | Adelaide | Perth | Brisbane | Canberra | Darwin | Wollongong

Level 1, 50 Margaret Street Sydney NSW 2000

T: 02 8245 0300 | M: 0447 490 001 | E: cdagger@jbsg.com.au | W: www.jbsg.com.au

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From: UrsulaLong@eurofins.com <UrsulaLong@eurofins.com>
Sent: Monday, 24 January 2022 6:30 PM
To: Christopher Dagger <cdagger@jbgs.com.au>
Cc: Nathan Cussen <NCussen@jbgs.com.au>
Subject: Eurofins Test Results - Report 857006 : Site ST LEONARDS (62180)

*****[EXTERNAL EMAIL]** Stop and think before opening attachments, clicking or responding.***

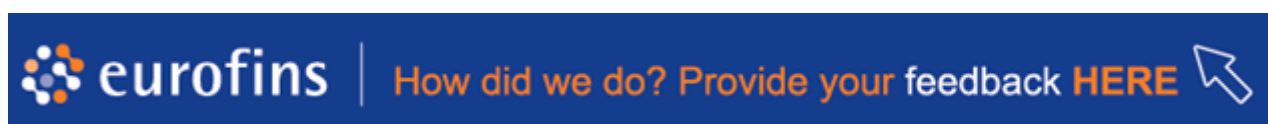
Please find attached draft results for your project in the subject header.

Regards

Ursula Long

Eurofins

Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA
Phone: +61 428 845 495
Email: UrsulaLong@eurofins.com
Website: <http://environment.eurofins.com.au>
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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne

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

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
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle

4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth

46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited

NZBN: 9429046024954

Auckland

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

Christchurch

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

Sample Receipt Advice

Company name: JBS & G Australia (NSW) P/L
Contact name: Christopher Dagger
Project name: ADDITIONAL - ST LEONARDS
Project ID: ADDITIONAL - 62180
Turnaround time: 1 Day
Date/Time received: Jan 25, 2022 1:24 PM
Eurofins reference: 857866

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 12.5 degrees Celsius.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Christopher Dagger - cdagger@jbsg.com.au.



Environment Testing

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne

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

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

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4/52 Industrial Drive
Mayfield East NSW 2304
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46-48 Banksia Road
Welshpool WA 6106
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NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited

NZBN: 9429046024954

Auckland

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

Christchurch

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

web: www.eurofins.com.au

email: EnviroSales@eurofins.com

Company Name: JBS & G Australia (NSW) P/L

Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: ADDITIONAL - ST LEONARDS

Project ID: ADDITIONAL - 62180

Order No.:

Report #: 857866

Phone: 02 8245 0300

Fax:

Received: Jan 25, 2022 1:24 PM

Due: Jan 27, 2022

Priority: 1 Day

Contact Name: Christopher Dagger

Eurofins Analytical Services Manager : Ursula Long

Sample Detail

Lead

Polycyclic Aromatic Hydrocarbons

USA Leaching Procedure

Melbourne Laboratory - NATA # 1261 Site # 1254

Sydney Laboratory - NATA # 1261 Site # 18217

Brisbane Laboratory - NATA # 1261 Site # 20794

Mayfield Laboratory - NATA # 1261 Site # 25079

Perth Laboratory - NATA # 2377 Site # 2370

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	HA01 0.0-0.1	Jan 13, 2022		US Leachate	S22-Ja29066	X		X
2	HA08 0.0-0.1	Jan 13, 2022		US Leachate	S22-Ja29067		X	X
3	HA10 0.2-0.3	Jan 13, 2022		US Leachate	S22-Ja29068	X		X
4	QC01	Jan 13, 2022		US Leachate	S22-Ja29069	X		X

Test Counts

3

1

4

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



NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Christopher Dagger**

Report **857866-L**
 Project name **ADDITIONAL - ST LEONARDS**
 Project ID **ADDITIONAL - 62180**
 Received Date **Jan 25, 2022**

Client Sample ID			HA01_0.0-0.1	HA08_0.0-0.1	HA10_0.2-0.3	QC01
Sample Matrix			US Leachate	US Leachate	US Leachate	US Leachate
Eurofins Sample No.			S22-Ja29066	S22-Ja29067	S22-Ja29068	S22-Ja29069
Date Sampled			Jan 13, 2022	Jan 13, 2022	Jan 13, 2022	Jan 13, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	0.01	mg/L	0.13	-	0.55	0.07
USA Leaching Procedure						
Leachate Fluid ^{C01}		comment	1.0	1.0	1.0	1.0
pH (initial)	0.1	pH Units	5.2	5.0	5.1	5.0
pH (off)	0.1	pH Units	5.0	5.0	5.1	5.0
pH (USA HCl addition)	0.1	pH Units	2.1	2.1	2.2	2.2
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	-	< 0.001	-	-
Acenaphthylene	0.001	mg/L	-	< 0.001	-	-
Anthracene	0.001	mg/L	-	< 0.001	-	-
Benz(a)anthracene	0.001	mg/L	-	< 0.001	-	-
Benzo(a)pyrene	0.001	mg/L	-	< 0.001	-	-
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	-	< 0.001	-	-
Benzo(g,h,i)perylene	0.001	mg/L	-	< 0.001	-	-
Benzo(k)fluoranthene	0.001	mg/L	-	< 0.001	-	-
Chrysene	0.001	mg/L	-	< 0.001	-	-
Dibenz(a,h)anthracene	0.001	mg/L	-	< 0.001	-	-
Fluoranthene	0.001	mg/L	-	< 0.001	-	-
Fluorene	0.001	mg/L	-	< 0.001	-	-
Indeno(1,2,3-cd)pyrene	0.001	mg/L	-	< 0.001	-	-
Naphthalene	0.001	mg/L	-	< 0.001	-	-
Phenanthrene	0.001	mg/L	-	< 0.001	-	-
Pyrene	0.001	mg/L	-	< 0.001	-	-
Total PAH*	0.001	mg/L	-	< 0.001	-	-
2-Fluorobiphenyl (surr.)	1	%	-	94	-	-
p-Terphenyl-d14 (surr.)	1	%	-	107	-	-

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Jan 27, 2022	28 Days
USA Leaching Procedure - Method: LTM-GEN-7010 Leaching Procedure for Soils & Solid Wastes	Sydney	Jan 25, 2022	14 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Jan 25, 2022	7 Days

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

Project Name: ADDITIONAL - ST LEONARDS
Project ID: ADDITIONAL - 62180

Order No.:
Report #: 857866
Phone: 02 8245 0300
Fax:

Received: Jan 25, 2022 1:24 PM
Due: Jan 27, 2022
Priority: 1 Day
Contact Name: Christopher Dagger

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Lead	Polycyclic Aromatic Hydrocarbons	USA Leaching Procedure
Melbourne Laboratory - NATA # 1261 Site # 1254								
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794								
Mayfield Laboratory - NATA # 1261 Site # 25079								
Perth Laboratory - NATA # 2377 Site # 2370								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	HA01 0.0-0.1	Jan 13, 2022		US Leachate	S22-Ja29066	X		X
2	HA08 0.0-0.1	Jan 13, 2022		US Leachate	S22-Ja29067		X	X
3	HA10 0.2-0.3	Jan 13, 2022		US Leachate	S22-Ja29068	X		X
4	QC01	Jan 13, 2022		US Leachate	S22-Ja29069	X		X
Test Counts						3	1	4

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

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

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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

Results <10 times the LOR: No Limit

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

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

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Lead	mg/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Heavy Metals							
Lead	%	87			80-120	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
C01	Leachate Fluid Key: 1 - pH 5.0; 2 - pH 2.9; 3 - pH 9.2; 4 - Reagent (DI) water; 5 - Client sample, 6 - other
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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Appendix J Calibration and Decontamination Records



Calibration Certificate

AirMet Scientific P/L

Level 3, 18-26 Dickson
Avenue
Artarmon
NSW 2064, Australia
Tel: 02 8425 8300
Fax: 02 8425 8399

This document certifies that the instrument detailed has been calibrated to the parameters

Certificate Print Date: 8-Oct-2021

Call ID / Order No: 252564

Calibration Date: 08-Oct-2021

Job No / Pack No: S2525640001

Next Calibration Due: 6-Apr-2022

Customer: JBS&G Australia Pty Ltd-ID 202507

Serial No: T-111608

Description: PhoCheck Tiger Li-ion Battery Battery Charger & M

Calibration Summary

Frequency: 180 Days Temp: 22°C As Found: In Tolerance Result: Pass
Humidity: 45% Certificate: S2525640001

<u>Desc</u>	<u>As Found</u>		<u>As Left (Cal Status)</u>	
	<u>Actual</u>	<u>Result</u>	<u>Actual</u>	<u>Result</u>
ISOBUTYLENE 100ppm	103.2	Pass	101.9	Pass
ISOBUTYLENE 1000ppm	989.6	Pass	1005.2	Pass

Standard Used				
<u>Equip ID</u>	<u>Description</u>	<u>Valid Until</u>	<u>Cert</u>	
SY356	Zero Grade Air 20.9%VOL O2, N2 Balance	26-09-2025	400293734	
SY336	ISO-BUTYLENE 1000PPM, AIR BALANCE	28-07-2023	BU 70910-041220	
SY421	Isobutylene 100 ppm, Air Balance	01-07-2026	400299246	

Please note -This instrument is not Intrinsic Safety device.

Completed By: Jason Cheng

Signed: 

Field Equipment Calibration and Decontamination

PROJECT NAME: <i>St Leonards</i>	PROJECT NO: <i>62180</i>
FIELDWORK DATES: <i>13-14/01/2022</i>	SAMPLERS: <i>JB+CD</i>
TYPE OF INVESTIGATION: <i>DSI</i>	PROJECT MANAGER: <i>CD</i>

CALIBRATION SUMMARY

EQUIPMENT:

Hand auger + PID.

CALIBRATION STANDARD: *100ppm.*

DATE	TIME	READING (ppm)	COMMENTS
<i>13/1/22</i>	<i>9:10</i>	<i>0</i>	<i>Zero cal</i>
<i>↓</i>	<i>9:11</i>	<i>100</i>	<i>100ppm Isobutylene cal</i>
<i>↓</i>	<i>9:12</i>	<i>99.7</i>	<i>Bump test.</i>
<i>14/1/22</i>	<i>7:45</i>	<i>0</i>	<i>Zero cal</i>
<i>↓</i>	<i>7:46</i>	<i>100</i>	<i>100ppm Isobutylene cal</i>
<i>↓</i>	<i>7:47</i>	<i>98.9</i>	<i>Bump test.</i>

DECONTAMINATION SUMMARY

EQUIPMENT:

Hand auger

1	Was the equipment decontaminated appropriately prior to sampling at each location?	<i>Y</i>	N	NA
2	Was excess soil removed by scraping, brushing or wiping with disposable towels?	<i>Y</i>	N	NA
3	Was the equipment contaminated with grease, tar or similar material?	Y	<i>N</i>	NA
	If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y	N	<i>NA</i>
4	Was phosphate-free detergent used to wash the equipment?	<i>Y</i>	N	NA
5	Was the equipment rinsed with clean water?	<i>Y</i>	N	NA
6	Was the equipment then rinsed with deionised water?	<i>Y</i>	N	NA
7	Were all sample containers cleaned and acid or solvent washed prior to sample collection?	<i>Y</i>	N	NA

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS

Single use disposable nitrile gloves worn for each sample collection.

Appendix K QA/QC Assessment

QA/QC Results

The QA/QC result for soil and water samples collected are summarised in **Table K.1** and discussed below. Detailed QA/QC results are included following the discussion of DQI exceedances below.

Table K.1: QA/QC Results Summary

Data Quality Indicator	Results	DQO met?
Precision		
Blind duplicates (intra laboratory)	0-100% RPDs Intra laboratory samples were analysed at a rate greater than 1 in 20 samples.	Partial ¹
Blind duplicates (inter laboratory)	0-126% RPDs Inter laboratory were analysed at a rate greater than 1 in 20 samples.	Partial ¹
Laboratory duplicates	0-50% RPD Laboratory samples were analysed at a rate greater than 1 in 20 samples.	Yes
Accuracy		
Laboratory control samples (LCS)	70-130% recovery Laboratory control samples were completed at a suitable density with respect to laboratory batch size and sample analyses.	Yes
Surrogate spikes	55-132% Surrogate spikes were completed for all organic sample analyses	Partial ¹
Matrix spikes	70-130% recovery Matrix spikes were completed at a suitable density with respect to laboratory batch size and sample analyses.	Yes
Representativeness		
Samples extracted and analysed within holding times	All primary and duplicate samples were extracted within appropriate holding times.	Partial ¹
Sampling appropriate for media and analytes	Samples were collected using appropriate methodology with regard to the sample media (soil, water, soil vapour) and analytes (volatile, semi-volatile and low volatility organics and inorganics)	Partial ¹
Trip spike	70-130% One completed per sampling event and associated laboratory batch	Partial ¹
Trip blank	<LOR One completed per sampling event and associated laboratory batch	Partial ¹
Rinsate blank	<LOR for most analytes in all 12 rinsate blanks with some exceptions as discussed below. One completed per sampling event and associated laboratory batch	Partial ¹
Standard operating procedures used for sample collection and handling	Standard operating procedures used as listed in Section 6.2 employed for all sampling events and samples collected	Yes
Comparability		
Standard analytical methods used for all analyses	Standard analytical methods used as listed in Section 6.2	Yes
Consistent field conditions, field staff and laboratories	Sampling was conducted by the same field staff member. Standard operating procedures were implemented throughout the works. Field conditions remained the same throughout the works.	Yes
Limits of reporting appropriate and consistent	Limits of reporting were consistent and appropriate	Yes
Completeness		
Soil description and COCs completed and appropriate	All field documentation and COCs were completed appropriately.	Yes
Appropriate documentation	All field documentation was appropriately completed.	Yes

Data Quality Indicator	Results	DQO met?
Satisfactory frequency and result for QC samples	The QC results are considered adequate for the purposes of the investigation	Yes
Data from critical samples	Samples were analysed at locations designed to address the requirements of the RAP such that a suitable validation data set could be established. All critical samples were analysed for appropriate contaminants of concern and the QA/QC assessment confirmed the reliability of this data.	Yes
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria	Analytical methods and limits of recovery were considered appropriate for media and adopted site validation criteria for all soil analytes.	Yes

Notes: 1. See discussion below for notes

Precision

Soil Blind Duplicates (intra laboratory)

The rate of blind duplicate sampling and analysis for soils was 2 blind duplicates per 25 primary samples for heavy metals (8%), 2 blind duplicates per 16 primary samples for TRH (12.5%), 2 blind duplicates per 16 primary samples for BTEX (12.5%), 2 blind duplicates per 29 samples for PAHs (6.9%), 2 blind duplicates per 17 primary samples for PCBs (11.7%), 2 blind duplicates per 17 primary samples for OCPs (11.7%), and 2 blind duplicates per 10 primary samples for asbestos (20%). As such, the frequency of duplicate sample analysis for all key contaminants of concern met/exceeded the nominated 5 % frequency.

Chemical analytical data RPDs were generally within the DQI with the exception of:

- Heavy metal concentrations in samples:
 - HA03_0-0.1 (JBS&G 2021) and QC01 (JBS&G 2021), with a RPDs ranging between 51% - 100%;
 - HA07_0.0-0.1 and QC01 (Current, 2022), with a singular RPDs exceedance of 71% for copper
- PAH compounds concentrations for sample HA03_0-0.1 (JBS&G 2021) and QC01 (JBS&G 2021), with a RPDs ranging between 59% - 95%;

High RPDs in the blind duplicates can be expected when analyte concentrations are close to the LOR and/or when materials are heterogeneous. On this basis, the data has generally met the DQIs for intra-laboratory duplicates, and the elevated RPDs are considered a result of field/soil characteristics and not laboratory precision errors. As such the elevated RPDs do not affect the overall reliability or precision of the data.

Soil Split Duplicates (inter laboratory)

The rate of split duplicate sampling and analysis for soils was 2 blind duplicates per 25 primary samples for heavy metals (8%), 2 blind duplicates per 16 primary samples for TRH (12.5%), 2 blind duplicates per 16 primary samples for BTEX (12.5%), 2 blind duplicates per 29 samples for PAHs (6.9%), 2 blind duplicates per 17 primary samples for PCBs (11.7%), 2 blind duplicates per 17 primary samples for OCPs (11.7%), and 2 blind duplicates per 10 primary samples for asbestos (20%). As such, the frequency of duplicate sample analysis for all key contaminants of concern met/exceeded the nominated 5 % frequency.

Chemical analytical data RPDs were generally within the DQI with the exception of:

- Heavy metal concentrations in samples:
 - HA03_0-0.1 (JBS&G 2021) and QA01 (JBS&G 2021), with a singular RPDs exceedance of 82% for cadmium
 - HA07_0.0-0.1 and QA01 (Current, 2022), with a singular RPDs exceedance of 113% for copper
- TPH and TRH fractions concentrations in sample HA07_0.0-0.1 and QA01 (Current, 2022), with RPDs ranging between 71% - 126%.
- PAH compounds concentrations in samples:
 - HA03_0-0.1 (JBS&G 2021) and QA01 (JBS&G 2021), with a singular RPDs exceedance of 67% for Benzo(a)pyrene
 - HA07_0.0-0.1 and QA01 (Current, 2022), with a RPDs ranging between 82% - 126%.

High RPDs in the blind duplicates can be expected when analyte concentrations are close to the LOR and/or when materials are heterogeneous. On this basis, the data has generally met the DQIs for intra-laboratory duplicates and the elevated RPDs are considered a result of field/soil characteristics and not laboratory precision errors. As such the elevated RPDs do not affect the overall reliability or precision of the data.

Laboratory Duplicates

The laboratory completed a total of 21 laboratory duplicate soil samples, within the JBS&G acceptance criteria of 1 in 20 samples. Laboratory duplicates analysed had RPDs within the JBS&G DQI of 0%-50%.

Accuracy

Laboratory Control Samples

A total of 19 soil laboratory control samples (LCS) and 4 water LCS were undertaken, meeting the DQIs. All LCS were reported as having recoveries within the JBS&G acceptable range of 70-130%.

Surrogate Spikes

Surrogate spikes were conducted in conjunction with organic contaminant analysis of all samples. All surrogate spikes reported recoveries were within the JBS&G acceptable range of 70%-130%, with the exception of the following:

Lab Report Number	Sample Code	Field ID	Compound	Recovery %
Soil				
264732	BLANK264732		Surrogate p-Terphenyl-d14	132
857006	S22-Ja22066	HA05_0.2-0.3	Dibutylchlorendate (surr.)	59
857006	S22-Ja22066	HA05_0.2-0.3	4-Bromofluorobenzene (surr.)	65
857006	S22-Ja22071	HA09_0.0-0.1	Dibutylchlorendate (surr.)	59
857006	S22-Ja22071	HA09_0.0-0.1	2-Fluorobiphenyl (surr.)	69
857006	S22-Ja22074	HA11_0.0-0.1	Dibutylchlorendate (surr.)	63
857006	S22-Ja22078	HA14_0.2-0.3	Dibutylchlorendate (surr.)	69
857006	S22-Ja22079	QC01	Dibutylchlorendate (surr.)	55
Water				
781709	S21-Ma36673	RINSATE	p-Terphenyl-d14 (surr.)	63

The surrogate spike recoveries outside of the target range are not considered to affect the overall reliability of the data set as concentrations in validation samples were close to or below the laboratory's LOR and/or within the laboratories NATA accredited limits (50%-150%).

Matrix Spikes

All matrix spikes reported recoveries within the JBS&G acceptable range of 70% – 130%.

Representativeness

Sampling appropriate for media and analytes

All sampling works completed during the investigation were conducted in accordance with JBS&G standard operating procedures. Sample locations were undertaken for the purposes of visual and/or olfactory assessment of the in situ fill/soil conditions. Samples collected for analysis were considered appropriate for the identified COPC. Furthermore, the assessment activities allow for the collection of representative bulk samples for leachate testing, replicating the process which will occur onsite during site development activities.

All PIDs used throughout the field works were factory calibrated by Air-Met Scientific Pty Ltd. Air-Met calibration certificates and daily field check calibration sheets are presented in **Appendix J**.

All samples were collected wearing a new pair of disposable nitrile gloves. Where possible, disturbance of the sample was minimised during placement within the laboratory supplied sample container and during shipment to reduce the potential for loss of VOCs within the samples.

Holding Times

Copies of Sample Receipt Notes (SRNs) are included in relevant sections of the report (**Appendix M**) and sample extraction/analysis dates were reported in each laboratory report. All soil analyses for COPCs were undertaken within appropriate holding times for the respective analytes.

Trip Spike

Two trip spikes were submitted with characterisation samples collected during the assessment, one per lab batch meeting the DQI. Of the two, one representative trip spike was analysed as part of laboratory batch 781709, with all recoveries within the JBS&G acceptable limit of 70%-130%.

For lab batch 857006 the Trip Spike accompanied characterisation samples throughout the sampling event, as per the requirements of the assessment. However, it is noted this Trip Spike was not submitted for analysis. All standard JBS&G field sampling practices were completed as per **Section 6.2** during this sampling event, with collected samples immediately transferred to a chilled esky for transport to the laboratory. As such, all measures have been taken to eliminate the potential for loss of volatile contaminants by appropriately experienced field personnel.

A review of the SRA documentation provided by the laboratory confirmed samples for lab batch 857006 were received with an 'attempt to chill' evident and a low recorded sample temperature, not considered conducive to the potential for significant loss of volatile compounds. It is noted COPC at the site primarily comprise semi to non-volatile compounds and as such the absence of analytical Trip Spike data for this single lab batch is considered to not affect the reliability of the dataset.

Storage Blank

Two Storage Blanks were submitted with characterisation samples collected during the assessment, one per lab batch meeting the DQI. Of the two, one representative Storage Blank was analysed as part of laboratory batch 781709, with all recoveries of BTEX compounds below the laboratory's LOR.

For lab batch 857006 the storage blank accompanied characterisation samples throughout the sampling event, as per the requirements of the assessment. However, it is noted this Storage Blank was not submitted for analysis. All standard JBS&G field sampling practices were completed as per **Section 6.2** during this sampling event, with collected samples immediately transferred to a chilled esky for transport to the laboratory. As such, all measures were taken to eliminate the potential for loss of volatile contaminants by appropriately experienced field personnel.

A review of the SRA documentation provided by the laboratory confirmed samples for lab batch 857006 were received with an 'attempt to chill' evident and a low recorded sample temperature, not considered conducive to the potential for volatile compounds migration. It is noted COPC at the site primarily comprise semi to non-volatile compounds and as such the absence of analytical Storage Blank data for this single lab batch is considered to not affect the reliability of the dataset.

Rinsate Blank

Two rinsate samples were prepared during each sampling event, one per lab batch meeting the DQI, with all standard JBS&G field sampling and decontamination practices as outlined in **Section 6.2** completed. Of the two, one representative Rinsate Blank was analysed as part of laboratory batch 781709 for key contaminants of concern. Noting all contaminant concentrations were below the laboratory LOR.

For lab batch 857006, The Rinsate Blank was not submitted for analysis. During this sampling event, no deviation in methodology from previous sampling events (laboratory batch 781709) took place. As such, all measures were taken to eliminate the potential for cross contamination by the appropriately experienced field personnel.

This non-conformity and absence of analytical rinsate data for this single lab batch is not considered to affect the reliability of the dataset given the nature of the site's condition and the lack of sporadic or unexplained results. In summary, based on the results of the assessment, sufficient data has been collected to confidently demonstrate adequate decontamination procedures have been implemented.

Decontamination Comparability

All non-single use field equipment was decontaminated as per the procedure identified in **Section 6.2.5**.

Experienced JBS&G personnel undertook all sampling in accordance with standard JBS&G sampling methods as nominated **Section 6.2**, with field records notes pertaining to implemented decontamination procedures are presented following in **Appendix J**.

The laboratory LORs are consistent and are considered appropriate.

Comparability

Eurofins, the primary laboratory, and Envirolab, the secondary laboratory were NATA accredited for all analytical methods used. The laboratories used similar analytical methods and the analytical data was considered to be comparable between the laboratories as indicated by the results of inter-laboratory duplicate analyses. Where different LORs were adopted by the laboratories, the primary laboratory typically had a lower LOR than the secondary laboratory, and as such, consideration of the data set was not impacted.

Furthermore, the samples collected for assessment purposes are considered comparable as all samples were collected by experienced JBS&G personnel in accordance with standard JBS&G sampling methods.

Completeness

Documentation

All laboratory documentation is complete and correct. Chain of custody documentation is provided with laboratory reports in **Appendix M**.

Frequency for QC Samples

QC sample frequency DQOs were achieved for all analyses including heavy metals, non-metallic inorganics, TRH, BTEX, PAHs, PCBs, OCPs and asbestos, therefore the data set is complete and reliable.

Assessment of QA/QC

The field sampling and handling procedures produced QA/QC results which indicate that the collected soil analytical data are of an acceptable quality and suitable for use which respect to characterisation of the assessment area.

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

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

Appendix L Statistical Evaluation

	A	B	C	D	E	F	G	H	I	J	K	L
1	Normal UCL Statistics for Data Sets with Non-Detects											
2	B(a)P											
3	User Selected Options											
4	Date/Time of Computation			27/01/2022 10:30:03 PM								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10	BaP											
11												
12	General Statistics											
13	Total Number of Observations			12	Number of Distinct Observations			5				
14	Number of Detects			6	Number of Non-Detects			6				
15	Number of Distinct Detects			5	Number of Distinct Non-Detects			1				
16	Minimum Detect			0.4	Minimum Non-Detect			0.5				
17	Maximum Detect			1.6	Maximum Non-Detect			0.5				
18	Variance Detects			0.203	Percent Non-Detects			50%				
19	Mean Detects			0.75	SD Detects			0.451				
20	Median Detects			0.55	CV Detects			0.601				
21	Skewness Detects			1.771	Kurtosis Detects			3.022				
22	Mean of Logged Detects			-0.408	SD of Logged Detects			0.509				
23												
24	Normal GOF Test on Detects Only											
25	Shapiro Wilk Test Statistic			0.785	Shapiro Wilk GOF Test							
26	5% Shapiro Wilk Critical Value			0.788	Detected Data Not Normal at 5% Significance Level							
27	Lilliefors Test Statistic			0.297	Lilliefors GOF Test							
28	5% Lilliefors Critical Value			0.362	Detected Data appear Normal at 5% Significance Level							
29	Detected Data appear Approximate Normal at 5% Significance Level											
30												
31	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
32	Mean		0.575	Standard Error of Mean				0.107				
33	SD		0.339	95% KM (BCA) UCL				0.817				
34	95% KM (t) UCL		0.768	95% KM (Percentile Bootstrap) UCL				0.783				
35	95% KM (z) UCL		0.752	95% KM Bootstrap t UCL				1.159				
36	90% KM Chebyshev UCL		0.897	95% KM Chebyshev UCL				1.043				
37	97.5% KM Chebyshev UCL		1.245	99% KM Chebyshev UCL				1.643				
38												
39	DL/2 Statistics											
40	DL/2 Normal			DL/2 Log-Transformed								
41	Mean in Original Scale		0.5	Mean in Log Scale				-0.897				
42	SD in Original Scale		0.401	SD in Log Scale				0.615				
43	95% t UCL (Assumes normality)		0.708	95% H-Stat UCL				0.754				
44	DL/2 is not a recommended method, provided for comparisons and historical reasons											
45												
46	Suggested UCL to Use											
47	95% KM (t) UCL		0.768	95% KM (Percentile Bootstrap) UCL				0.783				
48												
49	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
50	Recommendations are based upon data size, data distribution, and skewness.											
51	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
52	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
53												

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for Uncensored Full Data Sets											
2	ZINC											
3	User Selected Options											
4	Date/Time of Computation			28/01/2022 12:09:47 PM								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10												
11	Zinc											
12												
13	General Statistics											
14	Total Number of Observations				9		Number of Distinct Observations				8	
15							Number of Missing Observations				0	
16	Minimum				6.2		Mean				244.8	
17	Maximum				1400		Median				89	
18	SD				439.3		Std. Error of Mean				146.4	
19	Coefficient of Variation				1.795		Skewness				2.843	
20												
21	Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use											
22	guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.											
23	For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).											
24	Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.0											
25												
26	Normal GOF Test											
27	Shapiro Wilk Test Statistic				0.541		Shapiro Wilk GOF Test					
28	5% Shapiro Wilk Critical Value				0.829		Data Not Normal at 5% Significance Level					
29	Lilliefors Test Statistic				0.43		Lilliefors GOF Test					
30	5% Lilliefors Critical Value				0.295		Data Not Normal at 5% Significance Level					
31	Data Not Normal at 5% Significance Level											
32												
33	Assuming Normal Distribution											
34	95% Normal UCL					95% UCLs (Adjusted for Skewness)						
35	95% Student's-t UCL				517.1		95% Adjusted-CLT UCL (Chen-1995)				634	
36							95% Modified-t UCL (Johnson-1978)				540.2	
37												
38	Gamma GOF Test											
39	A-D Test Statistic				0.614		Anderson-Darling Gamma GOF Test					
40	5% A-D Critical Value				0.761		Detected data appear Gamma Distributed at 5% Significance Level					
41	K-S Test Statistic				0.281		Kolmogrov-Smirnoff Gamma GOF Test					
42	5% K-S Critical Value				0.292		Detected data appear Gamma Distributed at 5% Significance Level					
43	Detected data appear Gamma Distributed at 5% Significance Level											
44												
45	Gamma Statistics											
46	k hat (MLE)				0.631		k star (bias corrected MLE)				0.495	
47	Theta hat (MLE)				387.9		Theta star (bias corrected MLE)				494.8	
48	nu hat (MLE)				11.36		nu star (bias corrected)				8.906	
49	MLE Mean (bias corrected)				244.8		MLE Sd (bias corrected)				348	
50						Approximate Chi Square Value (0.05)				3.27		
51	Adjusted Level of Significance				0.0231		Adjusted Chi Square Value				2.592	
52												
53	Assuming Gamma Distribution											
54	95% Approximate Gamma UCL (use when n>=50)				666.7		95% Adjusted Gamma UCL (use when n<50)				841	

	A	B	C	D	E	F	G	H	I	J	K	L
55												
56	Lognormal GOF Test											
57	Shapiro Wilk Test Statistic					0.954	Shapiro Wilk Lognormal GOF Test					
58	5% Shapiro Wilk Critical Value					0.829	Data appear Lognormal at 5% Significance Level					
59	Lilliefors Test Statistic					0.192	Lilliefors Lognormal GOF Test					
60	5% Lilliefors Critical Value					0.295	Data appear Lognormal at 5% Significance Level					
61	Data appear Lognormal at 5% Significance Level											
62												
63	Lognormal Statistics											
64	Minimum of Logged Data					1.825	Mean of logged Data					4.528
65	Maximum of Logged Data					7.244	SD of logged Data					1.491
66												
67	Assuming Lognormal Distribution											
68	95% H-UCL					2889	90% Chebyshev (MVUE) UCL					582.7
69	95% Chebyshev (MVUE) UCL					742.8	97.5% Chebyshev (MVUE) UCL					964.9
70	99% Chebyshev (MVUE) UCL					1401						
71												
72	Nonparametric Distribution Free UCL Statistics											
73	Data appear to follow a Discernible Distribution at 5% Significance Level											
74												
75	Nonparametric Distribution Free UCLs											
76	95% CLT UCL					485.7	95% Jackknife UCL					517.1
77	95% Standard Bootstrap UCL					478.5	95% Bootstrap-t UCL					1372
78	95% Hall's Bootstrap UCL					1481	95% Percentile Bootstrap UCL					526.4
79	95% BCA Bootstrap UCL					660.1						
80	90% Chebyshev(Mean, Sd) UCL					684.1	95% Chebyshev(Mean, Sd) UCL					883.1
81	97.5% Chebyshev(Mean, Sd) UCL					1159	99% Chebyshev(Mean, Sd) UCL					1702
82												
83	Suggested UCL to Use											
84	95% Adjusted Gamma UCL					841						
85												
86	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
87	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
88	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
89	For additional insight the user may want to consult a statistician.											
90												

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