Altis Property Group & Frasers Property
Mamre Road, Kemps Creek
Environmental Site Assessment

657-703,707-711, 707A,
713-755 & 757-769 Mamre Road
Kemps Creek, NSW 2178

27 February 2019

54963/120704

JBS&G Australia Pty Ltd

www.jbsg.com.au

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Abbreviations

Term	Definition
AEC	Area of Environmental Concern
ACM	Asbestos Containing Material
AHD	Australian Height Datum
Altis	Altis Property Group
ANZAST	Australian and New Zealand and Australian State and Territory Governments
ASS	Acid Sulfate Soils
AST	Aboveground Storage Tank
bgl	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CEC	Cation Exchange Capacity
CLM Act	Contaminated Land Management Act
COC	Chain of Custody
COPC	Contaminants of Potential Concern
Council	Penrith City Council
CSM	Conceptual Site Model
DA	Development application
DIPNR	Deparment of Infrastructure, Planing and Natural Resources
DLWC	Department of Land and Water Conservation
DMR	Department of Mineral Resources
DO	Dissolved Oxygen
DP	Deposited Plan
DPI	Department of Primary Industry
DQI	Data Quality Indicator
DQO	Data Quality Objective
EC	Electrical Conductivity
Eh	Redox Potential
EIL	Ecological Investigation Levels
EIS	Environmental Impact Statement
Envirolab	Envirolab Services Pty Ltd
EPA	New South Wales Environment Protection Authority
ESA	Environmental Site Assessment
ESL	Ecological Screening Levels
Eurofins	Eurofins MGT
Frasers	Frasers Property
GIL	Groundwater Investigation Levels
GME	Groundwater Monitoring Event
GPS	Global Positioning Unit
Ha	Hectare
HIL	Health Investigation Levels
HSL	Health Screening Levels
JBS&G	JBS&G Australia Pty Ltd
LCS	Laboratory Control Sample
LEP	Local Environmental Plan
LNAPL	Light Non-Aqueous Phase Liquid
LOR	Limit of Reporting
NAPL	Non-Aqueous Phase Liquid
NATA	National Association of Testing Authorities
NSW	New South Wales
OCP	Organochlorine Pesticides
OEH	Office of Environment and Heritage
PAH	Polycyclic Aromatic Hydrocarbons
PARCCS	Precision, Accuracy, Representativeness, Comparability, Completeness and Sensitivity
PASS	Potential Acid Sulfate Soils
PCB	Polychlorinated Biphenyls
PCR	Primary Contact Recreation
PFAS	Per and Polyfluoroalkyl Substances

Term	Definition
PID	Photo-ionisation Detector
POEO Act	Protection of the Environment Operations Act
ppm	Parts Per Million
PSH	Phase-separated Hydrocarbon
PSI	Preliminary Site Investigation
PSM	Pells Sullivan Meynink
QA/QC	Quality Assurance / Quality Control
RL	Relative Level
RPD	Relative Percent Difference
SAQP	Sampling, Analysis and Quality Plan
SSDA	State Significant Development Application
SWL	Standing Water Level
TCLP	Toxicity Characteristic Leaching Procedure
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) has been engaged by Altis Property Group (Altis) and Frasers Property (Frasers) (the clients) for the provision of environmental consultancy services associated with the proposed Kemps Creek Warehouse and Logistic Hub. The proposed development is located on the western side of Mamre Road, Kemps Creek, NSW (the site) as shown in **Figure 1**. The assessment area comprises five legal properties, as shown on **Figure 2,** and occupies a total footprint of approximately 116.3 hectares (ha). The site is legally identified as Lot 34 DP1118173, Lot X DP421633, Lot 1 DP1018318, Lot Y DP 421633 and Lot 22 DP258414.

A preliminary site investigation (PSI) has previously been completed on the site, as documented by JBS&G (2018[1]). The PSI did not identify the potential for gross and/or widespread contamination at the site which would preclude it from commercial/industrial landuse. JBS&G (2018) recommended a targeted intrusive investigation of identified areas of environmental concern (AECs) to better quantify potential risks such that any requirements for management may be appropriately addressed.

The clients require that an environmental site assessment (ESA) is completed at the site in accordance with the recommendations of the PSI (JBS&G 2018), targeting identified AECs. The ESA is documented herein and has been completed in accordance with guidelines made or approved by the New South Wales (NSW) Environment Protection Authority (EPA) and relevant Australian Standards.

- Desktop assessment and detailed inspection of the site has not identified the potential for gross and/or widespread contamination to exist at the site. Potential for localised impacts was identified, consistent with the historical use of the site for a combination of commercial (Mamre Produce) agricultural, recreational and rural residential purposes;
- Potential contamination impacts were assessed by advancement of 48 intrusive investigation locations, field screening of site media and subsequent laboratory analysis for COPCs identified in **Section 5.1**. No COPCs were identified within site media samples analysed which exceeded relevant site screening assessment criteria for commercial/industrial land use site suitability;
- No background contamination, chemical mixtures or the potential risk of migration of contaminants from the site has been identified;
- Potential aesthetic issues were identified at two locations within the site, as detailed in **Section 10.4**. No trigger for further assessment of aesthetics was identified during the site investigation;
- A fragment of bonded ACM was identified in a single location (TP01). With respect to the concentration of ACM within the broader soil matrix, this occurrence does not comprise an exceedance of site suitability criteria, but will require management during site development under the *Work Health and Safety Regulation 2017.*
- From a contaminated land perspective, the site is considered suitable for the proposed development.

A construction environmental management plan (CEMP), including an unexpected finds protocol, should be developed for the site to ensure that typical site management strategies are implemented and no contamination is introduced to the site during redevelopment.

[1] *Preliminary Site Investigation – 657-703, 707-711, 707A, 713-755 & 757-769 Mamre Road Kemps Creek, NSW*. JBS&G Australia Pty Ltd Reference 52785/107746 (Rev 1) dated 5 July 2018 (JBS&G 2018).

1. Introduction

1.1 Introduction and Background

JBS&G Australia Pty Ltd (JBS&G) has been engaged by Altis Property Group (Altis) and Frasers Property (Frasers) (the clients) for the provision of environmental consultancy services associated with the proposed Kemps Creek Warehouse and Logistic Hub. The proposed development is located on the western side of Mamre Road, Kemps Creek, NSW (the site) as shown in **Figure 1**. The assessment area comprises five legal properties, as shown on **Figure 2,** and occupies a total footprint of approximately 116.3 hectares (ha). The site is legally identified as Lot 34 DP1118173, Lot X DP421633, Lot 1 DP1018318, Lot Y DP 421633 and Lot 22 DP258414.

A preliminary site investigation (PSI) has previously been completed on the site, as documented by JBS&G (2017[2]). The PSI did not identify the potential for gross and/or widespread contamination at the site which would preclude it from commercial/industrial landuse. JBS&G (2017) recommended a targeted intrusive investigation of the identified areas of environmental concern (AECs) to better quantify potential risks such that any requirements for management may be appropriately addressed, as well as a detailed site inspection to identify other potential AECs.

It is understood that Altis and Frasers intend to submit a State Significant Development Application (SSDA) for the proposed development. The Department of Planning and Environment (DPE) have reviewed a draft Environmental Impact Statement (EIS) for the project, which incorporated the PSI (JBS&G 2018), and have requested additional information per clause 54(1) of the *Environmental Planning and Assessment Regulation 2000*.

The clients require that an environmental site assessment (ESA) is completed at the site in accordance with the recommendations of the PSI (JBS&G 2017), targeting identified AECs and conducting a detailed inspection across the site. The ESA is documented herein and has been completed in accordance with guidelines made or approved by the New South Wales (NSW) Environment Protection Authority (EPA) and relevant Australian Standards.

1.2 Objective

The objective of the ESA is to characterise potential site contamination such that the suitability of the site for the proposed land uses can be determined, and to make recommendations regarding appropriate management of impacts if identified.

1.3 Scope of Work

The following scope of works was based on the recommendations of the PSI and undertaken to meet the objective of the ESA:

- A desktop review of available site history information, including:
  - Review of environmental assessment reports (including JBS&G 2018), relating to the site and surrounding area, as provided by the clients or hosted on readily accessible planning websites;
  - Council Planning certificates obtained for the site;
  - Historical and current land title records;
  - Historical aerial photographs obtained from the Department of Lands;
  - Publicly available heritage records held by the Department of Planning and Environment and Council, where readily available;

[2] *Preliminary Site Investigation – 657-703, 707-711, 707A, 713-755 & 757-769 Mamre Road Kemps Creek, NSW*. JBS&G Australia Pty Ltd Reference 52785/107746 (Rev 1) 2017, updated 5 July 2018 (JBS&G 2017).

- Records of environmental incidents, former environmental licences, or contaminated land notices or notifications, as held by the EPA;
- Licensed groundwater bores present within a 1.5 km radius of the site available on the online NSW Natural Resources Atlas.

- Review of the environmental setting, including a review of topography, geology, hydrology, hydrogeology and meteorology of the site and surrounding areas;
- A detailed site inspection on all properties to identify potential AECs and confirm desktop findings;
- Development and documentation of a conceptual site model (CSM) based on the available information;
- Development and documentation of the sampling, analytical and quality plan (SAQP), with data quality objectives (DQOs) for the ESA in accordance with relevant EPA guidelines;
- Execution of a field investigation program comprising sampling of soil and groundwater at relevant locations across the site;
- Analysis of selected samples for a range of COPCs;
- Comparison of collected data against regulator published / endorsed investigation criteria to facilitate an assessment of land use suitability; and
- Preparation of this ESA report in general accordance with relevant EPA guidelines, and incorporating the findings of the PSI.

2. Site Condition and Surrounding Environment

2.1 Site Identification

The location of the site is shown on **Figure 1**. The layout of the site and approximate site boundary are shown on **Figure 2**. The site details are summarised in **Table 2.1**.

Table 2.1: Summary Site Details

Site Lot Numbers	Lot 34 DP1118173 Lot X DP421633 Lot 1 DP1018318 Lot Y DP 421633 Lot 22 DP258414
Site Street Address	657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW
Site Area	The approximate site area is 116.3 ha, as shown on **Figure 2** and **Figure 3**. Approximate areas of each property are: Lot 34 – 25.8 ha; Lot X – 19.2 ha; Lot 1 – 28.1 ha; Lot Y – 17.0 ha; and Lot 22 – 26.3 ha.
Local Government Authority	Penrith City Council
Approximate Geographic Coordinates (MGA 56)	Easting: 293918 Northing: 6253999
Zoning	SP2 Infrastructure – Classified Road (eastern portion of 657-703 Mamre Road, adjacent to Mamre Road) E2 – Environmental Conservation (western portion of 757-769 Mamre Road, and 707A Mamre Road, adjacent to South Creek) RU2 – Rural Landscape (remaining areas of the site)
Current Land Uses	Residential/agricultural apart from the portion of Lot X currently operating as a rural produce/animal supplies sales business.
Proposed Land Uses	Commercial/Industrial development

2.2 Site Description

A detailed site inspection of the site was conducted on 1 February 2019 by Jessica Staehli, one of JBS&G's experienced environmental scientists. Detailed observations of each lot are described below, with a photographic log of the site presented in **Appendix A**. Notable site landforms are shown on **Figure 3** and site features on **Figure 4**.

2.2.1 657-703 Mamre Road (Lot 34 DP1118173)

The land parcel comprises a triangular lot of approximately 25.8 ha. The land parcel was bound to the north, south and east by the high-pressure gas pipeline, Bakers Lane and Mamre Road, respectively. The property is currently used for agricultural and residential purposes.

Ground surfaces within the land parcel sloped from the north-east to the south-west. Drainage lines were observed to flow downwards from the smaller corrugated iron shed in the eastern portion of the site in a south-western direction to the central portion of the southern boundary of the property. The ground surface gently undulated with an overall upward grade from the central-portion of the southern boundary to the western site corner (through the tree cover).

The vast majority of the property consisted of well vegetated cattle grazing paddocks. The land parcel was predominantly grass covered with scattered patches of bush and trees present in the western portion. A concrete driveway was present connecting Mamre road to the main residence and sheds. The following structures were observed on the property, situated within the southeast portion:

- One main residence located west of Mamre Road, constructed from red brick with a terracotta roof (**Photograph 1**).

- One large corrugated metal implement storage shed with a sealed concrete floor to the west of the residence holding old machinery, two cars, and general household waste (plastic, cardboard, empty feed drums, wood, bricks, corrugated metal sheets and wooden fencing) (**Photograph 2**).
- One smaller corrugated iron shed to the north of the main shed storing a disused woodfired oven, hand tools, empty paint tins, disused furniture and disused agricultural tools. The shed floor was covered by a concrete slab, in generally poor condition (**Photograph 3**).

An underground structure, possibly comprising a septic tank, was observed to the east of the main residence. A short section of pipe, approximately 1 m in length, was present on the ground surface west of the iron shed which may potentially comprise asbestos containing material (ACM) (**Photograph 4**). An unsealed access road connected the main residence and sheds to the central and western portion of the land parcel with fencing generally dividing the site into paddocks. Two smaller corrugated iron sheds and a cattle yard were located south-west of the main residence, including an unsealed animal shelter and a disused unsealed feed shed (**Photographs 5 and 6**). Building materials including wooden stakes, pallets and corrugated iron sheets, as well as a washing machine, surrounded the two sheds (**Photographs 7 and 8**). An empty shipping container was also located to the west of the sheds (**Photograph 9**).

An agricultural dam was present in the central portion of the property which was partially filled with turbid brown water at the time of the inspection. No odours or films were observed on the retained surface water. Inspection of exposed soils on the embankment indicated that they comprised red-brown clay, consistent with natural surficial soils observed in the surrounding site areas (**Photograph 10**).

The western portion, including westernmost dam, and the north-eastern corner of the site (**Photographs 11 and 12**) were not able to be inspected in detail due to the presence of vegetation. A section of the ground surface abutting Bakers Lane consisted of an area of shorter grass surrounded by taller and denser vegetation (**Photograph 13**).

No storage of bulk chemicals or wastes was observed at the site. The site was generally absent of odours, staining or the presence of hazardous building materials, with the exception of the potential ACM pipe discussed above.

2.2.2 707A Mamre Road (Lot 1 DP1018318)

The property comprises an irregularly shaped 28.1 ha parcel of land. The land parcel was bordered to the north, east, south and west by Bakers Lane, 707-711 Mamre Road (Lot X DP421633), 757-769 Mamre Road (Lot 22 DP258414), and the banks of South Creek, respectively.

The landforms of the property exhibited an overall downward grade from east to west, towards South Creek. The eastern portion of the property graded from southeast to northwest, with the northern portion of the property comprising the local drainage channel fed by the surrounding properties (Lot 34 north and Lot X east).

The majority of the property consisted of fenced paddocks containing overgrown healthy vegetation with scattered patches of bush and trees. One unpaved vehicle track crossed the property area in a south-western direction.

The dam observed within aerial imagery (**Section 3.2**) in the northern portion of the site bordering Bakers Lane was unable to be accessed due to a lack of gate in the fence line, however, dense vegetation was growing through the dam and a raised embankment was visible from the fence line (**Photograph 14**).

A sealed asphalt driveway connected Bakers Lane to the main buildings, with an asphalt carpark area (**Photographs 15 and 16**). The carpark connected to a sealed paved area with a roundabout and

driveways leading to the main residences. The following structures were observed on the property, situated within the north-eastern portion of the property:

- Two main residences located south of Bakers Lane, both constructed from yellow brick with a terracotta roof with a paved backyard area (**Photographs 17 and 18**).
- A corrugated metal shelter with a concrete floor located between the two residences and contained stored furniture, firewood and pallets (**Photograph 19**).
- One large and substantially dilapidated marquee structure with a sealed concrete floor to the north-east of the main residences holding furniture, machinery and appliances (microwaves and washing machines) (**Photographs 20 and 21**).
- One large corrugated metal implement shed to the south-west of the residences, the interior was unable to be accessed (**Photograph 22**).
- One small corrugated metal dog kennel to the east of the residences with solar panels installed directly west of the kennel and main residences.
- One small corrugated metal animal shelter, containing overgrown vegetation (**Photograph 23**).
- Numerous wooden structures appearing to be for recreational use (outdoor games) were observed in the south-western portion of the site (**Photographs 24 and 25**).

In general, storage of bulk liquids, chemicals or wastes was not observed on the property. It is noted that five drums labelled 'Fullatak SC1000 Red' were present on the property (**Photographs 26 and 27**). The drums were in good condition and appeared to be absent the original contents. No staining in the surrounding soils/vegetation or odours from the drums were observed. Based on the layout of the drums within the relevant site area, it is presumed they comprised part of an obstacle course or similar and were not imported to the site with the original contents.

The property was generally absent of odours, staining or the presence of hazardous building materials. A small area (<5 m^2) household rubbish and bonfire remnants were present north of the main residences (**Photograph 28**). The area was cleared of vegetation and contained burnt household rubbish, embers, scrap metal and building materials. Inspection of the ground surfaces indicated that the rubbish and bonfire remnants were limited to ground surfaces, and did not extend do underlying soils.

2.2.3 713-755 Mamre Road (Lot Y DP421633)

The property comprises an approximately rectangular lot of 17.0 ha which is bordered to the north and west by 707-711 Mamre Road (Lot X DP421633). Mamre Road borders the land parcel to the east and 757-769 Mamre Road (Lot 22 DP258414) borders the land parcel to the south.

The property graded downward from west to east with a local topographical minimum observed within the northwest corner. The three small dams observed within aerial imagery (**Section 3.2**) contained overgrown vegetation and were unable to be closely accessed due to dense vegetation cover (**Photographs 29 and 30**). The dam walls appeared to be raised indicating potential for cut and fill in these areas.

The land parcel was largely covered by healthy overgrown grasses and vegetation. The land parcel appeared to gently slope downwards in a western direction from Mamre Road. The property contained one unsealed track presumed to have been formed by previous vehicle use. Patches of bush were observed in the western portion and trees were scattered through the western and central portions of the land parcel.

No buildings were observed within the land parcel. An area of increased vegetation growth was observed in the western portion of the property (**Photograph 31**), indicating a potential change in soil environment.

No dangerous goods or indicators of current or former storage of bulk chemicals or waste were observed within the land parcel at the time of the site inspection, noting inspection of surface soils was limited due to overgrown vegetation.

2.2.4 757-769 Mamre Road (Lot 22 DP258414)

The property comprises a roughly rectangular lot of approximately 26.3 ha. The northern boundary of the land parcel is bordered by 707A Mamre Road (Lot 1 DP1018318), 707-711 Mamre Road (Lot X DP421633) and 713-755 Mamre Road (Lot Y DP258414). Mamre Road borders the land parcel to the east and South Creek is located along the western boundary. A private property adjoins the entire southern property boundary.

The majority of the property consisted of fenced paddocks for cattle grazing with varying levels of vegetation. Ground surfaces within the land parcel gently sloped downward from the east to the west, towards South Creek. Trees were located along the western boundary facing the adjoining South Creek. No dams were observed on the site.

A sealed concrete driveway connected Mamre Road to the main residence and the secondary house, with concrete areas to the west of the house surrounding the main shed. An unsealed driveway containing road base gravels connected Mamre Road to the concrete storage area south of the main residence. The storage area was sealed with asphaltic material. The following structures were observed in the eastern portion of the property:

- One main residence and a secondary smaller residence, both constructed from brown brick with tiled roofs surrounded by healthy grassed areas (**Photographs 34 and 35**).
- One vegetable garden with covered in mesh located to the south of the main residence (**Photograph 36**).
- One wire fenced chicken coop with corrugated metal shelter located west of the main residence (**Photograph 37**).
- One wire fenced goat pasture with an animal shelter made out of a plastic seafood storage shed located north of the chicken coop (**Photograph 38**).
- One large unsealed storage shed with stored building materials (**Photographs 39 and 40**).
- One disused demountable toilet block located south of the storage shed (**Photograph 41**).
- One tin animal shelter to the east of the stockpiled concrete storage area (**Photograph 42**).
- One unsealed corrugated metal implement shed, tool shed, cattle yard and caravan located on the southern border of the site, to the west of the stockpiled concrete area (**Photograph 43**).
- One unsealed corrugated metal machinery shelter located in the south-western portion of the site (**Photograph 44**).
- Abandoned cars, truck and corrugated iron sheets located to the west of the machinery shelter in the western portion of the site (**Photograph 45**).
- Precast concrete units present on the (**Photograph 46 and 47**).

In general, no storage of bulk chemicals or wastes was observed at the property, and the property was generally absent of odours, staining or the presence of hazardous building materials. Stockpiles of building and demolition (B&D) wastes and soil stockpiles are discussed following:

- One small stockpile consisting of grey silty sand fill material containing building materials, scrap metal and wood was observed to the west of the main storage shed in the eastern portion of the site (**Photograph 48**);
- A mound of soil (<30 m^3) which was grass/weed covered was present to the west of the stockpiled concrete area. Cursory inspection of the exposed soils indicated potential building materials (concrete, sandstone and bricks) were present within the soil matrix. No ACM was observed within the exposed soils. (**Photograph 49**).
- An embankment was present to the west of the abandoned cars and truck in the south-western portion of the site with minor gravel inclusions (**Photograph 50**). A stockpile of building materials and vegetation was observed to the west of the embankment in the southwest portion of the site (**Photograph 51**).

2.2.5 707-711 Mamre Road (Lot X DP421633)

The property comprises a battle axe block of approximately 19.5 ha. The land parcel is bound to the north, east, south and west by Bakers Lane, Mamre Road, 757-769 Mamre Road (Lot 22 DP258414) and 707A Mamre Road (Lot 1 DP1018318), respectively. At the time of the inspection the northeast portion of the property was used to store and distribute various pet and livestock supplies (Mamre Produce) (**Photograph 52**). Property access and egress was available through two gravel driveways fronting Bakers Lane (**Photograph 53 and 54**)

The property broadly comprised three separate areas. The northeast portion of the property was used to store and distribute various pet and livestock supplies. The southern and western portions of the property comprised dense feedstock crops and the balance (central portion) of the property housed a dam and some unused vacant/cleared areas of land.

The property contained two separate dams, understood to be recharged exclusively by rainwater infiltration (based on communications with the land occupant, **Section 3.1**). The northern dam was on the western portion of the pet and livestock supplies area, and the central dam within the approximate central portion of the property (**Photograph 55 and 56**). The northern dam was turbid and dark brown, and the central dam was highly turbid and light brown. Neither dam exhibited evidence of contamination such as sheens, odours or discolouration.

The property graded overall downward from east to west. A drainage channel dissected the property, orientated approximately south-north. The channel intersected the dam within the central portion of the property and meandered from the northern portion of the dam to the discharge point from the property, a local minimum in the approximate centre of the northern boundary (**Figure 3**). The topography of the property appeared to have been altered slightly from its predevelopment alignment, presumed to be the result of grading/levelling associated with the construction of observed features (dams, raised roadways and drainage channels). The drainage channel did not contain any surface water at the time of the inspection.

Internal vehicle access roads were present throughout the property. A gravel driveway provided access from Bakers Lane, which continued to the northern dam. The roadway continued around the northern dam as a dirt track, which provided vehicular access to the southern and western crop fields.

The pet and livestock supplies area contained a residence, temporary demountable office and a large agricultural storage shed on the eastern portion, and a green corrugated metal storage shed on the western portion, adjacent to the dam (**Photograph 57-59**). Rainwater storage tanks were present adjacent to both the western storage shed and the residence (**Photograph 60**). The majority of the supplies area was utilised for storage of retail supplies comprising a range of agricultural products (empty intermediate bulk containers, fencing and gating supplies, stock feeders and blue

drums) (**Photograph 60-64**). Additionally, advertisements for straw, hay and mulch were observed on the site entry, though none were observed during the inspection.

The central portion of the property was occupied by grazing cattle at the time of inspection. Stored reclaimed building materials were observed adjacent to the vehicle access roads, typically comprising concrete, bricks and wooden pallets (**Photograph 65 and 66**). ACM was not observed during the inspection.

The southern and western portions of the property were almost entirely occupied by very densely cultivated livestock feed crops (**Photograph 67 and 68**). Inspection from accessible areas (the property boundaries and limited internal footpaths) indicated that the entire area was utilised for crop cultivation, with no evidence surface water, storage of wastes/liquids or site structures observed.

2.3 Surrounding Land Uses

The surrounding land-uses of the site are detailed below.

- North– large service easement immediately north with further rural residential land uses beyond. Erskine Business Park including warehouses, cargo sheds, distribution centres and other industrial land use observed 190 m north-east of the site.
- East – Mamre Road immediately east of the site. Agricultural grazing land observed beyond. Emmaus Retirement and Emmaus Catholic College observed approximately 600 m east of the site.
- South – Agricultural grazing and market garden land uses. Kemps Creek observed approximately 1.2 km south of the site.
- West – South Creek immediately west of the site. Twin Creeks Gold and Country Club and residential land use observed beyond.

2.4 Topography

A topographical survey of the site is provided in **Appendix B**. The site is gently undulates with overall falls from the highest located in close vicinity to the intersection of Bakers Land and Mamre Road (~43 m Australian Height Datum (AHD) in the east to a low point of approximately 28 m AHD in the west adjacent South Creek.

At the time of the site inspection, JBS&G confirmed the site topography to generally agree with the survey provided. An overall downward east to west grade was noted, with local drainage channels and lower slopes converging within the centre of Lot X, southwest boundary of Lot 34 and northern boundary of Lot 1, before meeting South Creek on the western boundary.

2.5 Regional Geology and Soils

A review of regional geology presented on *Penrith 1:100 000 Geological Sheet 9035* (DMR 1991[3]) indicates that the western portion of the site adjacent to South Creek is underlain by the Quaternary Period geological formation, comprising fluvial fine-grained sand, silt and clay. The eastern portion of the site is inferred to be underlain by the Triassic Period Bringelly Shale of the Wianamatta group, comprising shale, carbonaceous claystone, claystone, laminate and fine to medium grained lithic sandstone.

A review of eSPADE[4] indicated that the site soils comprise residual Blacktown soils in the eastern portion of the site and South Creek soils in the western portion of the site. Blacktown soils consist of

[3] *1:100 000 Penrith Geological Map Sheet 9030 Edition 1.* Department of Mineral Resources, Published 1991, DMR 1991

[4] http://www.environment.nsw.gov.au/eSpade2Webapp Department of Environment and Heritage, NSW Government. Accessed 08/02/2019

shallow to moderately deep hard setting mottle texture contrast soils, red and brown podzolic soils on crests, grading to yellow podzolic soils on lower slopes and drainage lines. Limitations include localised seasonal waterlogging, localised water erosion hazard, moderately reactive highly plastic subsoil and localised surface movement potential. Localised salinity, sodicity, low pH and high aluminium toxicity is reported in some Blacktown Residual Soils.

South Creek soils consist of often very deep layered sediments over bedrock or relict soils, structured plastic clays or structured loams in and immediately adjacent to drainage lines, red and yellow podzolic soils with small areas of structured grey clays and yellow solodic soils. The landscape comprises the present active floodplain of many drainage networks of the Cumberland Plain. Limitations include flood risks, seasonal waterlogging and localised permanently high water tables, water erosion hazards and surface movement potential. Discussions with the occupant of Lot X **Section 3.1**) indicated that seasonal soil water logging occurred in lower slopes, consistent with the South Creek soil landscape.

Table 2.2 presents soil/geology conditions reported within a previous geotechnical investigation (PSM 2017[5]). Local soil/geology conditions encountered during the current field works are discussed in **Section 9.1.**

Table 2.2 Encountered Soil/Geology in Lot Y (PSM 2017)

Unit	Top of Unit (m bgl)	Descriptions
Topsoil	0.0	Topsoil: clay with some sand and trace gravels, medium to high plasticity, brown, fine-grained sand, sub-angular gravel up to 5 mm, soft to firm consistency, moist to wet, rootlets and organics observed down to 0.2 m.
Natural Soils	0.1 to 0.2	Clay: high plasticity, reddish brown, firm to stiff, moist; Clayey sand to sandy clay: low to medium plasticity, mottled orange and pale grey, stiff to very stiff, moist; and Gravelly sandy clay: medium to high plasticity, orange and grey, fine to medium grained sand, sub-rounded to sub-angular ironstone gravel up to 30 mm, very stiff, moist.
Bedrock	1.1 to 3.8	Shale: pale grey to dark grey, extremely to highly weathered.

2.6 Salinity

A site salinity assessment (SSA) was completed by JBS&G concurrently with the ESA. Detailed local salinity conditions are documented in JBS&G (2019[6]). Relevant regional salinity conditions are discussed following.

The *Salinity Potential in Western Sydney* map (DIPNR 2002[7]) indicates that the assessment area exists within an area of 'moderate salinity potential' outside of drainage line areas. Areas with this classification exhibit scattered scalding and indicator vegetation, but soil concentrations have not been mapped. Saline areas are identified as potentially existing within these areas.

A review of eSPADE indicated that the eastern portion of the site exists within the Shale Plains Hydrogeological Landscape (HGL) and the western site portion exists within the Mount Vernon HGL. Relevant information from both landscapes is summarised following:

Development may mobilise salts within soils and groundwater if appropriate mitigation and prevention actions are not taken.

[5] *713-755 Mamre Road, Kemps Creek Results of Geotechnical Investigations.* Pells Sullivan Meynink Reference PSM3276-100L Rev 1 dated 4 May 2017 (PSM 2017)

[6] *657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek – Site Salinity Assessment*. JBS&G Australia Pty Ltd reference 54963-120710 dated 27 February 2019 (JBS&G 2019)

[7] *Salinity Potential in Western Sydney*. Department of Infrastructure, Planning and Natural Resources, March 2003, DIPNR 2002;

Shale Plains HGL

- This HGL is characterised by shallow and transient salinity driven by lateral water movement, salt mobilisation and cycling. Low permeability sub-soils restrict downward movement of water and salts present within the upper soil materials can become mobilised and concentrated at the surface. Land salinity is equally prevalent in the lower and upper landscape elements. Salt sites occur in upper change of slopes and within drainage channels;
- The landscape has potentially high levels of salinization with frequent, small areas of heavily affected land. Urban and infrastructure damage occur frequently within this HGL;
- Landscape limitations and hazards on this HGL include salinity, gully erosion and streambank erosion. Urbanisation of this landscape has presented significant salinity and increased development is a major hazard and is likely to further mobilise salts within the soils and groundwater if appropriate mitigation and prevention actions are not taken; and
- Shallow cyclic urban salinity and extensive saline groundwater coupled with low gradients are important features of this landscape.

Mount Vernon HGL

- Small cyclic salt outbreaks occur on change of slope and lower slopes. Some groundwater discharge occurs on floodplains and drainage lines. Salt sites on change of slope are typically seasonal whilst the groundwater discharge sites may exhibit more persistent discharge. Salt sites are sodium chloride dominant;
- The landscape has moderate levels of land salinisation, rivers and streams carry high electrical conductivity (EC) and there is a moderate salt load from this landscape; and
- The limitations and hazards on this landscape include salinity, sheet erosion, gully erosion, streambank erosion and mass movement.

2.7 Acid Sulfate Soils

DLWC (1998), states that acid sulfate soils (ASS) are likely to be located in coastal lowlands up to about 10 m AHD. No risk map for the area encompassing the site was provided as part of the acid sulfate soil risk map series, DLWC (1998), typically indicating that such conditions have not been identified based on regional mapping of geology and soil (as discussed in **Section 2.5**).

A review of accessible data using the SEED tool, hosted by NSW OEH (2019[8]) indicates the area occupied by the site has not been required to be assessed for the presence of ASS based on the outcomes of a preliminary evaluation. A printout of the risk map surrounding the site is presented in **Appendix C**. Such sites are by default characterised as "no known occurrence", being defined as areas where land management activities are not likely to be affected by ASS materials.

Planning certificates presented in the PSI, and included in **Appendix D**, do not identify the site as being subject to any policies relating to ASS.

A review of the geographical and topographical location of the assessment area, in addition to the geological conditions identified at the site has indicated that there is no appreciable risk of acid sulfate soil occurrence in natural residual soils and/or rock at the site. On this basis, there is no further requirement for consideration of ASS conditions and/or management of such during future ground disturbance activities.

[8] *Sharing and Enabling Environmental Data (SEED)*. https://www.seed.nsw.gov.au/ accessed 14 February 2019;

2.8 Hydrology

As discussed in **Section 2.2** the site is predominantly grass covered with the exception of hardstand areas, building footprints and roadways. Soils at the site comprise relatively impermeable clays. As such, rainfall and other surface water is considered likely to migrate from the site via a combination of infiltration into underlying sub-soils and surface runoff into on-site drainage channels. On-site drainage channels are anticipated to discharge into onsite dams or directly to South Creek situated west of the site. South Creek flows from south to north along the western site boundary and ultimately discharges into the Hawkesbury River 25 km northeast of the site.

Creeks and rivers of the hydrogeological landscape within which the site is located (**Section 2.9**) are characterised by high EC with moderate salt load from the surrounding hydrogeological landscape.

2.9 Hydrogeology

A review of eSPADE indicated that the eastern portion of the site exists within the Shale Plains Hydrogeological Landscape (HGL) and the western site portion exists within the Mount Vernon HGL. Relevant information from both landscapes is summarised following:

Shale Plains HGL

- Low permeability sub-soils restrict downward movement of water. Long low colluvial/alluvial foot slopes and plains feature frequently, with ponding on plains often present;
- Water primarily moves laterally through shale layers, and vertically through interbedded sandstone and sandstone fracturing (primary and secondary porosity); and
- The HGL is characterised by high residence times due to a low hydraulic gradient and is therefore more likely to accumulate salt out of soils and bedrock.

Mount Vernon HGL

- The HGL is characterised by steep hills of shale and minor sandstone which grade moderately steeply into foot-slopes and plains, with ponding often present on plains;
- Water predominantly moves laterally through the shale layers (although vertical movement through fracturing does occur) and vertically through interbedded sandstone and sandstone fracturing (primary and secondary porosity). Considerable lateral water movement may occur at sandstone shale interface;
- Alluvial sands and gravels derived from the surrounding rocks are present along current streams. Shallow groundwater on foot slopes are an important feature of the landscape; and
- The residence time is moderate.

Site Hydrogeology

Two relevant groundwater systems are anticipated to operate in the vicinity of the site area:

- A shallow unconfined to semi-confined aquifer system within the unconsolidated soils; and
- A deeper confined groundwater system resident in primary and secondary porosity of the underlying Bringelly Shale bedrock.

Localised soil water logging of soil and permanent high groundwater tables are anticipated in alluvial/colluvial soils as may be present on lower slopes and channels (**Figure 3**). Regional groundwater is anticipated to be highly saline, consistent with elevated salinity hazard associated with the regional soil and geological landscapes.

Registered groundwater bore information was obtained from the Water New South Wales groundwater mapping tools (WNSW 2019[9]) (**Appendix E**). A review of the registered bore information indicated that there were three bores within a 500 m radius of the site. The registered bore searches are summarised in **Table 2.2** below.

Table 2.3 Registered Groundwater Bore Search Summary

Bore ID	Use	Property / Distance from site (m)	Water Level (m bgs unless stated otherwise)	Well Depth (m)	Encountered Geology Comments
GW110029	Monitoring (active)	Australia Pipes 576 Mamre Road Erskine Park, 2176, 480 m north-east of site	-	0.75	Topsoil (to 0.2 m), silty clay (to 0.5) overlying heavy clay (to 0.75m).
GW110030	Monitoring (active)		-	0.75	Topsoil (to 0.2 m), silty clay (to 0.6) overlying heavy clay (to 0.75m).
GW110031	Monitoring (active)		-	0.75	Topsoil (to 0.2 m), silty clay (to 0.4) overlying heavy clay (to 0.75m).

Registered groundwater bores located within 500 m radius of the site are used for monitoring purposes. Given the agricultural land use of the surrounding area within the vicinity of the site, in addition to the identified licensed bores, there is a moderate probability of additional undocumented monitoring, stock, domestic and irrigation bores near the site.

Based on the reported geology, topography and depth to groundwater, perched (shallow) groundwater if present within unconsolidated soils is expected to migrate towards lower slopes and drainage channels within the site and then west towards South Creek.

2.10 Meteorology

The Sydney area has a humid to temperate climate with a seasonal rainfall maximum during the summer and autumn months. Data from Horsley Park Equestrian Centre Meteorological Station[10] located approximately 7 kilometres east of the site has identified the mean monthly temperature range from 12.1 degrees Celsius to 23.7 degrees Celsius. Mean monthly average rainfall ranges from 51.1 mm to 121.3 mm.

The area has a history of droughts, which are broken by periods of heavy rainfall resulting in significant recharges to groundwater resources. The 1940s and 1980s and the current decade are observed to be dry periods, while the early 1970s and 1990s were wet periods.

Summer winds are north-easterly with southerly thunderstorms common. Winter winds are westerly.

[9] *Groundwater Monitoring Overview Map*. NSW Department of Primary Industries, 2015 Http://allwaterdata.water.nsw.gov.au/water.stm Accessed 8 February 2019

[10] http://www.bom.gov.au/climate/averages/tables/cw_066124.shtml. Accessed 08 February 2019.

3. Site History

3.1 Anecdotal Evidence

During site investigations, an interview was held with the occupant of 707-711 Mamre Road, NSW. The occupant indicated that they had lived and worked on the property for several decades. Pertinent information is presented following:

- The occupant had developed the property into its current form from a generally vacant parcel of land (the apparent site features at the commencement of occupancy are discussed in **Section 3.3**);
- The property had been utilised to cultivate crops and as agricultural feeding land during their occupation;
- Earthworks comprising levelling/grading and construction of infrastructure had been completed using site won natural soils;
- Minimal imported materials were present at the property, limited to construction/building materials used to create current structures and infrastructure (asphaltic/concrete roadways and pavement);
- Seasonal water logging of soils occurred during periods of heavy rain, typically limited to lower slopes and drainage channels;
- Soil tilling had occurred, generally limited to a depth of 10 cm bgl, to replenish soil nutrients which comprised mixing some dead/non-harvested crops into shallow soils; and
- The occupant indicated that pesticide application had occurred in the past, however had recently (~5 years) been ceased

3.2 Historical Titles

Historical land title records for all properties are presented, together with a summary of relevant title ownership in **Appendix F**.

No easements or leases were identified as part of the historical land title record search.

A review of historical titles indicates that the likely historical use of the site was a combination of agricultural and low-density rural residential land use.

3.3 Aerial Photographs

Historical aerial photographs and a summary of relevant observations are provided in **Appendix G**. Former site features observed, including infilled and current dams and former site structures, comprise AECs which are discussed further in **Section 5**, and shown on **Figure 4**.

3.4 EPA Records

Search of the NSW Environmental Protection Authority (EPA) database was undertaken on 09 February 2019 (**Appendix H**) for the site and immediate surroundings. The search consisted of the:

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

Results of the searches are discussed below.

POEO

No prevention, clean-up or prohibitions notices and no transfer, variation, suspension, surrender or revocation of an environment protection licences (EPL) has been issued under the POEO Act for the site and adjacent properties. 105 records are present for the suburb of Kemps Creek as presented within **Appendix H**.

One property, 819-833B Mamre Road (approximately 500 metres south of the site) has a notice of clean-up action from 12 May 2017. The action referred to unlawful importation of over 13 000 m^3 of waste material containing a sandy matrix with suspected railway ballast waste and processed building and demolition waste including bricks tiles, metal, plastic and asbestos. The site owner was instructed to discontinue importation and not to remove or alter the material currently on the site until further instruction. As this property is not neighbouring the site, and the waste identified is not considered to have a high risk of migration, it is considered unlikely to pose a contamination risk to the site.

All other properties with a record on the POEO register are more than 3 km from the site and considered unlikely to pose a contamination risk to the site.

Section 58

No notices have been issued under the CLM Act for the site or any sites in the suburb of Kemps Creek. Based on the distance from the site to the locations noted on the EPA contaminated land public register of notices they are considered unlikely to pose a contamination risk to the site.

Section 60

The site or adjacent properties are not on the list of NSW contaminated sites notified to the EPA.

A property located at 1163 Mamre Road, Kemps Creek (Caltex Service Station) has been notified to the EPA and is currently under assessment. The Caltex Service Station is located approximately 4 km to the south of the site. Given the substantial distance, the property is considered unlikely to pose a contamination risk to the site.

3.5 Per- and Poly-Fluoroalkyl Substances Registers

A search of the EPA's register of Per- and Poly-fluoroalkyl substances (PFAS) investigations indicated that no sites impacted by PFAS were within close vicinity of the site.

A search of readily available records held by the Department of Defence was undertaken and has identified the following with regards to the assessment area and surrounding properties, records are included in **Appendix I**. The site and immediately surrounding properties are not registered within the PFAS Investigation and Management Program. It is also noted that the site and immediately surrounding properties are not identified on the Defence Environmental Remediation Program.

A review of the site history and environmental setting has not identified historical aviation, firefighting, commercial/industrial production facilities or reasonable potential for use, storage or disposal of per- and polyfluoroalkyl substances (PFAS).

3.6 Australian and NSW Heritage Register

A search of the Australian Heritage Trust database and the NSW Heritage Inventory was undertaken, and records are included in **Appendix J**. The search did not identify the presence of any items of national or state significance in the immediate vicinity of the assessment area.

3.7 Planning Certificates

Copies of the Section 149 (2) and (5) planning certificates were purchased in 2017 during the PSI works for each land parcel and are provided in **Appendix D**. A summary of the information for each property with respect to contamination is as follows:

- The majority of the site is zoned as RU2 Rural Landscape. The eastern portion of 657-703 Mamre Road (Lot 34 DP1118173), adjacent to Mamre Road is zoned as SP2 Infrastructure Classified Road. The western portion of 757-769 Mamre Road (Lot 22 DP258414) and 707A Mamre Road (Lot 1 DP1018318), adjacent to South Creek, is zoned as E2 Environmental Conservation.
- Some of the land within 757-769 Mamre Road (Lot 22 DP258414), and all remaining areas of the site, are identified as bush fire prone land according to council records.
- The site is not affected by any of the matters contained in the Contaminated Land Management Act.
- An item of environmental heritage is not situated on the site.
- The site does not include or comprise critical habitat.
- Development at the site is subject to flood related development controls.
- While 757-769 Mamre Road (Lot 22 DP258414) and 657-703 Mamre Road (Lot 34 DP1118173) are affected by road widening or road realignment under Division 2 of Part 3 of the Roads Act, or an environmental planning instrument of a resolution of Council, the remaining land area of the site is not.
- 757-769 Mamre Road (Lot 22 DP258414) is identified as "Land with Scenic and Landscape Values" on the *Penrith Local Environmental Plan 2010* Scenic and Landscape Values Map.

3.8 Fair Trading NSW Properties Affected By Loose Fill Asbestos Insulation.

A search of the Fair Trading NSW Loose-fill Asbestos Insulation Register (LFAI register[11]) for the site addresses has indicated that properties comprising the site are not currently registered as being affected by the presence of LFAI.

3.9 Summary of Site History and Integrity Assessment

Based on the information reviewed, the assessment area has been used for primarily rural residential and agricultural land uses. Based on the range of sources and the general consistency of the historical information, it is considered that the historical assessment has an acceptable level of accuracy with respect to the potentially contaminating activities historically occurring at the site.

[11] http://www.fairtrading.nsw.gov.au/ftw/Tenants_and_home_owners/Loose_fill_asbestos_insulation/Public_register_of_affected_properties.page accessed by JBS&G 09/02/2019

4. Previous Investigations

Two previous assessments have been undertaken at the site, as documented in JBS&G (2017) and PSM (2017). Relevant details from previous investigations are provided in **Section 4.1** to **Section 4.2**.

4.1 713-755 Mamre Road, Kemps Creek – Results of Geotechnical Investigations (PSM 2017)

Pells Sullivan Meynink completed a geotechnical assessment on the site, with intrusive soil investigation of Lot Y (713-755 Mamre Road). It was reported that the geotechnical condition of the surrounding land parcels was anticipated to be generally similar to that encountered within Lot Y.

The site was reported to generally consist of grassed and vegetated areas. A total of 12 test pits were advanced across the Lot Y to depths ranging from 3.0 m bgl to 4.1 m bgl. The locations are shown in **Figure 5**. Encountered soil/geology conditions are summarised in **Section 2.5.**

Soils were reported to comprise topsoil (0-0.1 m bgl) then residual clay (0.1 to 3.8 m bgl) overlying highly weathered shale bedrock to the maximum depth of the investigation. Fill material was not encountered in any of the twelve test pit locations. It was reported that groundwater was not observed during the intrusive investigation, though seepage was observed within the photographic log at TP05.

4.2 *Preliminary Site Investigation – 657-703, 707-711, 707A, 713-755 & 757-769 Mamre Road Kemps Creek, NSW* (JBS&G 2017).

JBS&G completed a PSI at the site. The purpose of the investigation was to characterise the potential presence of contamination conditions at the site and to draw preliminary conclusions regarding the suitability of the site for the proposed use.

JBS&G conducted a desktop review of readily available relevant background and historical information, a detailed site inspection (of accessible areas limited to 713-755 Mamre Rd), development of a preliminary conceptual site model and presentation of the assessment findings in relation to potential site contamination.

Based on the assessment, the following conclusions were provided:

- No potential for gross and/or widespread contamination was identified which would likely preclude ongoing or future use of the site for commercial/industrial purposes;
- The current site use, mixed agricultural and residential, was considered not to pose a significant contamination potential;
- Site historical use appeared to include residential, agricultural (pastoral and market gardening), recreational (golfing and potential oval facilities) and retail (Mamre Produce);
- 707-711 Mamre Road was identified as comprising an AEC due to the bulk storage or rural and pet supplies due to the potential for impacts to have occurred as a result of storage and waste management practices typical of rural retail supply operations;
- Low risk AECs were identified across the broader land parcel, limited to potential historical pesticide/herbicide application and potential use of fuels, oils and solvents associated with agricultural/residential plant maintenance;
- It was reported that fill material (where present) and surface soils potentially impacted due to historical development/operational activities were unlikely to pose a significant contamination issue which was not able to be readily managed during future site development;

- The presence of hazardous building materials within existing structures were considered to have limited potential as a contamination issue and, if present, could be managed in accordance with relevant regulatory guidance during demolition; and
- It was identified that rural residential properties present a risk of burial of waste material in unmarked locations, including former structures, abandoned machinery, etc. Occurrences of this nature were reported to be able to be readily dealt with via implementation of a construction environmental management plan (CEMP) with an unexpected finds protocol (UFP).

5. Preliminary Conceptual Site Model (CSM)

The information herein, together with the figures included with this report aid, provide a basis for a CSM.

5.1 Potential Areas and Substances of Environmental Concern

Based on the site history review, review of previous investigations and JBS&G's understanding of site conditions, AECs and associated COPC have been identified and are presented in **Table 5.1** and shown on **Figure 3** (where appropriate).

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

Areas of Environmental Concern (AEC) / Media	Contaminants of Potential Concern (COPCs)	Expected Distribution of COPCs within Media
AEC1 – Storage of Agricultural Supplies and Operation of Plant / Soils Potential environmental incidents as a result of operation of the Mamre Produce facility.	Heavy metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn), Polycyclic Aromatic Hydrocarbons (PAHs), Total Recoverable Hydrocarbons (TRHs), Benzene, Toluene, Ethylbenzene and Xylene (BTEX), Phenols and Organochlorine Pesticides (OCPs)	Localised – Surficial/shallow
AEC2 – Placement of Fill Materials / Soils Materials imported to, or created on, the site and placed during site development/grading.	Heavy metals, PAHs, TRHs/BTEX, OCPs, Polychlorinated Biphenyls (PCBs), Phenols and asbestos	Localised
AEC3 – Former Building Footprints and Surrounding Areas / Soils Formerly surficial / shallow soils surrounding historical residential and agricultural structures at the site that may have been impacted via former construction material use/inappropriate demolition	Heavy metals and asbestos	Localised – Surficial/shallow
AEC4 – Former Agricultural Features / Soils Surficial/shallow soils within areas of crop cultivation or water storage (dams)	OCPs	Homogeneous – Surficial/shallow
AEC5 – Ground Surface Wastes and Soil Stockpiles / Material Surficial and near surface soils impacted via storage of general and B&D wastes on site surfaces	Heavy metals, PAHs, TRHs/BTEX, OCPs and asbestos	Localised to relevant waste/stockpiles
AEC5 – All Mobile AECs / Groundwater Where mobile impacts are present, they may potentially have impacted site groundwater	Heavy metals, PAHs, TRHs, BTEX and Phenol	Plumes

5.2 Potentially Contaminated Media

Potentially contaminated media comprise:

- Fill materials;
- Underlying natural soils; and
- Groundwater.

Review of the site history and environmental setting has indicated that the potential for soil-vapour contamination is low. On this basis, no direct assessment of soil-vapour is considered warranted. Notwithstanding, if substantial soil and/or groundwater impacts by volatile COPCs (BTEX and volatile TRHs) are identified, ancillary soil vapour impacts may be present.

Surface water features have been identified at the site (**Section 2.2**). Given the anticipated hydrological setting, it is considered likely that r surface water residence times are relatively short prior to extraction from the water bodies and/or infiltration into the underlying groundwater system. On this basis, and with consideration of the observed surface water condition, reported in **Section 2.2**, the condition of the current surface water quality does not warrant direct assessment.

Notwithstanding, where groundwater is significantly contaminated, surface water impacts may comprise a potential contaminated source media.

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 propensity for contaminants to migrate is dependent on:

- The nature of the contaminants (solid/liquid/gas 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 area history review and previous investigation are generally in either a solid form (e.g. heavy metals, asbestos, etc.) and liquid form (e.g. fuel, lubricants, pesticides, etc.).

There is considered to be a moderate potential for the generation of windblown dust generated from disturbed/non-vegetated soils. In areas of unsealed surfaces, if significant contamination is identified, windblown dust may present a contaminant migration pathway requiring further assessment. The potential for contamination migration via surface water movement and infiltration of water and subsequent migration through the soil profile is considered generally to be low given the extent of low permeability soils in the assessment area.

Natural soils at the site typically comprise relatively impermeable clays overlying residual shale on upper slopes, and structured loams/plastic clays in drainage lines (lower slopes). Notwithstanding, migration of potentially impacted groundwater may occur over moderate to long time periods. On this basis, migration of contamination via groundwater movement is requires further consideration.

Although vapour impacts are considered unlikely, vapour generation potential associated with volatile and semi-volatile potential contaminants of concern (TRH and BTEX), if present, are identified as a potential migration pathway where significant volatile contaminants are identified in either groundwater or soils.

5.4 Potential Exposure Pathways

Based on the COPC identified in various media, as discussed above, and proposed site development activities, the exposure pathways for site during and following development works include:

- Inhalation of dust liberated from soils; and/or
- Dermal and oral contact to soils, surface water and groundwater (if encountered during development); and/or
- Contact and constituent uptake by vegetation and fauna within areas of exposed soils; and/or
- Direct contact with groundwater discharged in the receiving water body (South Creek).

As discussed in **Section 7**, the site exists within an area serviced by water infrastructure. Where potential site production of potable water occurs it is currently limited to rainwater capture and is not anticipated to occur during or following site development. Further, groundwater is not suitable for drinking as a result of regional conditions. On this basis, no potential direct ingestion of groundwater is anticipated to occur at the site.

Given the absence of identified soil-vapour impacts, inhalation of vapours is considered not to comprise a relevant exposure pathway.

5.5 Receptors

Potential human/ecological populations who may be exposed to site impacts in the future (if they are not remediated or appropriate management is not implemented prior to or during development) include:

- Future commercial workers, construction workers and maintenance personnel during and subsequent to completion of redevelopment; and
- Flora and fauna within areas of exposed soils.

Off-site ecological receptors may potentially be exposed to overland surface water and windblown dusts migrating from the property. Ecological receptors within the fresh water environment of South Creek may also be exposed to overland surface water and groundwater discharged from the site.

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 gases.

Man-made preferential pathways are present throughout the site, generally associated with constructed drainage lines sub-surface services, and at near surface depths.

6. Sampling Analysis and Quality Plan

6.1 Data Quality Objectives

Data quality objectives (DQOs) are statements that define the confidence required in conclusions drawn for data produced for a project, and which must be set to realistically define and measure the quality of data needed.

DQOs have been developed for this ESA, as discussed in the following sections.

6.1.1 State the Problem

The site is proposed to be redeveloped to accommodate a commercial/industrial facility. Previous investigations conducted at the site have identified AECs to exist within site media (particularly on 707-711 Mamre Road), which may pose an unacceptable risk to site receptors under the proposed land use.

Sufficient environmental data is required to provide appropriate assurance of the extent/magnitude of potential contamination impacts at the site such that recommendations for management are able to be provided.

6.1.2 Identify the Decision

With respect to the potential contamination identified in the preliminary CSM (**Section 5**), the following decisions below generally follow the EPA (2017[12]) decision making process for assessing urban redevelopment sites:

- Are there any unacceptable risks to likely onsite receptors from potentially contaminated site media?
- Are there any issues relating to the local area background soil concentrations that exceed appropriate criteria?
- Are there any impacts of chemical mixtures?
- Are there any unacceptable aesthetic issues?
- Is there any evidence of or potential for migration of contaminants from the site?
- Is a site contamination strategy required?

6.1.3 Identify Inputs to the Decision

Inputs to the decisions are:

- The results of previous assessments relevant to the areas of investigation, including background historical information, site observations, laboratory results and report findings;
- Data collected by sampling and analysis and site observations made during the current investigation;
- Generic landuse suitability criteria to provide initial screening of potential risks to future onsite/offsite receptors, documented in **Section 7**; and
- Assessment of quality assurance/quality control (QA/QC) as per the data quality indicators (DQIs) established in **Section 6.1.6**

[12] *Guidelines for the NSW Site Auditor Scheme* (3rd Edition). NSW Environment Protection Authority, October 2017, EPA 2017;

6.1.4 Define the Study Boundaries

The lateral study boundary comprises the extent of the site as shown on **Figure 1** and **Figure 2** and detailed in **Sections 2.1**.

The vertical extent of the study comprised the maximum depth of the investigation location (MW01 8.2 m bgl).

The current investigation makes use of historical data commencing 1900, and information presented in recent site investigations (JBS&G 2017 and PSM 2017). Intrusive investigations undertaken as part of the current assessment are limited to the period of site sampling (29 January to 04 February 2019).

6.1.5 Develop a Decision Rule

Laboratory analytical data was assessed against EPA endorsed criteria as documented in **Section 7**. The decision rules adopted to answer the decisions identified in **Section 6.1.2** are summarised in **Table 6.1**.

Table 6.1: Summary of Decision Rules

Decision Required to be Made	Decision Rule
1a. Were there any unacceptable risks to likely onsite receptors from soils?	Soil analytical data were compared against EPA endorsed criteria (**Section 7**). Statistical analyses of the data in accordance with relevant guidance documents was undertaken, if appropriate, to facilitate the decisions. The following statistical criteria were adopted with respect to soils: Either: the reported concentrations are all below the site criteria; Or: the average sample concentration for each analyte must be below the adopted site criterion; no single analyte concentration exceeds 250 % of the adopted site criterion; and the standard deviation of the dataset must be less than 50 % of the site criteria, and the 95 % upper confidence limit (UCL) of the average concentration for each sample dataset must be below the adopted site criterion. If the statistical criteria stated above were satisfied, the decision was No. If the statistical criteria were not satisfied, the decision was Yes.
1b. Were there any unacceptable risks to likely onsite receptors from groundwater?	Groundwater analytical data were compared against EPA endorsed criteria (**Section 7**). The following criteria were adopted with respect to groundwater: Either: the reported concentrations are all below the site criteria; Or: assessment of individual analytes in the context of the preliminary CSM was undertaken to determine whether there was any reasonable expectation of site exposure to unacceptable levels of contamination within the groundwater or ancillary impacted media (vapour/soils). If the reported concentrations were all below site criteria, or there was no potential exposure of site receptors to unacceptable levels of groundwater or ancillary impacted media, the answer to the decision was No. Otherwise, the answer to the decision was Yes.
2. Were there any issues relating to the local area background soil concentrations that exceed appropriate criteria?	If the population data set for contaminants in natural soils at the site exceeded the site criteria, as determined by the assessment procedure presented in Decision Rule 1, the answer to the decision was Yes, otherwise the answer was No.
3. Were there any chemical mixtures?	Were there more than one group of contaminants present which increase the risk of harm? If there was, the decision was Yes. Otherwise, the decision was No.

Decision Required to be Made	Decision Rule
4. Were there any unacceptable aesthetic issues?	Assessment of the presence of aesthetic issues with regard to the adopted exposure scenarios was undertaken with regard to definition provided in NEPC (2013). If any aesthetic concerns exist at the site which were considered unsuitable for the proposed land use, the answer to the decision was Yes, otherwise the decision is No.
5. Was there any evidence of, or potential for, migration of contaminants from the site?	Were contaminants present in mobile media at concentrations exceeding the adopted criteria and was there reasonable potential for significant levels of contaminated site media to migrate from the site? If yes, the decision was Yes. Otherwise, the decision was No.
6. Is a Site Management Strategy Required?	Is the answer to any of the above decisions yes? If yes, a site management strategy is required to address unacceptable contamination concerns at the site so as to make the site suitable for the proposed land uses. If no, a site management strategy is not required and the site is considered suitable, from a contamination view point, for the proposed land uses.

6.1.6 Specify Limits of Decision Error

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

Specific limits for this project have been adopted in accordance with the appropriate guidance from the NSW EPA, NEPC (2013), ANZAST (2018), EPA (2017[13]), appropriate indicators of data quality (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 will be assessed against pre-determined DQIs for completeness, comparability, representativeness, precision and accuracy.

The pre-determined Data Quality Indicators (DQIs) established for the project are discussed below in relation to precision, accuracy, representativeness, comparability, completeness and sensitivity (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 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.

[13] *Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination*. NSW Environmental Protection Authority (EPA 2017);

- **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; 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 criteria.

If any of the DQIs are not met, further assessment of the data set is required in order to determine whether the non-conformance has significant effects on the usefulness of the data. Corrective action to correct an adverse impact on the reliability of the dataset may include, but is not limited to, the request of further information from samplers and/or analytical laboratories, downgrading of the quality of the data or alternatively, re-collection of the data.

Table 6.2: Summary of Quality Assurance / Quality Control Program

Data Quality Objectives	Frequency	Data Quality Indicator
Precision		
Blind duplicates (intra laboratory)	1 / 20 samples	<50 % RPD[1], asbestos in agreement
Blind duplicates (inter laboratory)	1 / 20 samples	<50 % RPD[1], asbestos in agreement
Laboratory duplicates	1 / 20 samples	<50 % RPD[1], asbestos in agreement
Accuracy		
Surrogate spikes	All organic analytical groups	70-130 %
Laboratory control samples	1 per lab batch per media	70-130 %
Matrix spikes	1 / 20 samples	70-130 %
Representativeness		
Sampling appropriate for media and analytes	All Samples	-[2]
Samples extracted and analysed within holding times.	-	Soil: organics (14 days), inorganics (6 months) Groundwater: metals (6 months, other than mercury - 28 days), sVOCs (>C_{10} - 7 days), volatiles (<C_{10} - 14 days)
Trip spike	1 per sampling event	70-130 % recovery
Storage blank	1 per sampling event	<LOR
Rinsate blank	1 per sampling data where reusable equipment is used	<LOR
Laboratory blanks	1 per lab batch	<LOR
Comparability		
Standard operating procedures for sample collection & handling	All Samples	All samples[2]
Standard analytical methods used for all analyses	All Samples	All samples[2]
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	All QA/QC samples	-[2]
Data from critical samples is considered valid	-	Critical samples valid[2]
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria	All Samples	All samples

[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 is occurring in the 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[14]), including judgemental, random, systematic and stratified sampling patterns. EPA (1995) recommends that for sites with an area in excess of 5 ha, a stratified sampling approach is utilised whereby individual site areas are sampled based on their relative risk of potential impacts.

The site history and setting are well understood. On this basis a program of intrusive investigations was implemented which targeted both high risk localised and diffuse, site-wide potential impacts. A combination of judgemental and systematic sampling was used to investigate potential impacts at the site. Judgemental sample locations were targeted towards areas of higher contamination potential (AECs), providing an assay of localised contamination conditions. High risk media identified in **Table 5.1** is generally limited to surficial/shallow soils. On this basis, soil inspection, sampling and analysis was focused on such media. Distribution of analysis within the site was determined based on relative risk of site media.

The desktop assessment and a detailed site inspection identified Lot X (707-711 Mamre Road) as presenting an elevated risk for the presence of contamination. On that basis, intrusive investigations were focused on Lot X. A total of 30 systematic boreholes were advanced across the property on a systematic grid basis to provide adequate site coverage, with an additional 8 locations targeted toward local conditions. Soil samples were analysed from Lot X per the analytical schedule presented in **Table 6.4**.

An additional 10 test pit locations were advanced across the broader site (Lot 34, Lot 1, Lot Y and Lot 22), targeted towards areas of anticipated historical filling and identified site features. Soils were inspected and screened on site to determine the likelihood and scale of potential impacts within these properties. Based on the desktop assessment and conditions observed during soil investigations, no AECs were identified which warranted laboratory analysis of soils for contaminants.

Individual AEC data optimization information is provided in **Table 6.3** following.

[14] *Contaminated Sites: Sampling Design Guidelines*. NSW EPA 1995 (EPA 1995)

Table 6.3 Data Points and Rationale

AEC / Media	Data Acquisition	Comments
AEC1 / Soils	10 x boreholes/test pits 35 x soil samples screened 14 x soil samples analysed	Potential impacts associated with the storage and distribution of rural agricultural supplies are likely to have impacted surficial exposed soils within the immediate vicinity of storage. On that basis, samples analysis was focused on surficial and shallow soils to provide anticipated 'worst case' screening data
AEC2 and AEC3 / Soils	48 x boreholes/test pits 164 x soil samples screened 57 x soil samples analysed	Potential for filling across the site was assessed by advancement of 48 intrusive sampling locations. A total of 164 samples were screened on site for the presence of fill materials and subsequently 76 soil samples were analysed for COPCs associated with fill materials. Sample locations were focused around areas of evident grading/levelling and current/former buildings, as these are identified as high-risk filling areas.
AEC4 / Soils	48 x boreholes/test pits 164 x soil samples screened 21 x soil samples analysed	Given the anticipated homogeneity of diffuse impacts (such as herbicide/pesticide application), and limited potential for substantial hotspots, site characterisation is able to be inferred from analysis of a limited number of soil samples.
AEC5 / Material	Visual inspection	Localised to relevant waste/stockpiles
AEC5 / Groundwater	3 x monitoring wells, screened and sampled	Screening of broad scale groundwater contamination potential is provided by installation of representative upgradient and downgradient groundwater wells. The installation of MW01 on the approximate upgradient site boundary and MW02 within the drainage channel (hydrogeological downgradient point) provides and indication of potential widespread contamination impacts and whether they are resultant from site sources.

If present, contamination is expected to be present within the perched aquifer at the soil - shale bedrock interface. On this basis, groundwater wells were installed to intercept the perched aquifer within unconsolidated soils. Based on the information reviewed in preparation of this ESA, the deeper groundwater within Bringelly Shale was not specifically targeted, given the low probability of potential impact, the anticipated depth to groundwater and the absence of future potential exposure pathways.

6.2 Field Investigation Methodology

6.2.1 Soil

Soil investigation locations were advanced via a combination of excavator, drill rig and hand augers. Five of the targeted locations in Lot X (MW01, MW02, MW03, TP06 and TP07), were advanced via 150 mm diameter drill rig (push tube and solid flight auger method) to achieve the required depth of the investigation. Eight of the systematic holes in Lot X (TP08, TP10, TP14, TP19, TP23, TP27, TP25, and TP29), and two of the targeted holes in Lot 1 (TP400 and TP401) were advanced via 150 mm diameter hand auger, due to access restrictions precluding the use of plant. All remaining holes were advanced via excavator with a 300 mm diameter bucket, facilitating inspection of bulk soil.

Discrete samples were collected from undisturbed soils within push tube liners or directly from the backhoe bucket or directly from the hand auger, to a depth of at least 0.3 m into natural soils or prior refusal. A minimum volume of soil (10 L) per linear metre of excavation was inspected and screened during field work for the presence of potential ACM, consistent with WA DOH (2009[15]) guidelines for asbestos quantification assessment. Soil samples were generally collected from the ground surface, 0.3 m, 0.5 m and then at 0.5 m intervals to the maximum depth of the borehole/test pit depth.

[15] *Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia*, Western Australian Department of Health, May 2009, WA DOH 2009

Encountered conditions were recorded on field investigation logs to assist in the identification of natural and anthropogenic landforms at the site. During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indicators of contamination were noted. A calibrated Photo Ionisation Detector (PID) was utilised to screen for volatile organic compounds (VOCs) within the sampled material.

Collected samples were immediately transferred to laboratory supplied sample jars/bags (as appropriate). The sample jars/bags were then 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 to the testing laboratory with each sample batch. Based upon field observations, samples were analysed in accordance with the laboratory schedule (refer to **Table 6.4**).

All samples remained at the primary laboratory for a period of two months following the receipt of sample results for possible future analysis (subject to holding times) if required.

PID Screening

During site works, sufficient sample material was collected to allow for field testing using a PID and laboratory analyses to assess the potential presence of VOCs including petroleum hydrocarbons. Samples obtained for PID screening were placed in a sealed plastic bag for approximately 2 minutes to equilibrate, prior to a PID being attached to the bag. Readings were then monitored for a period of approximately 30 seconds or until values stabilised, where the highest/stabilized reading was recorded on the field logs. The PID was calibrated prior to the commencement of field works and then check readings were completed on a daily basis during the field program using suitable calibration gas.

Duplicate and Triplicate Sample Preparation

For discrete soil samples, field duplicate and triplicate samples were obtained using the above sampling methods. Each sample was divided laterally into three samples with minimal disturbance and placed in clean glass jars and/or bag (as appropriate). Each sample was labelled with a primary, duplicate or triplicate sample identification before being placed in the same chilled esky for transport to the laboratory.

Decontamination

Prior to the commencement of sampling activities, non-disposable sampling equipment including sampling trowel, auger were cleaned with a water/detergent spray, rinsed with water and then air dried. The equipment was then inspected to ensure that no soil, oil, debris or other contaminants were apparent prior to the commencement of works. Sampling equipment was subsequently decontaminated using the above process between each sample location.

6.2.2 Groundwater

Three groundwater monitoring wells (MW01, MW02 and MW03), screened to intercept perched aquifer seepage were installed at the site, as shown on **Figure 5**.

The wells were constructed from 50 mm un-plasticised polyvinyl chloride (uPVC) screen and casing, with appropriate filter packs (sand), bentonite seals, and lockable caps to complete the wells. The wells were then completed as stand pipes to ensure they were not covered in the period intervening installation and sampling.

Newly installed groundwater monitoring wells were developed three days prior to sampling via the use of Waterra's Inertial Foot valves and low density polyethylene (LDPE) tubing to remove sediment disturbed during well installation and/or accumulation given the lapse in time. During development, the bores were rapidly purged and then allowed to recharge. Development of monitoring wells was limited by groundwater recharge rates.

The monitoring wells were sampled using a peristaltic pump. In order to ensure groundwater representative of the target aquifer was obtained, the following procedure was adopted:

- Prior to sampling, groundwater levels were gauged with an interface probe to assess standing groundwater levels (SWLs) and the potential presence of non-aqueous phase liquids (NAPLs) within the groundwater well;
- Low flow pumping was undertaken with a peristaltic pump, using new disposable silicone/LDPE tubing as required for sampling at each monitoring well to remove standing/static water. Only a short length of silicone tubing was used in the peristatic pump head, the remainder of the tubing was of small diameter and relatively inert material, and no degassing was observed during field pumping. The LDPE tubing was lowered to the middle of the wetted screen length of the monitoring well prior to the commencement of purging;
- Purging of groundwater was then undertaken generally at a rate of 0.1 L to 0.5 L/minute while ensuring that the drawdown did not exceed 500 mm (as measured by interface probe) during the pumping event;
- Measurement of field parameters including pH, conductivity, redox potential, dissolved oxygen and temperature was completed at a frequency of once every 1 to 5 minutes dependent on the purging rate, using a multi-parameter probe/meter and a flow cell;
- During the development, purging and sampling, features such as discolouration, staining, odours and other indications of contamination were noted of field forms;
- Groundwater samples were obtained using the low-flow pump when three or more consecutive readings of field parameters met the following criteria: pH ± 0.05; Dissolved oxygen (DO) ± 10 % or 0.1 mg/L; Electrical conductivity (EC) ± 3 %; and Redox potential ± 10 mV (Vic EPA April 2000 *Groundwater Sampling Guidelines (VIC EPA 2000*);
- Collected groundwater samples were immediately transferred to sample containers of appropriate composition, which were pre-treated in a manner appropriate for the laboratory analysis. Groundwater samples were obtained in a manner that ensures no headspace remained in the bottles, and where appropriate were filtered to remove suspended sediments (>.45 µm) in the field prior to preservation;
- Each of the sample bottles were labelled with the project ID, date, sampler's initials and unique monitoring well ID (or quality control sample name), using permanent ink marker on labels affixed to the sides of the bottles by the laboratory;
- All bottles were placed directly into a pre-chilled ice chest, for transport to the testing laboratories; and
- Chain of custody documentation were completed for each batch of samples relinquished to the laboratory and included: sample ID; number of bottles/vials; media type (i.e., water); project ID; name; date; and time of sampling and relinquishment.

At the completion of sampling at each location, single use sampling equipment was disposed of and re-useable equipment that potentially contacted groundwater including the interface probe was decontaminated as per the general procedures discussed above for non-disposable soil sampling equipment. Rinsate samples were collected to demonstrate the effectiveness of decontamination procedures.

Samples were analysed in accordance with the laboratory schedule (refer to **Table 6.4**). Sample locations are shown on **Figure 4**.

6.3 Laboratory Analysis

JBS&G contracted Eurofins MGT (Eurofins) as the primary laboratory, and Envirolab Services Pty Ltd (Envirolab) as the secondary laboratory. All laboratories were NATA registered for the required analyses. In addition, the laboratories were required to meet JBS&G's internal QA/QC requirements. The analytical schedule is presented in **Table 6.4**.

Not all soil samples collected were selected for analysis. Distribution of analysis was determined based on professional judgement to ensure that high risk media, identified based on field observations, was targeted as a priority. Additionally, sufficient coverage of natural landforms, fill material types, and potentially impacted AEC media was achieved via the distribution of the balance of analytical testing.

Table 6.4: Analytical Schedule

	No. of Sample Locations	Analyses (exc. QA/QC)
Soils		
Contamination	48 Total Locations 33 Test Pits 15 Boreholes	Heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) – 56 samples PAHs/Phenols – 15 samples Asbestos in soils – 15 samples Asbestos Identification – 1 sample TRHs – 29 samples BTEX – 32 samples OCPs – 21 samples PCBs – 4 samples % Clay – 4 samples
Groundwater		
Contamination	3 groundwater monitoring wells	Heavy metals, PAHs (low level), TRHs/BTEX and phenols – 3 samples
Physicochemical		pH, EC and hardness parameters – 4 samples

7. Assessment Criteria

7.1 Regulatory Guidelines

The investigation was undertaken with consideration to aspects of the following guidelines, as relevant:

- *National Environment Protection (Assessment of Site Contamination) Measure 2013 (as amended 2013).* National Environment Protection Council (NEPC 2013);
- *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites.* NSW EPA, 1997 (OEH 2011);
- *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme*, 3rd Edition. NSW EPA, 2017 (EPA 2017);
- *Contaminated Sites: Guidelines on Duty to Report Contamination under the Contaminated Land Management Act 1997.* NSW EPA 2015 (EPA 2015);
- *Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination.* NSW Department of Environment and Conservation March 2007 (DEC 2007);
- *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.* Australian and New Zealand and Australian State and Territory Governments (ANZAST, August 2018); and
- *Australian Drinking Water Guidelines (2011) (V3.4)*. National Health and Medical Research Council, October 2017, (NHMRC 2017).

7.2 Assessment Criteria

As per the decision process for assessment assessing urban sites (EPA 2017), a set of human health and ecological assessment screening criteria derived from NEPC (2013) was used for evaluation of the environmental data collected for this assessment.

On the basis of the proposed warehouse and logistics hub land use, for the purpose of the assessment area characterisation, environmental data was compared against the generic land use criteria of commercial/industrial to determine the suitability of all site media for the proposed land uses.

7.2.1 Soil Chemical Contamination Assessment Criteria

As the nature of the development is understood to comprise commercial warehousing (or similar), concentrations of contaminants in soil were compared against the health-based investigation and screening levels (HILs and HSLs), and ecological investigation and screening levels (EILs and ESLs) for commercial/industrial use provided in the NEPC.

Concentrations of contaminants in soil were compared against published levels presented in **Tables 7.1** and **7.2**, sourced from the following:

- Health based investigation Levels (HILs) for Commercial/Industrial (HIL-D) – NEPC 2013;
- Health Screening Levels (HSLs) for vapour intrusion, specific levels will vary depending on land use, soil type and depth – NEPC 2013;
- Site derived ecological investigation levels (EILs) based on NEPC 2013 and site specific physicochemical parameters – NEPC 2013; and
- Ecological Screening Levels (ESLs) for TRH fractions, BTEX and PAHs will be derived from site specific criteria (NEPC 2013).

Where there are no NSW EPA endorsed thresholds, the laboratory limit of detection has been adopted as an initial screening value for the purposes of this assessment. Consideration was also given to aesthetic aspects, consistent with EPA 2017 and NEPC 2013 guidance.

Table 7.1 Health Based Soil Investigation Criteria (all units in mg/kg)

	Limit of Reporting	Laboratory Method	Health Investigation/ Screening Levels
			Commercial industrial HIL-D/HSL-D
METALS			
Arsenic	4.0	ICP-AES (USEPA 200.7)	3000
Cadmium	0.4	ICP-AES (USEPA 200.7)	900
Chromium	1.0	ICP-AES (USEPA 200.7)	3600[1]
Copper	1.0	ICP-AES (USEPA 200.7)	240 000
Nickel	1.0	ICP-AES (USEPA 200.7)	6000
Lead	1.0	ICP-AES (USEPA 200.7)	1500
Zinc	1.0	ICP-AES (USEPA 200.7)	400 000
Mercury (inorganic)	0.1	Cold Vapour ASS (USEPA 7471A)	730[2]
POLYCYCLIC AROMATIC HYDROCARBONS			
Carcinogenic PAHs (as B(a)P TEQ)[3]	0.028	GCMS (USEPA8270)	40 [3]
Total PAHs[4]	0.4	GCMS (USEPA8270)	4000 [4]
Benzene	1.0	Purge Trap-GCMS (USEPA8260)	3 [5]
Toluene	1.0	Purge Trap-GCMS (USEPA8260)	NL[5, 7]
Ethylbenzene	1.0	Purge Trap-GCMS (USEPA8260)	NL[5, 7]
Total Xylenes	3.0	Purge Trap-GCMS (USEPA8260)	NL[5, 7]
F1 C_6-C_{10}	10	TPH Purge Trap-GCMS (USEPA8260)	260 [6]
F2 >C_{10}-C_{16}	50	TPH Purge Trap-GCMS (USEPA8260)	NL[7]
DDT + DDD + DDE	0.3	GCECD (USEPA8140,8080)	3600
Aldrin + Dieldrin	0.2	GCECD (USEPA8140,8080)	45
Chlordane	0.1	GCECD (USEPA8140,8080)	530
Endosulfan	0.3	GCECD (USEPA8140,8080)	2000
Endrin	0.1	GCECD (USEPA8140,8080)	100
Heptachlor	0.1	GCECD (USEPA8140,8080)	50
HCB	0.1	GCECD (USEPA8140,8080)	80
Methoxychlor	0.1	GCECD (USEPA8140,8080)	2500
OTHER			
Asbestos Fines / Friable Asbestos	0.001	PLM / Dispersion Staining	No asbestos at the limit of quantitative reporting 0.001 % w/w
Asbestos as ACM	0.01	PLM / Dispersion Staining	0.05 % w/w
Visible Asbestos	-	Visual Inspection (field)	No visible asbestos

1. Guideline values presented are for Chromium (VI) in absence of total Chromium values. Where total Chromium results are elevated, samples will be analysed for Chromium (VI).
2. Guideline values are for inorganic mercury. Where elevated mercury concentrations are encountered and/or site information suggests the potential presence of elemental mercury and/or methyl mercury, consideration of applicability would be needed.
3. Carcinogenic PAHs calculated as per Benzo(a)pyrene Toxicity Equivalent Factor requirements presented in NEPC 2013
4. Total PAHs calculated as per requirements presented in NEPC 2013.
5. Soil Health Screening Levels for Vapour Intrusion: Sand. Values presented are those for 0 to <1 m bgl for the various land use. Reference should be made to NEPC 2013 for further detail of levels at greater depths.
6. Values for F1 C_6-C_9 are obtained by subtracting BTEX (Sum) from laboratory result for C_6-C_9 TRH. Naphthalene is not subtracted as there is separate limits for Naphthalene.
7. NL: Non-limiting.

Table 7.2 Ecological Based Soil Investigation Criteria (all units in mg/kg)

	Limit of Reporting	Laboratory Method	ESLs Commercial Industrial[3] Coarse/Fine		EILs Commercial and Industrial
Arsenic	4.0	ICP-AES (USEPA 200.7)	-		160
Cadmium	0.4	ICP-AES (USEPA 200.7)	-		-
Chromium	1.0	ICP-AES (USEPA 200.7)	-		322[1]
Chromium (VI)	1.0	Alkali leach colorimetric (APHA3500-Cr/USEAP3060A)	-		-
Copper	1.0	ICP-AES (USEPA 200.7)	-		134[1]
Nickel	1.0	ICP-AES (USEPA 200.7)	-		61[1]
Lead	1.0	ICP-AES (USEPA 200.7)	-		2103[1]
Zinc	1.0	ICP-AES (USEPA 200.7)	-		252[1]
Mercury (inorganic)	0.1	Cold Vapour ASS (USEPA 7471A)	-		-
POLYCYCLIC AROMATIC HYDROCARBONS					
Benzo(a)pyrene	0.5	GCMS (USEPA8270)	1.4	1.4	-
Naphthalene	0.1	GCMS (USEPA8270)	-		370
Benzene	1.0	Purge Trap-GCMS (USEPA8260)	75	95	-
Toluene	1.0	Purge Trap-GCMS (USEPA8260)	135	135	-
Ethylbenzene	1.0	Purge Trap-GCMS (USEPA8260)	165	185	-
Total Xylenes	3.0	Purge Trap-GCMS (USEPA8260)	180	95	-
F1 C_6-C_{10}	10	TPH Purge Trap-GCMS (USEPA8260)	215[2, 3]	215[2, 3]	-
F2 >C_{10}-C_{16}	50	TPH Purge Trap-GCMS (USEPA8260)	170	170	-
F3 >C_{16}-C_{34}	100	Purge Trap-GCFID (USEPA8000)	1700	2500	-
F4 >C_{34}-C_{40}	100	Purge Trap-GCFID (USEPA8000)	3300	6600	-
ORGANOCHLORINE PESTICIDES					
DDT	0.1	GCECD (USEPA8140,8080)	-		640

1. Physicochemical parameters of site soils (CEC cmol/kg, pH and clay % as per NEPC 2013) were variable. As such, conservative added contaminant limits (ACLs) have been adopted for the purpose of an initial screening.
2. Values for F1 C6-C10 are obtained by subtracting BTEX (Sum) from laboratory result for C6-C10 TRH, to obtain F2, subtract naphthalene from C10-C16.
3. ESLs are of moderate reliability

7.2.2 Groundwater Assessment Criteria

In accordance with NEPC (2013) and ANZAST (2018), assessment criteria were selected to assess potential risks to sensitive receptors.

Given the character of the target aquifer, comprising highly saline groundwater which is not suitable for drinking, beneficial reuse of groundwater as a potential drinking water source is considered not to warrant investigation. However, as conservative screening criteria, values for health and aesthetics based *Australian Drinking Water Guidelines* (NHMRC 2017[16]) for recreational exposure have been adopted to assess the risk to construction/maintenance workers as a result of short term work involving interaction with groundwater at the site. The screening criteria adopted are 10 times the health values for Drinking Water published in (NHMRC 2017).

To assess the potential risk of contaminated groundwater migrating from the site to South Creek, reference has been made to the ANZAST (2018) default trigger values as hosted on the ANZAST website[17]. Given the disturbed nature of the receiving water body, a 95 % protection of species value has been adopted. Where no high reliability values have been specified, low reliability and/or screening level values have been utilised for the purpose of site assessment and screening. In accordance with the procedures for establishing relevant freshwater criteria provided by ANZAST (2018) for some contaminants, criteria have been adjusted based on the most conservative hardness value (1100 mg/L) reported from collected groundwater samples.

[16] *'National Water Quality Management Strategy – Australian Drinking Water Guidelines 6 2011', National Health and Medical research Council,* October 2017, NHMRC 2011;

[17] ANZAST Default Trigger Value Master Table accessed 13 February 2019 http://waterquality.gov.au/anz-guidelines/guideline-values/default/water-quality-toxicants/search/master-table

8. Quality Assurance Quality Control

Analysis of the QA/QC has been undertaken for the analytical results as summarised in **Table 8.1** and discussed in **Section 8.2**. Detailed QA/QC results are included in the laboratory reports in **Appendix K**, and in the Quality Assurance/Control Summary in **Appendix L.**

Table 8.1 QA/QC Results Summary

Data Quality Indicator	Results	DQI met?
Precision		
Soil blind duplicates (intra laboratory)	0-138 % RPD Intra laboratory samples were analysed at a rate exceeding 1 in 20 samples for chemical COPCs.	Partial[1]
Soil split duplicates (inter laboratory)	0-012 % RPD Inter laboratory samples were analysed at a rate exceeding 1 in 20 samples for chemical COPCs.	Partial[1]
Groundwater blind and split duplicates (intra- and inter-laboratory)	0-100 % RPD Intra laboratory samples were analysed at a rate of 1 in 3 samples.	Partial[1]
Laboratory duplicates	0-50 % RPD Intra laboratory samples were analysed at a rate exceeding 1 in 20 samples.	Yes
Accuracy		
Surrogate spikes	27-148 % Recovery Surrogate spikes were completed for all organic samples	Partial[1]
Laboratory Control Samples	34-129 % Recovery An LCS sample was completed with every laboratory batch for all media analysed.	Partial[1]
Matrix spikes	37-131 % Recovery Matrix spikes were completed at a rate exceeding 1 in 20 samples	Partial[1]
Representativeness		
Sampling appropriate for media and analytes	All sampling conducted in accordance with JBS&G procedures	Yes
Samples extracted and analysed within holding times.	Yes	Yes
Trip spikes	87-120 % 1 trip blank was analysed alongside each laboratory batch submitted (2 total)	Yes
Trip blanks	<LOR 1 trip blank was analysed alongside each laboratory batch submitted (2 total)	Yes
Rinsate blank	<LOR 1 rinsate blank was collected during each sampling event (2 total)	Yes
Laboratory blank	<LOR 1 laboratory blank was analysed for all relevant analytes for each laboratory batch	Yes
Comparability		
Standard operating procedures used for sample collection & handling	Three JBS&G field scientists used standard operating procedures throughout works.	Yes
Standard analytical methods used	Standard analytical methods used as listed detailed in **Appendix K**	Yes
Consistent field conditions, sampling staff and laboratory analysis	Sampling was conducted by one field staff member using standard operating procedures in the same conditions throughout the works. The laboratories remained consistent throughout the investigation.	Yes
Limits of reporting appropriate and consistent	Limits of reporting were consistent and appropriate.	Yes

Data Quality Indicator	Results	DQI met?
Completeness		
Soil description & Chains of Custody completed	All field logs and Chain of Custody documentation was completed appropriately.	Yes
Appropriate documentation	All appropriate field documentation processes were undertaken. Field logs and Calibration/ Decontamination records are included as **Appendix M** and **O**.	Yes
Satisfactory frequency/result for QC samples	The QC results are considered adequate for the purposes of the investigation.	Yes
Data from critical samples is considered valid	Data from critical samples is considered valid.	Yes
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria	Appropriate laboratory analysis methods and detection limits were considered to have been achieved during the field and laboratory phases of this investigation.	Yes

1. See discussion of DQI exceedances in **Section 8.2**.

8.1 QA/QC Discussion

8.1.1 Precision

Soil Duplicates

Three primary samples were split into intra- and inter-laboratory duplicate samples (TP01 0.2-0.3, TP03 0-0.15 and TP04 0.2-0.3). Soil inter- and intra-lab duplicate samples were analysed for COPCs at the following rates:

- 3 duplicates per 56 primary samples were analysed for heavy metals and PAHs;
- 3 duplicates per 29 primary samples were analysed for TRHs;
- 3 duplicates per 32 primary samples were analysed for BTEX compounds;
- 2 duplicates per 21 primary samples for OCPs;
- 1 duplicate per 15 primary samples were analysed for PAHs, phenols and asbestos; and
- 1 duplicate per 4 primary samples for PCBs.

Concentrations of COPCs reported in intra and inter laboratory duplicate samples were generally within the acceptable limits of deviation from the primary sample results for all analytes. Exceptions are listed in **Appendix L**. Where elevated RPDs are present, they are associated with samples of heterogeneous fill materials. The elevated RPDs for the intra-laboratory and inter-laboratory duplicates are considered to be the result of heterogeneity in contaminant distribution within the sampled media. The elevated RPD results are considered not to have adversely affected the data set for the purpose of making decisions identified in **Section 6.1.2.**

Groundwater Duplicates

One primary groundwater sample was split into an intra- and inter-laboratory duplicate: MW01. Duplicates for all groundwater analytes (heavy metals, physicochemical parameters, TRHs, BTEX compounds, PAHs and phenols) were analysed at a rate of 1 duplicate per 3 primary samples. The RPDs for the intra-laboratory and inter-laboratory duplicates are presented in **Appendix L**. Analytes were generally within the acceptable limits of deviation from the primary sample results, with the exception of copper and zinc, which respectively had RPDs of 100 and 69 between the primary and intra-laboratory duplicate. Given these results were orders of magnitude below the relevant assessment criteria, these minor deviations are considered not to have affected the data set precision for the intended purpose (**Section 6.1.2**).

Laboratory Duplicates

Review of the laboratory duplicate RPDs indicates that all duplicate samples returned values within the acceptable limits of deviation from the primary samples.

Summary of Precision

Review of DQIs indicate that the DQO have been achieved with respect to precision of the data set.

8.1.2 Accuracy

Accuracy DQIs are discussed following:

- Surrogate spike recoveries were mostly within the acceptable range of 70-130 % for primary samples analysed. A total of 52 surrogate spike analyses were recovered outside of the DQI range, as detailed in **Appendix L**. Under recoveries of all organic analyte surrogates were reported, with the majority of under-recoveries reported for BTEX surrogate 4-bromofluorobenzene;
- LCS recoveries were generally within the acceptable range of 70-130 % for samples analysed. A total of 20 LCS recoveries were outside of the DQI range, as detailed in Appendix L. Under recoveries were limited to phenols and ranged from 34-67 %.
- Matrix spike recoveries were generally within the acceptable range of 70-130 % for samples analysed. A total of 15 matrix spike recoveries were outside of the DQI range, as detailed in **Appendix L**.

These deviations from the acceptance criteria were not considered to have an impact on the conclusions of this assessment as no organic compounds were reported within one order of magnitude of the assessment criteria for the samples to which the under-recoveries pertain. The laboratory did not provide explanation for the under/over recoveries given they were within the laboratory (NATA) accredited limits for the analytical methods.

On this basis the DQIs for accuracy are considered to have been achieved for this investigation.

8.1.3 Representativeness

Sample Holding Time

All samples were analysed within holding times specified in **Table 6.2** and as per the relevant NATA accredited methodology requirements.

Rinsate Samples

A rinsate sample was collected following decontamination of all non-disposable sampling equipment for sampling event (29, 30 and 31 January – event 1, and 1 February – event 2) of the primary soil and groundwater sampling (totalling two rinsate samples). Analyte concentrations were not detected above the laboratory limit of reporting in the rinsate samples. On this basis, no evidence for cross contamination between sample locations has been identified. Decontamination records are presented in **Appendix M**.

Trip Spike, Trip Blank and Laboratory Blank Samples

A trip spike was submitted with each laboratory batch for soil and groundwater samples collected during the assessment. Trip spike recoveries for analytes was within the acceptable limit of 70-130 %.

A trip blank was submitted with each laboratory batch for soil or groundwater samples collected during the assessment. There were no reported concentrations of TRH or BTEX compounds above the laboratory LOR.

Laboratory blanks analysed were all reported to contain concentrations less than the laboratory LOR.

Decontamination Procedure

All field equipment was decontaminated appropriately as per the procedure identified in **Section 6.2.1**. Collected samples were immediately placed into the sample containers, sealed and then placed into chilled eskies to minimise volatile loss.

Summary of Representativeness

Based on the above comments, the DQIs for representativeness were considered to have been satisfactorily achieved.

8.1.4 Comparability

Eurofins, the primary laboratory (soil and groundwater), and Envirolab Services, the secondary laboratory (soil and groundwater), are NATA accredited for all analytical methods used. The laboratories use similar analytical methods and the analytical data were comparable between laboratories as indicated by the results of duplicate analysis.

The sampling methodology utilised for the assessment was consistent, as conducted by experienced JBS&G personnel in accordance with standard JBS&G sampling methods.

8.1.5 Completeness

All laboratory and field documentation are complete and correct. Chain of custody documentation is provided with laboratory reports in **Appendix K**. Bore hole logs are presented in **Appendix N.**

The frequency of analysis of all QA/QC samples was considered appropriate and valid.

8.1.6 Sensitivity

The adopted soil analytical methods provided suitable LORs for the purpose of making decisions identified in **Section 7.1.2**.

8.1.7 QA/QC Conclusions

The field sampling and handling procedures across the site produced QA/QC results which indicate that soil and groundwater collected is of an acceptable quality.

The NATA certified laboratory reports indicate that the project laboratories were achieving levels of performance within its 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 soil data is of an acceptable quality upon which to draw conclusions regarding the environmental condition of the site.

9. Results

9.1 Lithology and Soil Observations

Soil observations are presented in **Appendix N**, a summary of observations of lithology and soil are summarised following. Example photographs exhibiting soils encountered are provided in **Appendix A** (**Photograph 69 to 74**).

- Limited fill material was present at the site, generally in areas of former and/or current buildings. The material typically comprised reworked natural soils (clays) consistent with the soil encountered throughout the site, and was generally absent of indicators of potential contamination. Anthropogenic inclusions comprising potential contamination sources were identified in fill at locations TP01 (ACM 0.1-0.3 m bgl) and TP03 (slag and asphalt, 0-0.4 m bgl). Anthropogenic materials were similarly identified at other locations on the site, comprising low risk materials (primarily plastic and gravels);
- Disturbed natural soils were encountered at the majority of locations across the site. Typically, the disturbed natural soils comprised mixed soils and organic matter (roots and rootlets);
- Natural soils varied between landforms, comprised heavy set silty clays, with scattered intermixed shale/ironstone gravels, overlying shale bedrock on upper slopes, and shallow sands/clayey sands (0-0.4 m bgl) overlying clay on lower slopes; and
- Weathered shale bedrock was encountered at MW01 (2.2 m bgl) and MW02 (6.5 m bgl).

9.2 Soil Asbestos Field Quantification and Laboratory Analytical Results

All soil samples were screened on site for the presence of asbestos, in accordance with the procedure presented in WA DOH (2009). ACM was observed within one sample of soils screened at location TP01 (0-0.3) and assessed against the adopted site assessment criteria.

10 L of soil was screened, with a total mass of ~23.4 kg[18]. A single 60 g fragment of ACM was identified, with the presence of confirmed by laboratory analysis (Chrysotile, amosite and crocidolite asbestos detected). Based on the procedure for determining asbestos concentrations in soil (NEPC 2013) it was determined that the ACM fragment was present at a concentration of 0.0384 % w/w. Less than the adopted site assessment criterion.

In addition to field screening, a total of 15 soil samples were analysed for concentrations of asbestos fines and friable asbestos. No asbestos was detected in any of the analysed samples at the reporting limit of 0.001 % w/w. It is noted that one of the samples analysed comprised soil surrounding the identified ACM fragment discussed above.

9.3 Soil Contaminant Analytical Results

Detailed laboratory reports and chain of custody documentation are provided in **Appendix L**. Summarised soil analytical data from the current assessment are presented in:

- Table A Soil Analytical Results; and
- Table B Groundwater Analytical Results.

9.3.1 Heavy Metals

A total of 56 samples (32 fill samples and 24 natural samples) were analysed for concentrations of heavy metals in soil. Individual heavy metal concentrations were all reported at concentrations less than the site assessment criteria and were within typical background ranges.

[18] Based on a conservatively assumed soil density of 1.56 kg/m^3.

9.3.2 Polycyclic Aromatic Hydrocarbons

A total of 15 samples (12 fill samples, of which 1 sample was observed to contain slag and asphaltic gravels, and 3 natural samples) were analysed for concentrations of PAHs in soil. Total PAH, B(a)P and carcinogenic PAHs as B(a)P Toxic Equivalence Quotient (TEQ) concentrations were not detected above the laboratory LOR or at concentrations in exceedance of the site assessment criteria.

9.3.3 Total Recoverable Hydrocarbons

A total of 29 samples (20 fill samples and 9 natural samples) were analysed for TRH concentrations in soil. Concentrations of TRHs were not detected above the site assessment criteria.

9.3.4 Benzene, Toluene, Ethylbenzene and Xylene

A total of 32 samples (23 fill samples and 9 natural samples) were analysed for BTEX concentrations in soil. BTEX compound concentrations were not detected above the laboratory LOR or at concentrations in exceedance of the site assessment criteria..

9.3.5 Organochlorine Pesticides

A total of 21 samples (16 fill samples and 5 natural samples) were analysed for OCP concentrations in soil. OCP concentrations were not detected above the laboratory LOR or at concentrations in exceedance of the site assessment criteria..

9.3.6 Polychlorinated Biphenyls

A total of 4 samples (3 fill samples and 1 natural sample) were analysed for concentrations of PCBs in soil. PCBs concentrations were not detected above the laboratory LOR or at concentrations in exceedance of the site assessment criteria..

9.3.7 Phenols

A total of 15 samples (12 fill samples and 3 natural samples) were analysed for concentrations of phenols soil. Phenols concentrations were not detected above the laboratory LOR or at concentrations in exceedance of the site assessment criteria..

9.4 Groundwater Field Observations

A groundwater monitoring event (GME) was conducted on 1 February 2019. A summary of groundwater conditions encountered during the GME is presented in **Table 9.1**, **Table 9.2** and **Table 9.3** below. Groundwater monitoring well locations are provided on **Figure 5**. Field sheets recorded during the GME are presented in **Appendix O.**

A registered surveyor was engaged to determine the position of all groundwater monitoring wells sampled as part of the investigation. The surveyor utilised real-time kinematic global navigation satellite system for latitudinal, longitudinal and relative level positioning of well heights. The surveyors report is provided in **Appendix P**.

Table 9.1 Groundwater Geospatial Characteristics

Well Reference	Easting (MGA56)	Northing (MGA56)	Surface Level m AHD	Top of Pipe m AHD	Screened Interval (m AHD	Depth to SWL (m bTOC)	Standing Water Level (m AHD)
MW01	294632.8	6254300.6	43.65	43.65	32.65-35.65	4.435	39.22
MW02	294031.3	6254327.1	34.67	35.43	24.23-27.23	2.975	32.46
MW03	294232.2	6253881.8	36.12	36.89	26.39-29.39	2.677	34.21

Monitoring wells were installed to intercept perched water within unconsolidated site soils, overlying the weathered shale bedrock. The basal depth of the screened intervals ranged from 7.3 to 9.2 m bgl.

Based on the data presented above, and assuming relatively consistent subsurface conditions are present across the site, the inferred groundwater flow direction is approximately west direction with a gradient of 37 mm per metre.

Table 9.2 Groundwater Field Physicochemical Parameters

Well Reference	Dissolved Oxygen (mg/L)	Electrical Conductivity (µS/cm)	Total Dissolved Solids[2] (mg/L)	pH (units)	Oxidation Reduction Potential (mV)[1]	Temperature (°C)
MW01	2.83	22 663	14 504	6.55	150.3	19.0
MW02	0.06	22 370	14 317	6.75	-35.2	21.3
MW03	0.37	33 590	21 498	6.55	124.1	19.9

1. Oxidation Reduction Potential was measured with an Ag/AgCl probe against a reference solution of 3.5 moles potassium chloride and deionized water.
2. Values for total dissolved solids have been calculated in accordance with the methodology provided in NHMRC (2017), based on a conversion factor of 0.64 from electrical conductivity (µS/cm) to total dissolved solids (mg/L)

Table 9.3 Groundwater Field Physical Observations

Well Reference	Odour	Sheen	Turbidity	Colour
MW01	None observed	None observed	Clear	Colourless
MW02	None observed	None observed	Highly turbid	Yellow
MW03	None observed	None observed	Turbid	Light brown

9.5 Groundwater Analytical Results

Three groundwater samples were collected and submitted for laboratory analysis. Detailed laboratory reports and chain of custody documentation are provided in **Appendix K.** Groundwater analytical data for COPCs and chemical properties are presented in **Table B**. The results are discussed in **Section 9.5.1** to **Section 9.5.5**.

9.5.1 Hardness, Salinity and Chemical Properties

The results of field and laboratory analysis of groundwater properties are presented as follows:

- pH ranged from 5.8 to 7.2 pH units, as measured during field works and confirmed by laboratory analysis;
- Hardness ranged from 1000 mg/L to 1300 mg/L;
- Concentrations of chloride ranged from 8400 mg/L to 14 000 mg/L;
- Concentrations of sulphate ranged from 820 mg/L to 1100 mg/L; and
- Electrical conductivity ranged from 21 000 µS/cm to 40 000 µS/cm.

9.5.2 Heavy Metals

Heavy metals concentrations in the analysed samples were reported to be below the adopted site assessment criteria in all samples analysed.

9.5.3 Total Recoverable Hydrocarbons

Low levels of mid-fraction TRHs were detected in sample MW02. Silica gel clean-up and subsequent reanalysis for TRHs, indicated that no TRHs were present above the laboratory LORs for relevant fractions.

9.5.4 Benzene, Toluene, Ethylbenzene and Xylene

BTEX compounds were not detected above the laboratory LOR or the site assessment criteria in the analysed samples.

9.5.5 Polycyclic Aromatic Hydrocarbons

PAH compounds were generally not detected above the laboratory LOR and were not detected above the site assessment criteria in the analysed samples.

9.5.6 Phenols

Phenols were generally not detected above the laboratory LOR and were not detected above the site assessment criteria in the analysed samples.

10. Discussion

10.1 Potential Risks to Future Onsite Receptors

Desktop review and detailed site inspection identified several potential areas of environmental concern at the site. Intrusive investigation, media sampling and laboratory analysis of representative AECs was undertaken in accordance with the methodology described in **Section 6**.

No analyte concentrations were detected in site media at concentrations exceeding the site screening assessment criteria. The vast majority of laboratory results from the intrusive investigations were lower than detection limits or lower than the adopted assessment criteria. The consistency of the results indicates the level of uncertainty in the assessments is low and the probability that contamination may be present that has not been detected is also considered to be low.

It is noted that trace levels of hydrocarbons were detected in groundwater for which no site screening criteria were adopted. The adopted laboratory methodology for analysis for bulk extractable hydrocarbons (LTM-ORG-2010 TRH C_6-C_{40}) utilises a solvent extraction and quantification that does not discriminate between compounds containing exclusively hydrogen and carbon and non-hydrocarbon compounds (containing oxygen, nitrogen, sulfur or other atoms in addition to hydrogen and carbon). Silica gel clean-up removes non-hydrocarbons from the extract prior to quantification. By deduction, the detections reported in MW02 by the bulk extracted analysis were non-hydrocarbon compounds, which is typical of natural organics not related to petroleum. Natural organic compounds are considered not to present an unacceptable risk to receptors.

In accordance with the decision-making procedure presented in **Section 6.1.5**, no potential risks to future onsite receptors were identified as part of this investigation.

10.2 Background Contamination

In-situ natural soils were encountered at all investigation locations across the site. The soil samples analysed from natural soils were reported to have contaminant concentrations within typical urban background concentration ranges, as described in NEPC (2013). No contaminants were identified in natural soil samples at concentrations exceeding adopted site assessment criteria.

10.3 Chemical Mixtures

No significant contaminant concentrations were identified in this investigation.

10.4 Aesthetic Issues

In accordance with section 3.6.2 of NEPC (2013) the following considerations regarding circumstances which would trigger an assessment of aesthetics the investigation did not identify:

- Highly malodourous site media;
- Hydrocarbon sheens;
- Discoloured chemical deposits or soil staining with chemical wastes;
- Large monolithic deposits;
- Putrescible refuse; or
- Soils containing residue from animal burial.

With consideration of the above, and given the proposed land use, comprising a commercial facility on which substantial building and development is anticipated to occur prior to occupation, no requirement for consideration of aesthetics has been triggered during the site investigation.

10.5 Potential Offsite Migration of Contaminants

Based on the absence of COPCs in soil and groundwater samples analysed, there is considered not to be any unacceptable risk of potential contaminant migration from the site.

10.6 Site Management Strategy

Based on the proposed land use, the results of this assessment and the limitations presented in **Section 12**, no site contamination relating to land use suitability have been identified which requires specific management under a site management strategy.

A construction environmental management plan (CEMP), including an unexpected finds protocol, should be developed for the site to ensure that typical site management strategies are implemented and that no contamination is introduced to the site during redevelopment.

11. Conclusions and Recommendations

Based on the scope of investigation undertaken and the proposed commercial/industrial land use for the site, and subject to the limitations in **Section 12**, the following conclusions are provided:

- Desktop assessment and detailed inspection of the site has not identified the potential for gross and/or widespread contamination to exist at the site. Potential for localised impacts was identified, consistent with the historical use of the site for a combination of commercial (Mamre Produce) agricultural, recreational and rural residential purposes;
- Potential contamination impacts were assessed by advancement of 48 intrusive investigation locations, field screening of site media and subsequent laboratory analysis for COPCs identified in **Section 5.1**. No COPCs were identified within site media samples analysed which exceeded relevant site screening assessment criteria for commercial/industrial land use site suitability;
- No background contamination, chemical mixtures or the potential risk of migration of contaminants from the site has been identified;
- Potential aesthetic issues were identified at two locations within the site, as detailed in **Section 10.4**. No trigger for further assessment of aesthetics was identified during the site investigation;
- A fragment of bonded ACM was identified in a single location (TP01). With respect to the concentration of ACM within the broader soil matrix, this occurrence does not comprise an exceedance of site suitability criteria, but will require management during site development under the *Work Health and Safety Regulation 2017.*
- From a contaminated land perspective, the site is considered suitable for the proposed development.

A CEMP, including an unexpected finds protocol, should be developed for the site to ensure that typical site management strategies are implemented and no contamination is introduced to the site during redevelopment.

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.

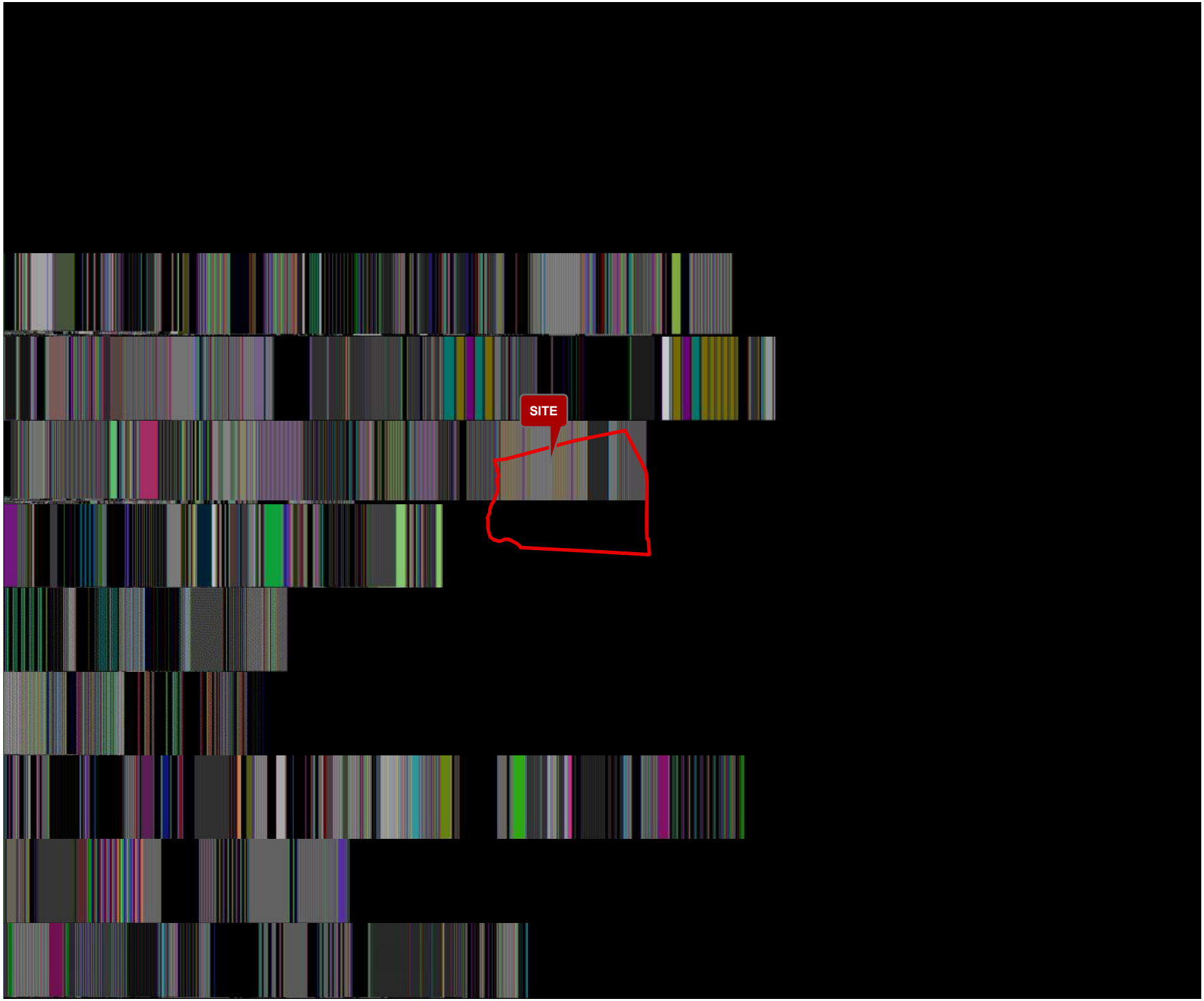
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the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

[redacted]

Job No: 54963

Client: Altis Property Group

Version: R01 Rev A	Date: 14-Feb-2019
Drawn By: AV	Checked By: RH

Scale 1:45,000

0 510 1,020

metres

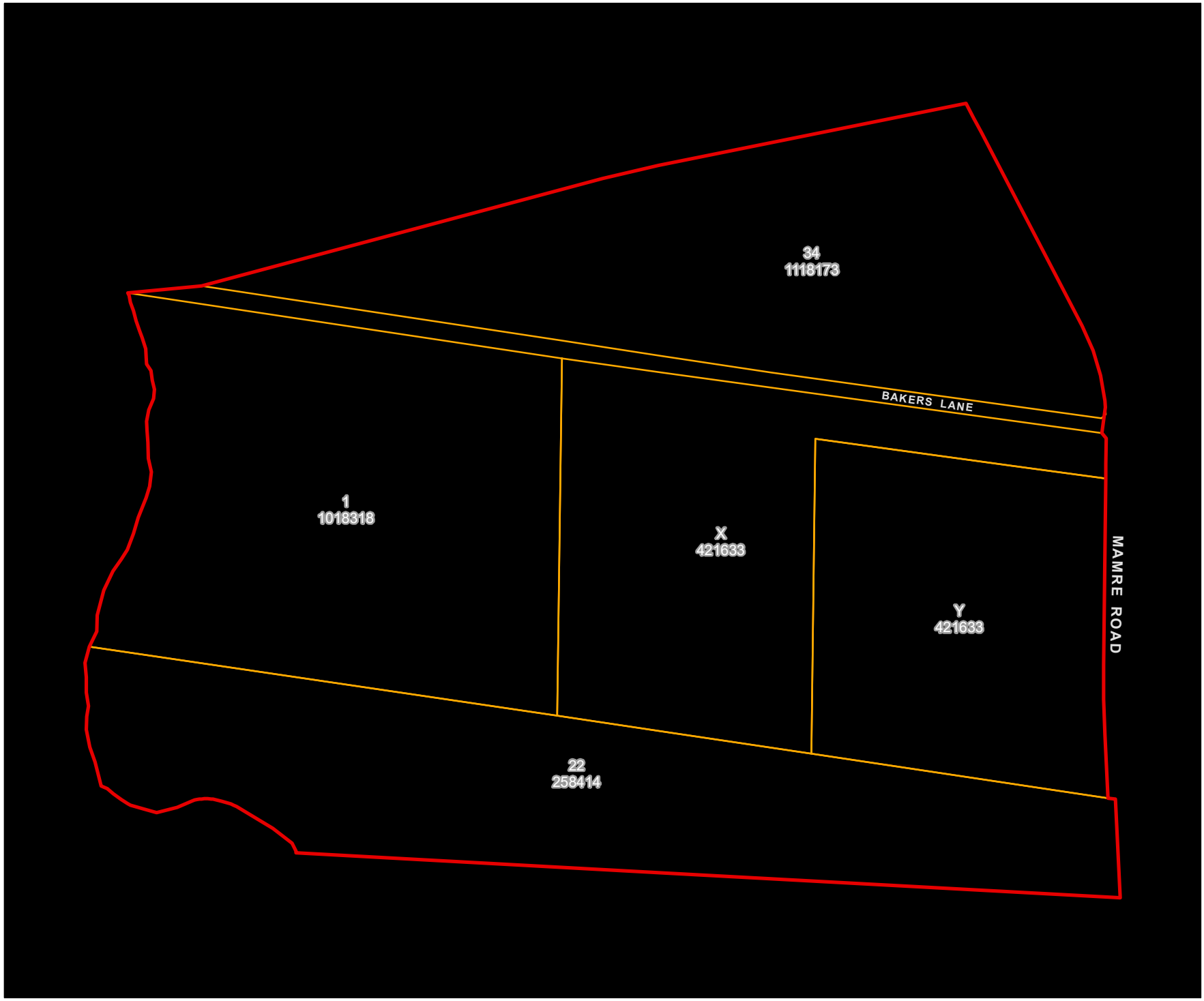
Coor. Sys. GDA 1994 MGA Zone 56

Mamre Road
Kemps Creek, NSW

SITE LOCATION

FIGURE 1

File Name: N:\Projects\Altis Property Group\54963 Mamre Road DSI\GIS\Maps\R01 Rev A\54963_01_SiteLocation.mxd
Reference: Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA



Legend:

- Approximate Site Boundary
- Lot Boundary
- South Creek

[redacted]

Job No: 54963

Client: Altis Property Group

Version: R01 Rev A	Date: 14-Feb-2019
Drawn By: AV	Checked By: RH

Scale 1:7,000

0 80 160

metres

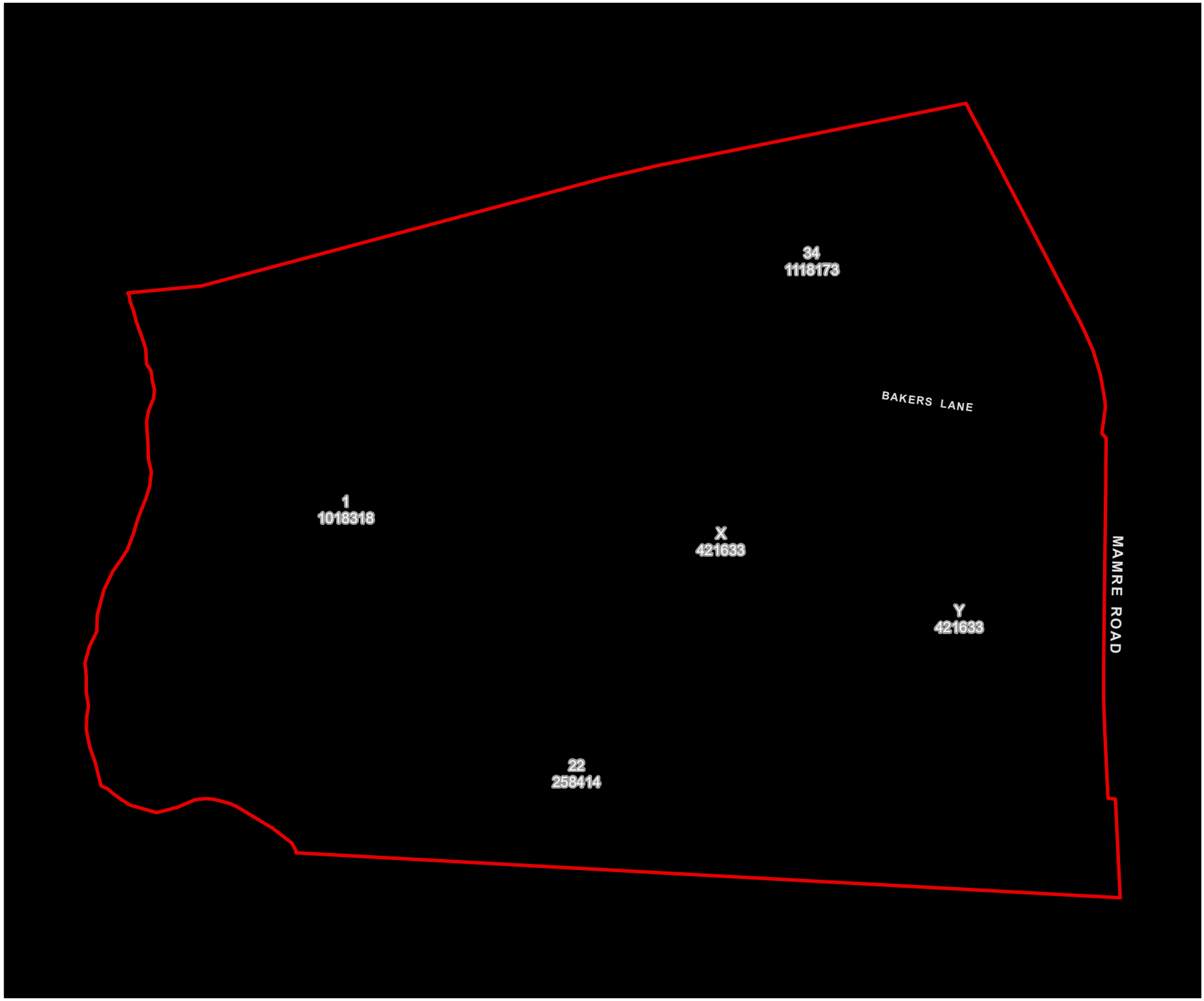
Coor. Sys. GDA 1994 MGA Zone 56

Mamre Road
Kemps Creek, NSW

SITE LAYOUT

FIGURE: 2

File Name: N:\Projects\Altis Property Group\54963 Mamre Road DSI\GIS\Maps\R01 Rev A\54963_02_SiteLay.mxd
Reference: Near Maps - http://www.nearmap.com.au/. Imagery 29 Dec 2018.



Legend:

- Approximate Site Boundary
- Lot Boundary
- Drainage Channels
- Lower Slopes
- Upper Slopes

[redacted]

Job No: 54963

Client: Altis Property Group

Version: R01 Rev A	Date: 21-Feb-2019
Drawn By: AV	Checked By: RH

Scale 1:7,000

0 80 160

metres

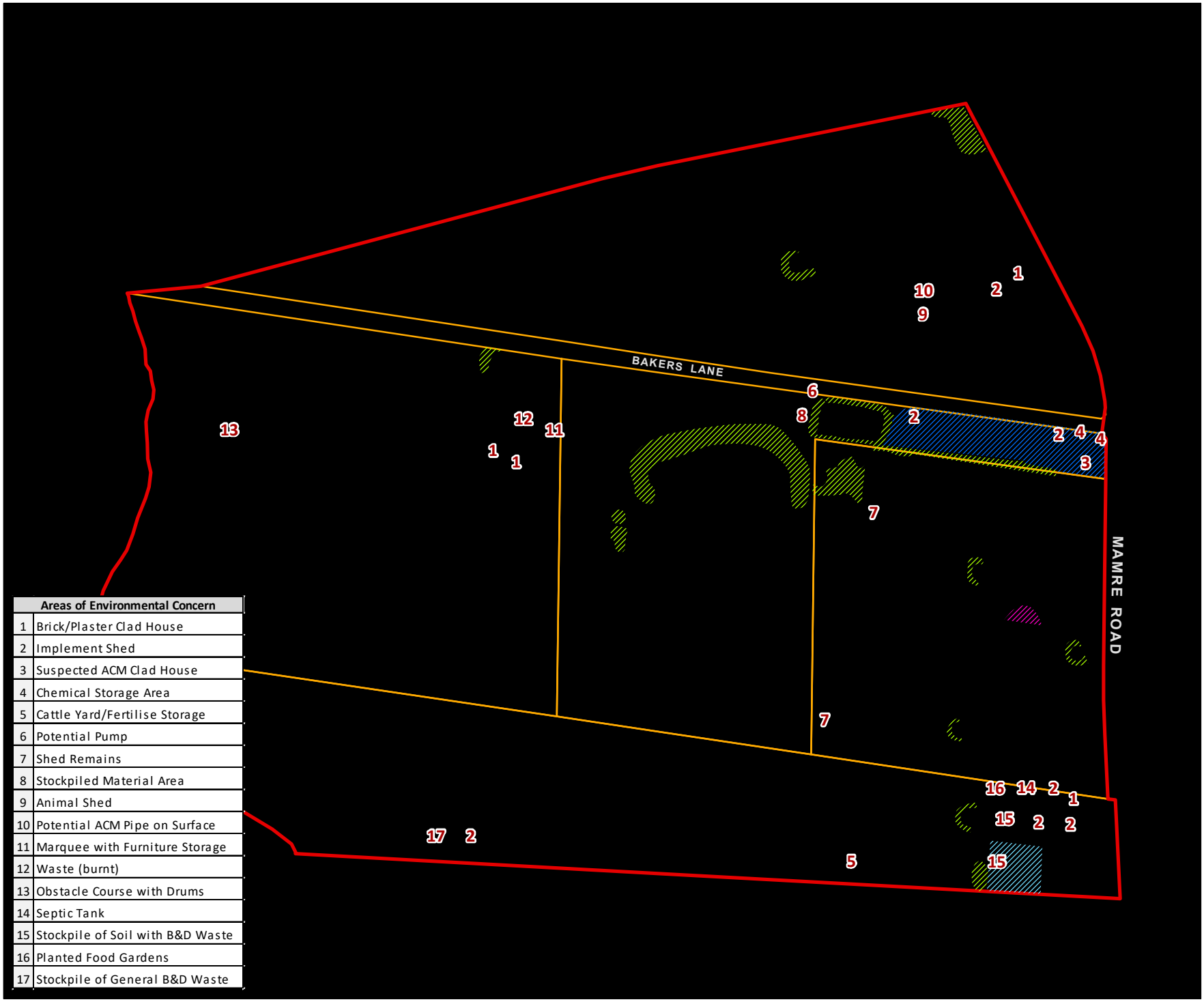
Coor. Sys. GDA 1994 MGA Zone 56

Mamre Road
Kemps Creek, NSW

SITE LANDFORMS

FIGURE: 3

File Name: N:\Projects\Altis Property Group\54963 Mamre Road DSI\GIS\Maps\R01 Rev A\54963_03_SiteLandforms.mxd
Reference: Near Maps - http://www.nearmap.com.au/. Imagery 29 Dec 2018.



Areas of Environmental Concern	
1	Brick/Plaster Clad House
2	Implement Shed
3	Suspected ACM Clad House
4	Chemical Storage Area
5	Cattle Yard/Fertilise Storage
6	Potential Pump
7	Shed Remains
8	Stockpiled Material Area
9	Animal Shed
10	Potential ACM Pipe on Surface
11	Marquee with Furniture Storage
12	Waste (burnt)
13	Obstacle Course with Drums
14	Septic Tank
15	Stockpile of Soil with B&D Waste
16	Planted Food Gardens
17	Stockpile of General B&D Waste

Legend:

- Approximate Site Boundary
- Lot Boundary
- Approximate Sprayed Area
- Inferred Area of Fill
- Stockpiled Concrete/Vegetable Boxes
- Stockpiled Material/Livestock Supplies
- 1 Site Features

[redacted]

Job No: 54963

Client: Altis Property Group

Version: R01 Rev A	Date: 15-Feb-2019
Drawn By: AV	Checked By: RH

Scale 1:7,000

0 80 160
metres

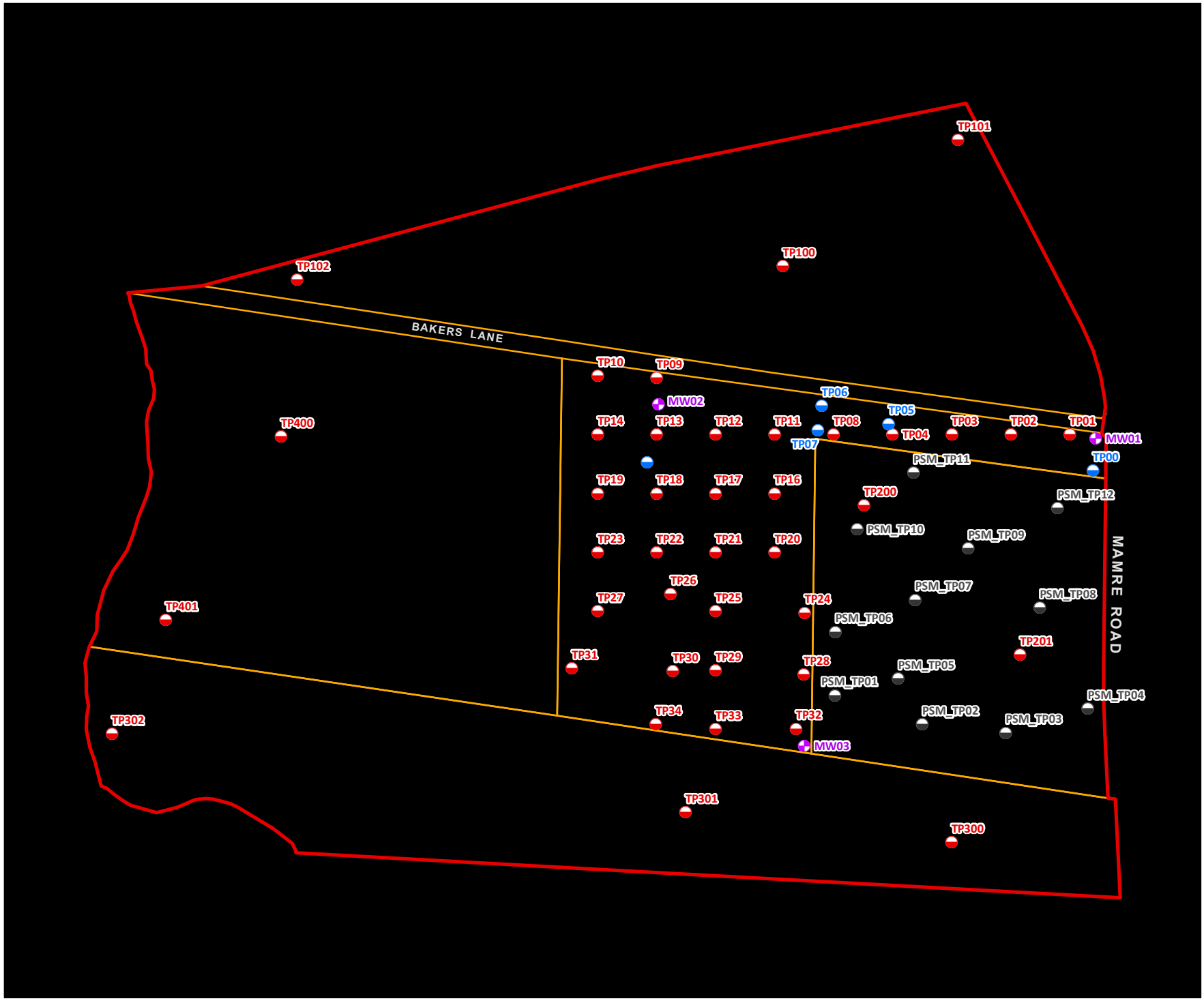
Coor. Sys. GDA 1994 MGA Zone 56

Mamre Road
Kemps Creek, NSW

SITE FEATURES & AREAS OF ENVIRONMENTAL CONCERN

FIGURE: 4

File Name: N:\Projects\Altis Property Group\54963 Mamre Road DSI\GIS\Maps\R01 Rev A\54963_04_AECs.mxd
Reference: Near Maps - http://www.nearmap.com.au/. Imagery 29 Dec 2018.



Legend:

- Approximate Site Boundary
- Lot Boundary

Historical Samples

- PSM 2017

Current Sample Locations

- Soil Sample Location
- Soil Sample Location - Targeted
- Soil Sample - Targeted / Groundwater Monitoring Well Location

[redacted]

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Scale 1:7,000

0 80 160

metres

Coor. Sys. GDA 1994 MGA Zone 56

Mamre Road
Kemps Creek, NSW

CURRENT AND HISTORICAL SAMPLE LOCATIONS

FIGURE: 5

File Name: N:\Projects\Altis Property Group\54963 Mamre Road DSI\GIS\Maps\R01 Rev A\54963_05_SampleLoc.mxd
Reference: Near Maps - http://www.nearmap.com.au/. Imagery 29 Dec 2018.

Table A Soil Analytical Results

Table A - Soil Analytical Results
Project Number: 54963
Project Name: Mamre Road, Kemps Creek

	Metals & Metalloids								TPHs (NEPC 1999)					TRHs (NEPC 2013)							BTEXN						
	Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	C10-C16 Fraction	C16-C34 Fraction	C34-C40 Fraction	C10-C40 Fraction (Total)	C10-C16 less Naphthalene (F2)	C6-C10 Fraction	C6-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Naphthalene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	2	0.4	1	1	1	0.1	1	1	20	20	50	50	50	50	100	100	50	50	20	20	0.1	0.1	0.1	0.1	0.2	0.3	0.005
NEPC 2013 EIL, EILs Fresh Sediment	168			134	2103		61	292																			370
NEPM 2013 ESL Commercial and Industrial, Coarse Soil															1700[#1]	3300[#1]		170[#2]		215[#2]	75[#1]	165[#1]	135[#1]			180[#1]	
NEPM 2013 ESL Commercial and Industrial, Fine Soil															2500[#1]	6600[#1]		170[#2]		215[#2]	95[#1]	185[#1]	135[#1]			95[#1]	
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																											
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																											
NEPM 2013 Mgnt Limits - Commercial and Industrial, Coarse														1000[#8]	3500	10000			700[#9]								
NEPM 2013 Mgnt Limits - Commercial and Industrial, Fine														1000[#8]	5000	10000			800[#9]								
NEPM 2013 Soil HIL D	3000[#10]	900	3600[#11]	240000	1500[#12]	730[#13]	6000	400000																			
NEPM 2013 Soil HSL D for Vapour Intrusion - Clay 0 to <1m																		NIL[#20]		310[#21]	4	NIL[#20]	NIL[#20]			NIL[#20]	NIL[#20]
NEPM 2013 Soil HSL D for Vapour Intrusion - Sand 0 to <1m																		NIL[#20]		260[#21]	3	NIL[#20]	NIL[#20]			230	NIL[#20]

Sample ID	Location	Depth	Date	Matrix																								
MW01 0.4-0.5	MW01	0.4-0.5	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW01 0-0.2	MW01	0-0.2	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW01 1.0-1.1	MW01	1-1.1	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW01 1.5-1.6	MW01	1.5-1.6	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW01 5.5-5.6	MW01	5.5-5.6	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW02 0.4-0.5	MW02	0.4-0.5	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW02 1.2-1.3	MW02	1.2-1.3	29/01/2019	Natural	5.3	<0.4	14	15	13	<0.1	9.9	28	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
MW02 1.9-2.0	MW02	1.9-2	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW02 3.0-3.1	MW02	3-3.1	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW02 6.0-6.1	MW02	6-6.1	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW03 0.4-0.5	MW03	0.4-0.5	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW03 0-0.2	MW03	0-0.2	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW03 1.5-1.6	MW03	1.5-1.6	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW03 2.9-3.0	MW03	2.9-3	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP00 0.2-0.3	TP00	0.2-0.3	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP00 0.4-0.5	TP00	0.4-0.5	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP00 0-0.15	TP00	0-0.15	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP00 1.0-1.1	TP00	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP01	TP01	0-0.3	30/01/2019	Material	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP01 0.2-0.3	TP01	0.2-0.3	30/01/2019	Fill	15	1.3	49	83	150	<0.1	38	240	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
QA20190130MN_01	TP01	0.2-0.3	30/01/2019	Fill	18	0.9	47	64	380	<0.1	30	180	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
QC20190130MN_01	TP01	0.2-0.3	30/01/2019	Fill	10	0.6	23	27	74	<0.1	14	91	<25	<50	<100	<100	-	<50	<100	<100	<50	<50	<25	<25	<0.2	<1	<0.5	<1	<2	<1	<1
TP01 1.0-1.1	TP01	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP02 0.2-0.3	TP02	0.2-0.3	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP02 0-0.15	TP02	0-0.15	30/01/2019	Fill	26	<0.4	41	67	47	0.2	26	360	<20	<20	100	150	250	<50	200	130	330	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP02 1.0-1.1	TP02	1-1.1	30/01/2019	Natural	7.5	<0.4	21	18	15	<0.1	7.4	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP03 0-0.15	TP03	0-0.15	30/01/2019	Fill	8.1	<0.4	24	27	41	<0.1	17	100	<20	<20	120	150	270	<50	210	<100	210	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
QA20190130MN_03	TP03	0-0.15	30/01/2019	Fill	10	<0.4	28	32	47	<0.1	15	110	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
QC20190130MN_03	TP03	0-0.15	30/01/2019	Fill	7	<0.4	18	45	36	0.1	13	85	<25	<50	<100	170	-	<50	210	170	380	<50	<25	<25	<0.2	<1	<0.5	<1	<2	<1	<0.1
TP04 0.2-0.3	TP04	0.2-0.3	30/01/2019	Fill	4.3	<0.4	16	16	12	<0.1	5.7	18	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
QA20190130MN_04	TP04	0.2-0.3	30/01/2019	Fill	2.7	<0.4	8.5	8.7	8.4	<0.1	<5	10	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
QC20190130MN_04	TP04	0.2-0.3	30/01/2019	Fill	<4	<0.4	14	14	12	<0.1	5	13	<25	<50	<100	<100	-	<50	<100	<100	<50	<50	<25	<25	<0.2	<1	<0.5	<1	<2	<1	<1
TP04 0-0.1	TP04	0-0.1	30/01/2019	Fill	13	<0.4	14	69	47	0.1	8.7	270	<20	<20	220	230	450	<50	340	100	440	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP05 0-0.1	TP05	0-0.1	30/01/2019	Fill	7.1	<0.4	16	25	26	<0.1	9	57	<20	<20	170	220	390	<50	310	<100	310	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP05 1.0-1.1	TP05	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP05 1.5-1.6	TP05	1.5-1.6	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06 0.8-0.9	TP06	0.8-0.9	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06 0-0.2	TP06	0-0.2	29/01/2019	Fill	18	<0.4	27	57	25	<0.1	14	190	<20	<20	62	140	202	<50	180	120	300	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP07 0-0.1	TP07	0-0.1	29/01/2019	Fill	22	<0.4	24	27	18	<0.1	13	45	<20	<20	<50	63	63	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP08 0-0.1	TP08	0-0.1	1/02/2019	Fill	6.1	<0.4	15	17	16	<0.1	10	26	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-
TP09 0.0-0.1	TP09	0-0.1	30/01/2019	Fill	11	<0.4	45	8.9	23	<0.1	<5	9.3	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP09 1.7-1.8	TP09	1.7-1.8	30/01/2019	Natural	<2	<0.4	5.5	6.5	5.4	<0.1	<5	9.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10 0.4-0.5	TP10	0.4-0.5	1/02/2019	Natural	12	<0.4	31	17	16	<0.1	6.2	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10 0-0.1	TP10	0-0.1	1/02/2019	Fill	3.9	<0.4	12	11	15	<0.1	<5	17	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.005
TP11 0-0.1	TP11	0-0.1	30/01/2019	Fill	4.1	<0.4	14	15	14	<0.1	7.3	40	<20	<20	<50	180	180	<50	170	<100	170	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP11 1.1-1.2	TP11	1.1-1.2	30/01/2019	Natural	4.5	<0.4	14	15	11	<0.1	5.5	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12 0-0.1	TP12	0-0.1	30/01/2019	Fill	5.1	<0.4	14	27	42	<0.1	13	220	<20	<20	63	120	183	<50	150	<100	150	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP12 1.0-1.1	TP12	1-1.1	30/01/2019	Natural	4.7	<0.4	14	16	11	<0.1	5.2	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12 1.8-1.9	TP12	1.8-1.9	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP13 0-0.1	TP13	0-0.1	30/01/2019	Fill	5.9	<0.4	19	7.1	15	<0.1	<5	9.5	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP13 1.0-1.1	TP13	1-1.1	30/01/2019	Natural	4.5	<0.4	13	12	6.9	<0.1	5.7	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP14 0-0.1	TP14	0-0.1	1/02/2019	Fill	9.2	<0.4	26	9.9	23	<0.1	<5	28	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP15 0.3-0.4	TP15	0.3-0.4	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15 0-0.1	TP15	0-0.1	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15 1.7-1.8	TP15	1.7-1.8	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP16 0-0.1	TP16	0-0.1	30/01/2019	Natural	7.1	<0.4	16	9.8	9.5	<0.1	5.4	11	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP16 1.0-1.1	TP16	1-1.1	30/01/2019	Natural	5.2	<0.4	15	15	11	<0.1	6.2	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP17 0.3-0.4	TP17	0.3-0.4	30/01/2019	Natural	3	<0.4	13	5.9	9	<0.1	<5	7.8	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP17 0-0.1	TP17	0-0.1	30/01/2019	Fill	4.1	<0.4	17	7.4	11	<0.1	5.3	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP17 1.7-1.8	TP17	1.7-1.8	30/01/2019	Natural	12	<0.4	20	24	24	<0.1	6.3	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 54963
Project Name: Mamre Road, Kemps Creek

					Metals & Metalloids								TPHs (NEPC 1999)					TRHs (NEPC 2013)							BTEXN						
					Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	>C6-C9 Fraction	>C10-C14 Fraction	>C15-C28 Fraction	>C29-C36 Fraction	>C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C40 Fraction (Total)	>C10-C16 less Naphthalene (F2)	>C6-C10 Fraction	>C6-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Naphthalene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					2	0.4	1	1	1	0.1	1	1	20	20	50	50	50	50	100	100	50	50	20	20	0.1	0.1	0.1	0.1	0.2	0.3	0.005
NEPC 2013 EIL, EILs Fresh Sediment					168			134	2103		61	292																			370
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																			1700[#1]	3300[#1]		170[#2]		215[#2]	75[#1]	165[#1]	135[#1]			180[#1]	
NEPM 2013 ESL Commercial and Industrial, Fine Soil																			2500[#1]	6600[#1]		170[#2]		215[#2]	95[#1]	185[#1]	135[#1]			95[#1]	
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																															
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																															
NEPM 2013 Mgnt Limits - Commercial and Industrial, Coarse																		1000[#8]	3500	10000			700[#9]								
NEPM 2013 Mgnt Limits - Commercial and Industrial, Fine																		1000[#8]	5000	10000			800[#9]								
NEPM 2013 Soil HIL D					3000[#10]	900	3600[#11]	240000	1500[#12]	730[#13]	6000	400000																			
NEPM 2013 Soil HSL D for Vapour Intrusion - Clay 0 to <1m																						NIL[#20]		310[#21]	4	NIL[#20]	NIL[#20]			NIL[#20]	NIL[#20]
NEPM 2013 Soil HSL D for Vapour Intrusion - Sand 0 to <1m																						NIL[#20]		260[#21]	3	NIL[#20]	NIL[#20]			230	NIL[#20]
Sample ID	**Location**	**Depth**	**Date**	**Matrix**																											
TP18 0-0.1	TP18	0-0.1	30/01/2019	Fill	6.5	<0.4	15	18	11	<0.1	7.4	27	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP18 1.0-1.1	TP18	1-1.1	30/01/2019	Natural	4.2	<0.4	9	16	12	<0.1	9.3	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP19 0-0.1	TP19	0-0.1	1/02/2019	Fill	7.1	<0.4	21	9	16	<0.1	<5	26	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.005
TP20 0.4-0.5	TP20	0.4-0.5	31/01/2019	Natural	5.6	<0.4	18	17	11	<0.1	5.5	15	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP20 0-0.1	TP20	0-0.1	31/01/2019	Fill	5.1	<0.4	22	38	12	<0.1	8.2	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP20 1.0-1.1	TP20	1-1.1	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP20 1.7-1.8	TP20	1.7-1.8	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP21 0.0-0.1	TP21	0-0.1	31/01/2019	Fill	3	<0.4	10	8.7	11	<0.1	5.2	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP21 0.4-0.5	TP21	0.4-0.5	31/01/2019	Natural	2.7	<0.4	12	<5	7.2	<0.1	<5	<5	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP22 0.6-0.7	TP22	0.6-0.7	31/01/2019	Natural	<2	<0.4	9.5	6.4	8.1	<0.1	<5	8.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP22 0-0.1	TP22	0-0.1	31/01/2019	Natural	2.9	<0.4	13	<5	11	<0.1	<5	7.1	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP22 1.5-1.6	TP22	1.5-1.6	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP23 0-0.1	TP23	0-0.1	1/02/2019	Fill	7.6	<0.4	26	8.2	20	<0.1	5.4	15	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.005
TP24 0.2-0.3	TP24	0.2-0.3	31/01/2019	Natural	5.3	<0.4	17	13	10	<0.1	<5	14	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP24 0-0.1	TP24	0-0.1	31/01/2019	Fill	6.3	<0.4	26	6.8	17	<0.1	<5	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP25 0-0.1	TP25	0-0.1	1/02/2019	Fill	4.9	<0.4	21	36	21	<0.1	6.2	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP26 0.4-0.5	TP26	0.4-0.5	31/01/2019	Natural	3.5	<0.4	15	9.6	12	<0.1	<5	6.2	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP26 0-0.1	TP26	0-0.1	31/01/2019	Fill	4.6	<0.4	28	12	15	<0.1	11	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP27 0-0.1	TP27	0-0.1	1/02/2019	Fill	14	<0.4	42	13	40	<0.1	10	40	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-
TP28 0.4-0.5	TP28	0.4-0.5	31/01/2019	Natural	5.5	<0.4	16	15	12	<0.1	<5	11	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP28 0-0.1	TP28	0-0.1	31/01/2019	Fill	9.4	<0.4	31	6.5	20	<0.1	7	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP30 0-0.1	TP30	0-0.1	31/01/2019	Fill	8.5	<0.4	24	15	13	<0.1	7.8	15	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP30 1.0-1.1	TP30	1-1.1	31/01/2019	Natural	8.1	<0.4	15	20	12	<0.1	7.1	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP31 0.4-0.5	TP31	0.4-0.5	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP31 0-0.1	TP31	0-0.1	31/01/2019	Fill	8.6	<0.4	34	<5	19	<0.1	5.7	12	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP31 1.5-1.6	TP31	1.5-1.6	31/01/2019	Natural	2.4	<0.4	8.8	13	8.1	<0.1	<5	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP32 0.7-0.8	TP32	0.7-0.8	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP32 0-0.1	TP32	0-0.1	31/01/2019	Fill	4.1	<0.4	11	7.6	15	<0.1	<5	15	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP32 1.7-1.8	TP32	1.7-1.8	31/01/2019	Natural	3.1	<0.4	8.9	11	6.1	<0.1	<5	8.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP33 0.8-0.9	TP33	0.8-0.9	31/01/2019	Natural	4.3	<0.4	16	11	8.5	<0.1	5.7	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP33 0-0.1	TP33	0-0.1	31/01/2019	Fill	15	<0.4	53	6.3	31	<0.1	5.5	12	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP34 0.4-0.5	TP34	0.4-0.5	31/01/2019	Natural	8.2	<0.4	14	18	11	<0.1	<5	15	<20	<20	<50	<50	<50	<50	<100	<100	<100	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5
TP34 0-0.1	TP34	0-0.1	31/01/2019	Fill	6.1	<0.4	24	8.9	16	<0.1	6.9	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 54963
Project Name: Mamre Road, Kemps Creek

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	Polychlorinated Biphenyls								Phenols																		Chlorinated Benzenes
	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2,4-dinitrophenol	2,6-dichlorophenol	2-chlorophenol	2-Methylphenol	2-nitrophenol	3- & 4-Methylphenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Chloro-3-Methylphenol	4-nitrophenol	Phenol	Phenols (Total)	Total Halogenated Phenol	Total Non-Halogenated Phenol	Total Tetrachlorophenols	Hexachlorobenzene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	1	0.5	0.5	5	0.5	0.5	0.2	1	0.4	5	20	1	5	0.5		1	20	1	0.05
NEPC 2013 EIL, EILs Fresh Sediment																												
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																												
NEPM 2013 ESL Commercial and Industrial, Fine Soil																												
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																												
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																												
NEPM 2013 Mgnt Limits - Commercial and Industrial, Coarse																												
NEPM 2013 Mgnt Limits - Commercial and Industrial, Fine																												
NEPM 2013 Soil HIL D								$x^{[116]}$															240000					80
NEPM 2013 Soil HSL D for Vapour Intrusion - Clay 0 to <1m																												
NEPM 2013 Soil HSL D for Vapour Intrusion - Sand 0 to <1m																												
Sample ID	**Location**	**Depth**	**Date**	**Matrix**																								
MW01 0.4-0.5	MW01	0.4-0.5	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW01 0-0.2	MW01	0-0.2	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05
MW01 1.0-1.1	MW01	1-1.1	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW01 1.5-1.6	MW01	1.5-1.6	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW01 5.5-5.6	MW01	5.5-5.6	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW02 0.4-0.5	MW02	0.4-0.5	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW02 1.2-1.3	MW02	1.2-1.3	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW02 1.9-2.0	MW02	1.9-2	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW02 3.0-3.1	MW02	3-3.1	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW02 6.0-6.1	MW02	6-6.1	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW03 0.4-0.5	MW03	0.4-0.5	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW03 0-0.2	MW03	0-0.2	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW03 1.5-1.6	MW03	1.5-1.6	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW03 2.9-3.0	MW03	2.9-3	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP00 0.2-0.3	TP00	0.2-0.3	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP00 0.4-0.5	TP00	0.4-0.5	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP00 0-0.15	TP00	0-0.15	30/01/2019	Natural	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05
TP00 1.0-1.1	TP00	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP01	TP01	0-0.3	30/01/2019	Material	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP01 0.2-0.3	TP01	0.2-0.3	30/01/2019	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	<0.05
QA20190130MN_01	TP01	0.2-0.3	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC20190130MN_01	TP01	0.2-0.3	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP01 1.0-1.1	TP01	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP02 0.2-0.3	TP02	0.2-0.3	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP02 0-0.15	TP02	0-0.15	30/01/2019	Fill	-	-	-	-	-	-	-	-	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	<0.05
TP02 1.0-1.1	TP02	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP03 0-0.15	TP03	0-0.15	30/01/2019	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	<0.05
QA20190130MN_03	TP03	0-0.15	30/01/2019	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	<0.05
QC20190130MN_03	TP03	0-0.15	30/01/2019	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-	-	-	<0.1
TP04 0.2-0.3	TP04	0.2-0.3	30/01/2019	Fill	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	<0.05
QA20190130MN_04	TP04	0.2-0.3	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05
QC20190130MN_04	TP04	0.2-0.3	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1
TP04 0-0.1	TP04	0-0.1	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05
TP05 0-0.1	TP05	0-0.1	30/01/2019	Fill	-	-	-	-	-	-	-	-	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	<0.05
TP05 1.0-1.1	TP05	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP05 1.5-1.6	TP05	1.5-1.6	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06 0.8-0.9	TP06	0.8-0.9	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06 0-0.2	TP06	0-0.2	29/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05
TP07 0-0.1	TP07	0-0.1	29/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05
TP08 0-0.1	TP08	0-0.1	1/02/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09 0.0-0.1	TP09	0-0.1	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09 1.7-1.8	TP09	1.7-1.8	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10 0.4-0.5	TP10	0.4-0.5	1/02/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10 0-0.1	TP10	0-0.1	1/02/2019	Fill	-	-	-	-	-	-	-	-	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	<0.05
TP11 0-0.1	TP11	0-0.1	30/01/2019	Fill	-	-	-	-	-	-	-	-	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	-
TP11 1.1-1.2	TP11	1.1-1.2	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12 0-0.1	TP12	0-0.1	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12 1.0-1.1	TP12	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12 1.8-1.9	TP12	1.8-1.9	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP13 0-0.1	TP13	0-0.1	30/01/2019	Fill	-	-	-	-	-	-	-	-	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	-
TP13 1.0-1.1	TP13	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP14 0-0.1	TP14	0-0.1	1/02/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05
TP15 0.3-0.4	TP15	0.3-0.4	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15 0-0.1	TP15	0-0.1	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15 1.7-1.8	TP15	1.7-1.8	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP16 0-0.1	TP16	0-0.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP16 1.0-1.1	TP16	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP17 0.3-0.4	TP17	0.3-0.4	30/01/2019	Natural	-	-	-	-	-	-	-	-	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	<0.05
TP17 0-0.1	TP17	0-0.1	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP17 1.7-1.8	TP17	1.7-1.8	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 54963
Project Name: Mamre Road, Kemps Creek

	Polychlorinated Biphenyls								Phenols																			Chlorinated Benzenes
	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2,4-dinitrophenol	2,6-dichlorophenol	2-chlorophenol	2-Methylphenol	2-nitrophenol	3- & 4-Methylphenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Chloro-3-Methylphenol	4-nitrophenol	Phenol	Phenols (Total)	Total Halogenated Phenol	Total Non-Halogenated Phenol	Total Tetrachlorophenols	Hexachlorobenzene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	1	0.5	0.5	5	0.5	0.5	0.2	1	0.4	5	20	1	5	0.5		1	20	1	0.05
NEPC 2013 EIL, EILs Fresh Sediment																												
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																												
NEPM 2013 ESL Commercial and Industrial, Fine Soil																												
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D																												
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																												
NEPM 2013 Mgnt Limits - Commercial and Industrial, Coarse																												
NEPM 2013 Mgnt Limits - Commercial and Industrial, Fine																												
NEPM 2013 Soil HIL D								x^{116}															240000					80
NEPM 2013 Soil HSL D for Vapour Intrusion - Clay 0 to <1m																												
NEPM 2013 Soil HSL D for Vapour Intrusion - Sand 0 to <1m																												

Sample ID	Location	Depth	Date	Matrix																																				
TP18 0-0.1	TP18	0-0.1	30/01/2019	Fill	-	-	-	-	-	-	-	-	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	<0.05
TP18 1.0-1.1	TP18	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP19 0-0.1	TP19	0-0.1	1/02/2019	Fill	-	-	-	-	-	-	-	-	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	-
TP20 0.4-0.5	TP20	0.4-0.5	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP20 0-0.1	TP20	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP20 1.0-1.1	TP20	1-1.1	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP20 1.7-1.8	TP20	1.7-1.8	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP21 0.0-0.1	TP21	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP21 0.4-0.5	TP21	0.4-0.5	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP22 0.6-0.7	TP22	0.6-0.7	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP22 0-0.1	TP22	0-0.1	31/01/2019	Natural	-	-	-	-	-	-	-	-	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	<0.05
TP22 1.5-1.6	TP22	1.5-1.6	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP23 0-0.1	TP23	0-0.1	1/02/2019	Fill	-	-	-	-	-	-	-	-	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	<0.05
TP24 0.2-0.3	TP24	0.2-0.3	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05
TP24 0-0.1	TP24	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP25 0-0.1	TP25	0-0.1	1/02/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP26 0.4-0.5	TP26	0.4-0.5	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP26 0-0.1	TP26	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05
TP27 0-0.1	TP27	0-0.1	1/02/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP28 0.4-0.5	TP28	0.4-0.5	31/01/2019	Natural	-	-	-	-	-	-	-	-	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	-
TP28 0-0.1	TP28	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05
TP30 0-0.1	TP30	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	-	<1	<20	<1	<0.05
TP30 1.0-1.1	TP30	1-1.1	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP31 0.4-0.5	TP31	0.4-0.5	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP31 0-0.1	TP31	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP31 1.5-1.6	TP31	1.5-1.6	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP32 0.7-0.8	TP32	0.7-0.8	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP32 0-0.1	TP32	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05
TP32 1.7-1.8	TP32	1.7-1.8	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP33 0.8-0.9	TP33	0.8-0.9	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP33 0-0.1	TP33	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP34 0.4-0.5	TP34	0.4-0.5	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP34 0-0.1	TP34	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 54963
Project Name: Mamre Road, Kemps Creek

	Asbestos																				
	Approx. Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Total Asbestos[#1]	Asbestos ID in Soil	Asbestos Reported Result	Asbestos Sample Dimensions	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment	Synthetic Fibres - Comment
	g	%w/w	%w/w	g	g	g	g	g	g	g	g/kg	Comment	Comment	Comment	Comment	Comment	Comment	Comment	Comment	Comment
EQL																					
NEPC 2013 EIL, EILs Fresh Sediment																					
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																					
NEPM 2013 ESL Commercial and Industrial, Fine Soil																					
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D		0.05[#3]																			
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL			0.001[#7]																		
NEPM 2013 Mgnt Limits - Commercial and Industrial, Coarse																					
NEPM 2013 Mgnt Limits - Commercial and Industrial, Fine																					
NEPM 2013 Soil HIL D																					
NEPM 2013 Soil HSL D for Vapour Intrusion - Clay 0 to <1m																					
NEPM 2013 Soil HSL D for Vapour Intrusion - Sand 0 to <1m																					

Sample ID	Location	Depth	Date	Matrix																		
MW01 0.4-0.5	MW01	0.4-0.5	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW01 0-0.2	MW01	0-0.2	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW01 1.0-1.1	MW01	1-1.1	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW01 1.5-1.6	MW01	1.5-1.6	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW01 5.5-5.6	MW01	5.5-5.6	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW02 0.4-0.5	MW02	0.4-0.5	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW02 1.2-1.3	MW02	1.2-1.3	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW02 1.9-2.0	MW02	1.9-2	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW02 3.0-3.1	MW02	3-3.1	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW02 6.0-6.1	MW02	6-6.1	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW03 0.4-0.5	MW03	0.4-0.5	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW03 0-0.2	MW03	0-0.2	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW03 1.5-1.6	MW03	1.5-1.6	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW03 2.9-3.0	MW03	2.9-3	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP00 0.2-0.3	TP00	0.2-0.3	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP00 0.4-0.5	TP00	0.4-0.5	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP00 0-0.15	TP00	0-0.15	30/01/2019	Natural	655	0	0	0	0	0	0	0	0	0	-	-	-	1[#1]	-	1[#8]	1[#8]	1[#8]	1[#5]	1[#4]	1[#8]
TP00 1.0-1.1	TP00	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP01	TP01	0-0.3	30/01/2019	Material	60	0	0	0	0	0	0	0	0	0	-	-	1[#3]	1[#7]	1[#8]	1[#8]	1[#8]	1[#8]	1[#8]	1[#8]	1[#8]
TP01 0.2-0.3	TP01	0.2-0.3	30/01/2019	Fill	479	0	0	0	0	0	0	0	0	0	-	-	1[#1]	-	1[#8]	1[#8]	1[#8]	1[#5]	1[#4]	1[#8]
QA20190130MN_01	TP01	0.2-0.3	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC20190130MN_01	TP01	0.2-0.3	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP01 1.0-1.1	TP01	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP02 0.2-0.3	TP02	0.2-0.3	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP02 0-0.15	TP02	0-0.15	30/01/2019	Fill	586	0	0	0	0	0	0	0	0	0	-	-	1[#1]	-	1[#8]	1[#8]	1[#8]	1[#5]	1[#4]	1[#8]
TP02 1.0-1.1	TP02	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP03 0-0.15	TP03	0-0.15	30/01/2019	Fill	805	0	0	0	0	0	0	0	0	0	-	-	1[#1]	-	1[#8]	1[#8]	1[#8]	1[#5]	1[#4]	1[#8]
QA20190130MN_03	TP03	0-0.15	30/01/2019	Fill	855	0	0	0	0	0	0	0	0	0	-	-	1[#1]	-	1[#8]	1[#8]	1[#8]	1[#5]	1[#4]	1[#8]
QC20190130MN_03	TP03	0-0.15	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	<0.1	0	-	-	-	-	-	-	-	-
TP04 0.2-0.3	TP04	0.2-0.3	30/01/2019	Fill	548	0	0	0	0	0	0	0	0	0	-	-	1[#1]	-	1[#8]	1[#8]	1[#8]	1[#5]	1[#4]	1[#8]
QA20190130MN_04	TP04	0.2-0.3	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC20190130MN_04	TP04	0.2-0.3	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP04 0-0.1	TP04	0-0.1	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP05 0-0.1	TP05	0-0.1	30/01/2019	Fill	742	0	0	0	0	0	0	0	0	0	-	-	1[#1]	-	1[#8]	1[#8]	1[#8]	1[#5]	1[#4]	1[#8]
TP05 1.0-1.1	TP05	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP05 1.5-1.6	TP05	1.5-1.6	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06 0.8-0.9	TP06	0.8-0.9	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06 0-0.2	TP06	0-0.2	29/01/2019	Fill	445	0	0	0	0	0	0	0	0	0	-	-	1[#1]	-	1[#8]	1[#8]	1[#8]	1[#5]	1[#4]	1[#8]
TP07 0-0.1	TP07	0-0.1	29/01/2019	Fill	396	0	0	0	0	0	0	0	0	0	-	-	1[#1]	-	1[#8]	1[#8]	1[#8]	1[#5]	1[#4]	1[#8]
TP08 0-0.1	TP08	0-0.1	1/02/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09 0.0-0.1	TP09	0-0.1	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09 1.7-1.8	TP09	1.7-1.8	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10 0.4-0.5	TP10	0.4-0.5	1/02/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10 0-0.1	TP10	0-0.1	1/02/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP11 0-0.1	TP11	0-0.1	30/01/2019	Fill	475	0	0	0	0	0	0	0	0	0	-	-	1[#1]	-	1[#8]	1[#8]	1[#8]	1[#5]	1[#4]	1[#8]
TP11 1.1-1.2	TP11	1.1-1.2	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12 0-0.1	TP12	0-0.1	30/01/2019	Fill	570	0	0	0	0	0	0	0	0	0	-	-	1[#1]	-	1[#8]	1[#8]	1[#8]	1[#5]	1[#4]	1[#8]
TP12 1.0-1.1	TP12	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12 1.8-1.9	TP12	1.8-1.9	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP13 0-0.1	TP13	0-0.1	30/01/2019	Fill	714	0	0	0	0	0	0	0	0	0	-	-	1[#1]	-	1[#8]	1[#8]	1[#8]	1[#5]	1[#4]	1[#8]
TP13 1.0-1.1	TP13	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP14 0-0.1	TP14	0-0.1	1/02/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15 0.3-0.4	TP15	0.3-0.4	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15 0-0.1	TP15	0-0.1	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15 1.7-1.8	TP15	1.7-1.8	29/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP16 0-0.1	TP16	0-0.1	30/01/2019	Natural	707	0	0	0	0	0	0	0	0	0	-	-	1[#1]	-	1[#8]	1[#8]	1[#8]	1[#5]	1[#4]	1[#8]
TP16 1.0-1.1	TP16	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP17 0.3-0.4	TP17	0.3-0.4	30/01/2019	Natural	513	0	0	0	0	0	0	0	0	0	-	-	1[#1]	-	1[#8]	1[#8]	1[#8]	1[#5]	1[#4]	1[#8]
TP17 0-0.1	TP17	0-0.1	30/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP17 1.7-1.8	TP17	1.7-1.8	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 54963
Project Name: Mamre Road, Kemps Creek

	Asbestos																				
	Approx. Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	Total Asbestos[#1]	Asbestos ID in Soil	Asbestos Reported Result	Asbestos Sample Dimensions	ACM - Comment	AF - Comment	FA - Comment	Organic Fibres - Comment	Respirable Fibres - Comment	Synthetic Fibres - Comment
	g	%w/w	%w/w	g	g	g	g	g	g	g	g/kg	Comment	Comment	Comment	Comment	Comment	Comment	Comment	Comment	Comment
EQL																				
NEPC 2013 EIL, EILs Fresh Sediment																				
NEPM 2013 ESL Commercial and Industrial, Coarse Soil																				
NEPM 2013 ESL Commercial and Industrial, Fine Soil																				
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Commercial/Industrial - HSL D		0.05[#3]																		
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL			0.001[#7]																	
NEPM 2013 Mgnt Limits - Commercial and Industrial, Coarse																				
NEPM 2013 Mgnt Limits - Commercial and Industrial, Fine																				
NEPM 2013 Soil HIL D																				
NEPM 2013 Soil HSL D for Vapour Intrusion - Clay 0 to <1m																				
NEPM 2013 Soil HSL D for Vapour Intrusion - Sand 0 to <1m																				

Sample ID	Location	Depth	Date	Matrix																	
TP18 0-0.1	TP18	0-0.1	30/01/2019	Fill	585	0	0	0	0	0	0	0	0	-	-	1[#1]	-	1[#8]	1[#8]	1[#8]	1[#5]	1[#4]	1[#8]
TP18 1.0-1.1	TP18	1-1.1	30/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP19 0-0.1	TP19	0-0.1	1/02/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP20 0.4-0.5	TP20	0.4-0.5	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP20 0-0.1	TP20	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP20 1.0-1.1	TP20	1-1.1	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP20 1.7-1.8	TP20	1.7-1.8	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP21 0.0-0.1	TP21	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP21 0.4-0.5	TP21	0.4-0.5	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP22 0.6-0.7	TP22	0.6-0.7	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP22 0-0.1	TP22	0-0.1	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP22 1.5-1.6	TP22	1.5-1.6	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP23 0-0.1	TP23	0-0.1	1/02/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP24 0.2-0.3	TP24	0.2-0.3	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP24 0-0.1	TP24	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP25 0-0.1	TP25	0-0.1	1/02/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP26 0.4-0.5	TP26	0.4-0.5	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP26 0-0.1	TP26	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP27 0-0.1	TP27	0-0.1	1/02/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP28 0.4-0.5	TP28	0.4-0.5	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP28 0-0.1	TP28	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP30 0-0.1	TP30	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP30 1.0-1.1	TP30	1-1.1	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP31 0.4-0.5	TP31	0.4-0.5	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP31 0-0.1	TP31	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP31 1.5-1.6	TP31	1.5-1.6	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP32 0.7-0.8	TP32	0.7-0.8	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP32 0-0.1	TP32	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP32 1.7-1.8	TP32	1.7-1.8	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP33 0.8-0.9	TP33	0.8-0.9	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP33 0-0.1	TP33	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP34 0.4-0.5	TP34	0.4-0.5	31/01/2019	Natural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP34 0-0.1	TP34	0-0.1	31/01/2019	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Env Stds Comments
#1:ESLs are of low reliability.
#2:ESLs are of moderate reliability.
#3:Commercial/industrial D includes premises such as shops, offices, factories and industrial sites.
#4:Recreational C includes public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and unpaved footpaths.
#5:Residential A with garden/accessible soil also includes children's day care centres, preschools and primary schools.
#6:Residential B with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.
#7:The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures (refer Section 4.10). This screening level is not applicable to free fibres.
#8:Management limits of BTEX and naphthalene are not available, hence should not be subtracted from the relevant fractions to obtain F1 and F2.
#9:Limits applied after consideration of relevant ESLs and HSLs
#10:Key limitations of HSL should be referred to prior to application in Friebel and Nadebaum (2011b and 2011d).
#11:TV adopted from Chromium (VI)
#12:Assumptions of HSL are presented in Friebel and Nadebaum (2011a and 2011b).
#13:Refer to HSL and soil saturation concentration limit.
#14:Refer to Section 8.2 and Appendix J in Friebel and Nadebaum (2011a).
#15:TV maybe be multiplied by a factor to account for biodegradation of vapour
#16:HIL relates to non-dioxin-like PCBs only. If PCB source is suspected a site-specific assessment should be untertaken
#17:Sensitive setting HSL D Sand 0m to <1m criteria adopted. Exceedence quantifies further interpretation. To obtain F2 subtract naohthalene from >C10-C16. NL - Not Limiting.
#18:Sensitive setting HSL D Silt 0m to <1m criteria adopted. Exceedence quantifies further interpretation. To obtain F1 subtract the sum of BTEX from C6-C10. NL - Not Limiting.
#19:Sensitive setting HSL D Sand 0m to <1m criteria adopted. NL - Not Limiting. Exceedence quantifies further interpretation.
#20:To obtain F2 subtract naohthalene from >C10-C16.
#21:To obtain F1 subtract the sum of BTEX from C6-C10.

Data Comments
#1 No asbestos detected at the reporting limit of 0.001% w/w.*Organic fibre detected.No respirable fibres detected.
#2 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#3 Chrysotile; amosite and crocidolite asbestos detected.
#4 No respirable fibres detected.
#5 Organic fibres detected.
#6 ESDAT Combined.
#7 111x66x4
#8 Nil

Table B Groundwater Analytical Results

Table B - Groundwater Analytical Results
Project Number: 54963
Project Name: Mamre Road, Kemps Creek

| | Metals & Metalloids | | | | | | | | TPHs (NEPC 1999) | | | | | TRHs (NEPC 2013) | | | | | | | BTEXN | | | | | | | Polycyclic Aromatic Hydrocarbons | | | | | | | |

Table B - Groundwater Analytical Results
Project Number: 54963
Project Name: Mamre Road, Kemps Creek

	Phenols																				Herbicides & Fungicides	Major Anions			Ionic Balance	
	Pentachlorophenol	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2,4-dinitrophenol	2,6-dichlorophenol	2-chlorophenol	2-Methylphenol	2-nitrophenol	3- & 4-Methylphenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Chloro-3-Methylphenol	4-nitrophenol	Phenol	Phenols (Total)	Total Halogenated Phenol	Total Non-Halogenated Phenol	Total Tetrachlorophenols	Dinoseb	Sulphate (as SO4)	Chloride	Bicarbonate Alkalinity (as CaCO3)	Electrical Conductivity @ 25 °C	Total Alkalinity (as CaCO3)
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L
EQL	0.01	0.01	0.01	0.003	0.003	0.03	0.003	0.003	0.003	0.01	0.006	0.03	0.1	0.01	0.03	0.003	0.05	0.01	0.1	0.03	0.1	1	1	5	1	5
NHMRC (2017) Factor 10 for Recreational Exposure	0.1		0.2	2				3														5000[#2]				
NEPM 2013 Groundwater HSL D for Vapour Intrusion - Clay 2 to <4m																										
ANZAST (2018) Adjusted for Hardness	0.0036[#3]		0.003[#3]	0.12		0.045		0.34[#5]								0.32										
MHSPE (2000) Dutch Soil Intervention																										

Field_ID	LocCode	WellCode	Sampled_Date-Time																							
MW01	MW01	MW01	1/02/2019	<0.01	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03	<0.003	-	<0.01	<0.1	<0.03	<0.1	850	8400	-	27,000	1100
QA20190201	MW01	MW01	1/02/2019	<0.01	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03	<0.003	-	<0.01	<0.1	<0.03	<0.1	850	8300	-	27,000	1100
QC20190201	MW01	MW01	1/02/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	930	8300	1200	23,000	1200
MW02	MW02	MW02	1/02/2019	<0.01	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03	0.003	-	<0.01	<0.1	<0.03	<0.1	820	9300	-	21,000	1000
MW02 (SG Clean)	MW02	MW02	1/02/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW03	MW03	MW03	1/02/2019	<0.01	<0.01	<0.01	<0.003	<0.003	<0.03	<0.003	<0.003	<0.003	<0.01	<0.006	<0.03	<0.1	<0.01	<0.03	<0.003	-	<0.01	<0.1	<0.03	<0.1	1100	14,000	-	40,000	1300

Env Stds Comments
#1:TV Calculated using hardness of 1000 mg/L CaCO3, refer to ANZECC &
#2:As SO4.
#3:Possible bioaccumulation & secondary poisoning, refer to ANZECC & A
#4:Adopted from WHO (2008) and multiplied by factor 10 to adjust for re
#5:TV May not protect key species from chronic toxicity, refer to ANZECC
#6:To obtain F2 subtract naohthalene from >C10-C16.
#7:To obtain F1 subtract the sum of BTEX from C6-C10.

Data Comments
#1 NIL (+)VE

Appendix A Photographic Log

PHOTO 1. 657-703 MAMRE ROAD BACK OF MAIN RESIDENCE



PHOTO 2. 657-703 MAMRE ROAD MAIN SHED



PHOTO 3. 657-703 SMALLER SHED INTERIOR, NORTH OF MAIN SHED



PHOTO 4: 657-703 MAMRE ROAD POTENTIAL ACM PIPE FRAGMENT



JBS&G

Job No: 54963	
Client: Altis Property Group	
Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH
Not to Scale	
Coord. Sys n/a	

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 5: 657-703 MAMRE ROAD ANIMAL SHELTER



PHOTO 6: 657-703 MAMRE ROAD FEED SHED



PHOTO 7: BUILDING MATERIALS SURROUNDING FEED SHED



PHOTO 8: DISUSED WASHING MACHINE TO THE SOUTH OF THE ANIMAL SHELTER



JBS&G

Job No: 54963	
Client: Altis Property Group	
Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH
Not to Scale	
Coord. Sys n/a	

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 9. 657-703 MAMRE ROAD TOOL SHED



PHOTO 10. 657-703 MAMRE ROAD DAM WALL EMBANKMENTS



PHOTO 11. 657-703 MAMRE ROAD DENSE BUSH SHRUBBERY IN WESTERN AND NORTH-EASTERN PORTION OF THE SITE



PHOTO 12: 657-703 MAMRE ROAD DENSE BUSH SHRUBBERY IN WESTERN AND NORTH-EASTERN PORTION OF THE SITE



JBS&G

Job No: 54963

Client: Altis Property Group

Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH

Not to Scale

Coord. Sys n/a

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 13: 657-703 MAMRE ROAD CHANGE IN VEGETATION BORDERING BAKERS LANE



PHOTO 14: 707A MAMRE ROAD DAM AND RAISED EMBANKMENT BORDERING BAKERS LANE



PHOTO 15: 707A MAMRE ROAD SEALED ASPHALT DRIVEWAY



PHOTO 16: 707A MAMRE ROAD CARPARK AREA



JBS&G

Job No: 54963

Client: Altis Property Group

Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH

Not to Scale

Coord. Sys n/a

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 17: 707A MAMRE ROAD EASTERN RESIDENCE



PHOTO 18: 707A MAMRE ROAD MAIN WESTERN RESIDENCE



PHOTO 19: 707A MAMRE ROAD TIN SHELTER



PHOTO 20: 707A MAMRE ROAD INTERIOR OF MARQUEE



JBS&G

Job No: 54963

Client: Altis Property Group

Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH

Not to Scale

Coord. Sys n/a

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 21: 707A MAMRE ROAD STORED APPLIANCES INSIDE MARQUEE



PHOTO 22: 707A MAMRE ROAD TIN SHED



PHOTO 23: 707A MAMRE ROAD ANIMAL SHELTER



PHOTO 24: 707A MAMRE ROAD WOODEN STRUCTURES IN SOUTH-WESTERN PORTION OF SITE



JBS&G

Job No: 54963

Client: Altis Property Group

Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH

Not to Scale

Coord. Sys n/a

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 25: 707A MAMRE ROAD WOODEN STRUCTURES IN SOUTH-WESTERN PORTION OF SITE



PHOTO 26: 707A MAMRE ROAD RECREATIONAL FACILITY WITH DRUMS



PHOTO 27: 707A MAMRE ROAD RECREATIONAL FEATURE DRUMS



PHOTO 28: 707A MAMRE ROAD BURN AREA



JBS&G

Job No: 54963

Client: Altis Property Group

Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH

Not to Scale

Coord. Sys n/a

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 29: 713-755 MAMRE ROAD RAISED DAM WALL, SOUTHERN PORTION



PHOTO 30: 713-755 MAMRE ROAD RAISED DAM WALL, EASTERN PORTION BORDERING MAMRE ROAD



PHOTO 31: 713-755 MAMRE ROAD INCREASED VEGETATION GROWTH



PHOTO 32: 713-755 MAMRE ROAD GENERAL SITE, NORTH-EAST FACING



JBS&G

Job No: 54963

Client: Altis Property Group

Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH

Not to Scale

Coord. Sys n/a

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 33: 713-755 MAMRE ROAD GENERAL SITE, NORTH FACING



PHOTO 34: 767-789 MAMRE ROAD MAIN RESIDENCE



PHOTO 35: 767-789 MAMRE ROAD SMALLER RESIDENCE



PHOTO 36: 767-789 MAMRE ROAD VEGETABLE GARDEN



JBS&G

Job No: 54963

Client: Altis Property Group

Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH

Not to Scale

Coord. Sys n/a

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 37: 767-789 MAMRE ROAD CHICKEN COOP



PHOTO 38: 767-789 MAMRE ROAD ANIMAL SHELTER



PHOTO 39: 767-789 MAMRE ROAD MAIN SHED INTERIOR



PHOTO 40: 767-789 MAMRE ROAD MAIN SHED INTERIOR



JBS&G

Job No: 54963

Client: Altis Property Group

Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH

Not to Scale

Coord. Sys n/a

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 41: 767-789 MAMRE ROAD HISTORICAL TOILET BLOCK



PHOTO 42: 767-789 MAMRE ROAD ANIMAL SHELTER



PHOTO 43: 767-789 MAMRE ROAD SECONDARY SHED AND CARAVAN



PHOTO 44: 767-789 MAMRE ROAD MACHINERY SHED



JBS&G

Job No: 54963

Client: Altis Property Group

Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH

Not to Scale

Coord. Sys n/a

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 45: 767-789 MAMRE ROAD HISTORICAL TOILET BLOCK



PHOTO 46: 767-789 MAMRE ROAD CONCRETE STORAGE AREA



PHOTO 47: 767-789 MAMRE ROAD STORED CONCRETE SLABS



PHOTO 48: 767-789 MAMRE ROAD STOCKPILE WEST OF MAIN SHED



JBS&G

Job No: 54963	
Client: Altis Property Group	
Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH
Not to Scale	
Coord. Sys n/a	

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 49: 767-789 MAMRE ROAD STOCKPILE WEST OF THE CONCRETE STORAGE AREA



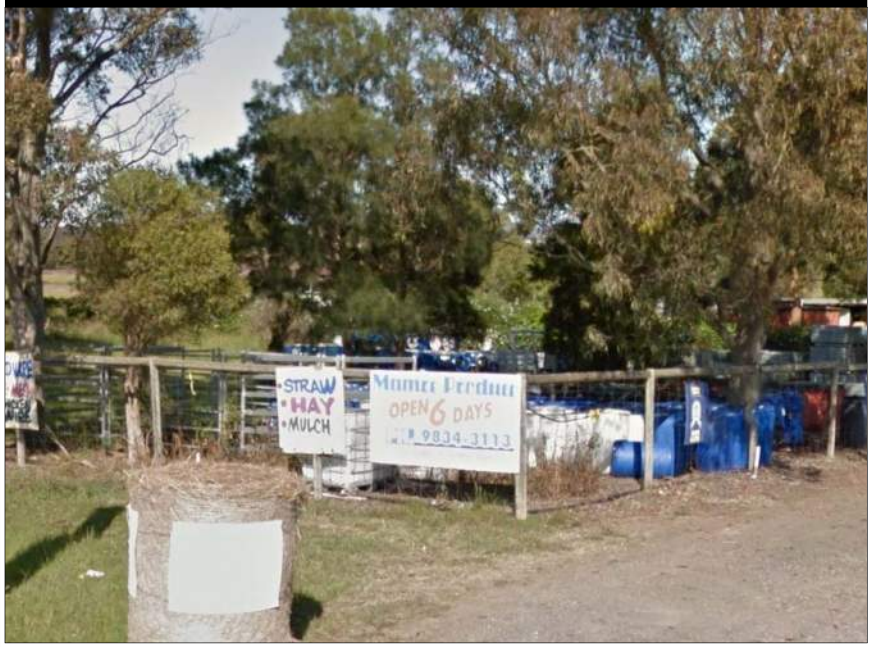
PHOTO 50: 767-789 MAMRE ROAD RAISED EMBANKMENT



PHOTO 51: 767-789 MAMRE ROAD BUILDING MATERIAL STOCKPILE



PHOTO 52: 707-711 MAMRE ROAD MAMRE PRODUCE



JBS&G

Job No: 54963

Client: Altis Property Group

Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH

Not to Scale

Coord. Sys n/a

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 53: 707-711 MAMRE ROAD SITE ENTRY



PHOTO 54: 707-711 MAMRE ROAD SITE EXIT



PHOTO 55: 707-711 MAMRE ROAD NORTHERN DAM



PHOTO 56: 707-711 MAMRE ROAD CENTRAL DAM



JBS&G

Job No: 54963

Client: Altis Property Group

Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH

Not to Scale

Coord. Sys n/a

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 57: MAMRE PRODUCE STORAGE AREA



PHOTO 58: 707-711 MAMRE PRODUCE STORAGE AREA WITH STORAGE SHED (LEFT)



PHOTO 59: 707-711 MAMRE PRODUCE STORAGE AREA WESTERN SHED



PHOTO 60: 707-711 MAMRE PRODUCE WESTERN SHED AND STORAGE TANKS



JBS&G

Job No: 54963

Client: Altis Property Group

Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH

Not to Scale

Coord. Sys n/a

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 61: 707-711 MAMRE PRODUCE STORAGE



PHOTO 62: 707-711 MAMRE PRODUCE STORAGE



PHOTO 63: 707-711 MAMRE PRODUCE STORAGE



PHOTO 64: 707-711 MAMRE PREODUCE STORAGE



JBS&G

Job No: 54963	
Client: Altis Property Group	
Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH
Not to Scale	
Coord. Sys n/a	

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 65: 707-711 MAMRE ROAD STORED CONSTRUCTION MATERIALS



PHOTO 66: 707-711 MAMRE ROAD STORED CONSTRUCTION MATERIALS



PHOTO 67: 707-711 MAMRE ROAD WESTERN BOUNDARY OF PROPERTY AT CENTRAL/SOUTHERN PORTION INTERSECTION



PHOTO 68: 707-711 MAMRE ROAD BOUNDARY OF CENTRAL AND SOUTHERN PORTIONS (FACING WEST)



JBS&G

Job No: 54963

Client: Altis Property Group

Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH

Not to Scale

Coord. Sys n/a

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 69: WEATHERED SHALE MW01



PHOTO 70: SATURATED WEATHERED SHALE MW01



PHOTO 71: HIGH PLASTICITY SILTY CLAY MW02



PHOTO 72: SILTY CLAY GREY BROWN MOTTLING MW02



JBS&G

Job No: 54963

Client: Altis Property Group

Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH

Not to Scale

Coord. Sys n/a

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

PHOTO 73: TP31 SILTY CLAY



PHOT 73: TP01 ACM FRAGMENT (0.1-0.3)



PHOTO 74: TP02 ASPHALTIC GRAVELS AND SLAG



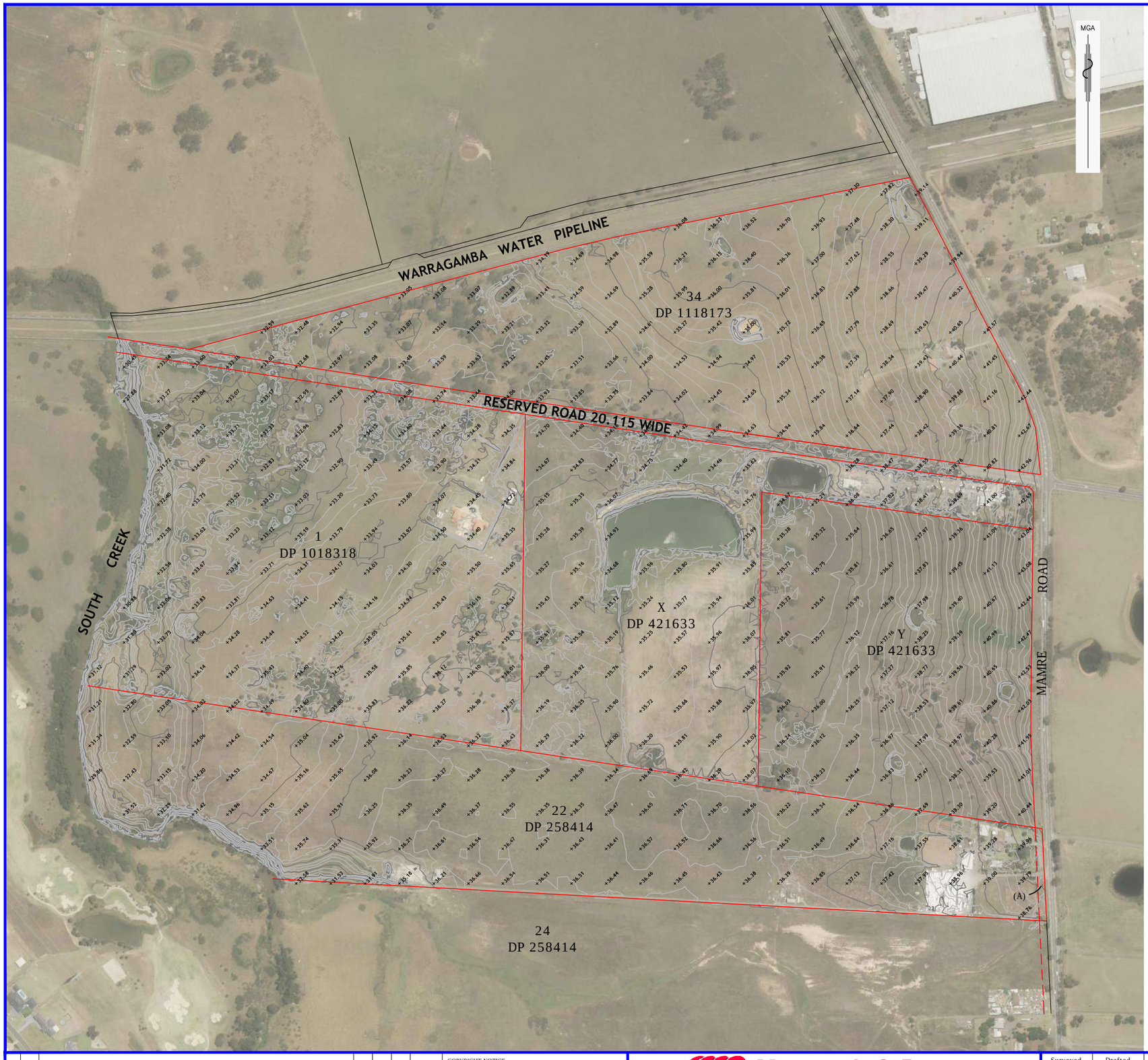
JBS&G

Job No: 54963	
Client: Altis Property Group	
Version: R01	Date: 05.02.2019
Drawn By: JS	Checked By: RH
Not to Scale	
Coord. Sys n/a	

657-703, 707-711, 707A, 713-755 and 757-769 Mamre Road, Kemps Creek, NSW

APPENDIX A: PHOTO LOG

Appendix B Site Topographical Survey



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DIAL 1100 BEFORE YOU DIG

IMPORTANT NOTES

1. INDEPENDENT INQUIRIES FOR UP TO DATE SERVICE LOCATIONS THROUGH THE RELEVANT AUTHORITIES MUST BE UNDERTAKEN PRIOR TO COMMENCEMENT OF ANY WORKS/EXCAVATION. EXACT SERVICE POSITIONS SHOULD BE ESTABLISHED BY APPROPRIATE MEANS. WE RECOMMEND PROFESSIONAL SERVICE LOCATORS.
2. THE BOUNDARIES SHOWN ON THIS PLAN HAVE BEEN COMPILED FROM SURVEY PLANS, DP421633, DP1018318, DP1118173, DP258414, DP1153854, DP229770, DP154739 AND DP67335 ON PUBLIC RECORD. NO FIELD SURVEY HAS BEEN UNDERTAKEN TO DETERMINE THE ACCURACY OF THE BOUNDARIES AS SHOWN. AS SUCH THESE DIMENSIONS COULD BE OUT OF DATE AND INCORRECT BY MODERN STANDARDS. THIS PLAN SHOULD NOT BE USED FOR BUILDING WORKS CLOSE TO OR ON THE BOUNDARY, OR TO PROSCRIBED SET-BACKS WITHOUT FURTHER SURVEY INVESTIGATION.
3. CONTOURS SHOWN DEPICT THE TOPOGRAPHY. CONTOURS DO NOT REPRESENT THE EXACT LEVEL AT ANY PARTICULAR POINT, EXCEPT AT SPOT LEVELS SHOWN.
4. SPOT HEIGHTS AND CONTOURS HAVE BEEN DERIVED FROM MKP (MODEL KEY POINTS) LIDAR DATA SET OBTAINED FROM NSW LPI, CAPTURED BETWEEN 25/02/2011 AND 23/03/2011. STATED VERTICAL ACCURACY OF LIDAR POINTS ±0.3m. STATED HORIZONTAL ACCURACY OF LIDAR POINTS ±0.8m
5. LIMITED FIELD VALIDATION OF LIDAR DATA OCCURRED ON 17/03/2017 ALONG MAMRE ROAD, BAKERS LANE AND WITHIN LOT Y DP421633, USING RTK GNSS DATA (VRS)
6. THIS PLAN MUST REMAIN UNALTERED AS ISSUED BY MONTEATH AND POWYS. ALTERING ANY PART OF THIS PLAN DESTROYS THE INTEGRITY OF THE PLAN. ANY REVISIONS REQUESTED MUST BE ISSUED BY MONTEATH AND POWYS.
7. THESE NOTES ARE AN INTEGRAL PART OF THIS PLAN. REPRODUCTION OF THIS PLAN OR OF ANY PART OF THIS PLAN WITHOUT THESE NOTES BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.

SURVEY INFORMATION

1. THE SURVEY IS ON GRID MAP GRID OF AUSTRALIA (MGA). BASED ON PM 33569 – E294164.376 N6255436.559
2. ALL REDUCED LEVELS ARE BASED ON AUSTRALIAN HEIGHT DATUM (A.H.D)
3. ORIGIN OF LEVELS PM 33569 RL35.732 (A.H.D)
4. CONTOUR INTERVAL IS 0.25m.

(A) – RESTRICTION ON USER (H107598)

REVISIONS

No	REVISION	SVY	DFT	CHK	DATE
.	.				

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ACN 000 861 110
SURVEYING PLANNING ENGINEERING DESIGN PROJECT MANAGEMENT
125 Bull Street Newcastle NSW 2300 | PO Box 2270 Dangar NSW 2309 | T 61 2 4926 1388 F 61 2 4929 3475
Level 11, 205 Pacific Highway St Leonards NSW 2065 | T 61 2 94364210
88 Marquis St Gunnedah NSW 2380 | PO Box 328 Gunnedah NSW 2380 | T 61 2 6742 0166
E survey@monteathpowys.com.au W www.monteathpowys.com.au

Surveyed	Drafted	Checked
PS	AJM	PS

REGISTERED SURVEYOR

Scale @A1 : 1:3000
@A3 : 1:6000
DO NOT SCALE

Original Size A1

Client: HBB PROPERTY

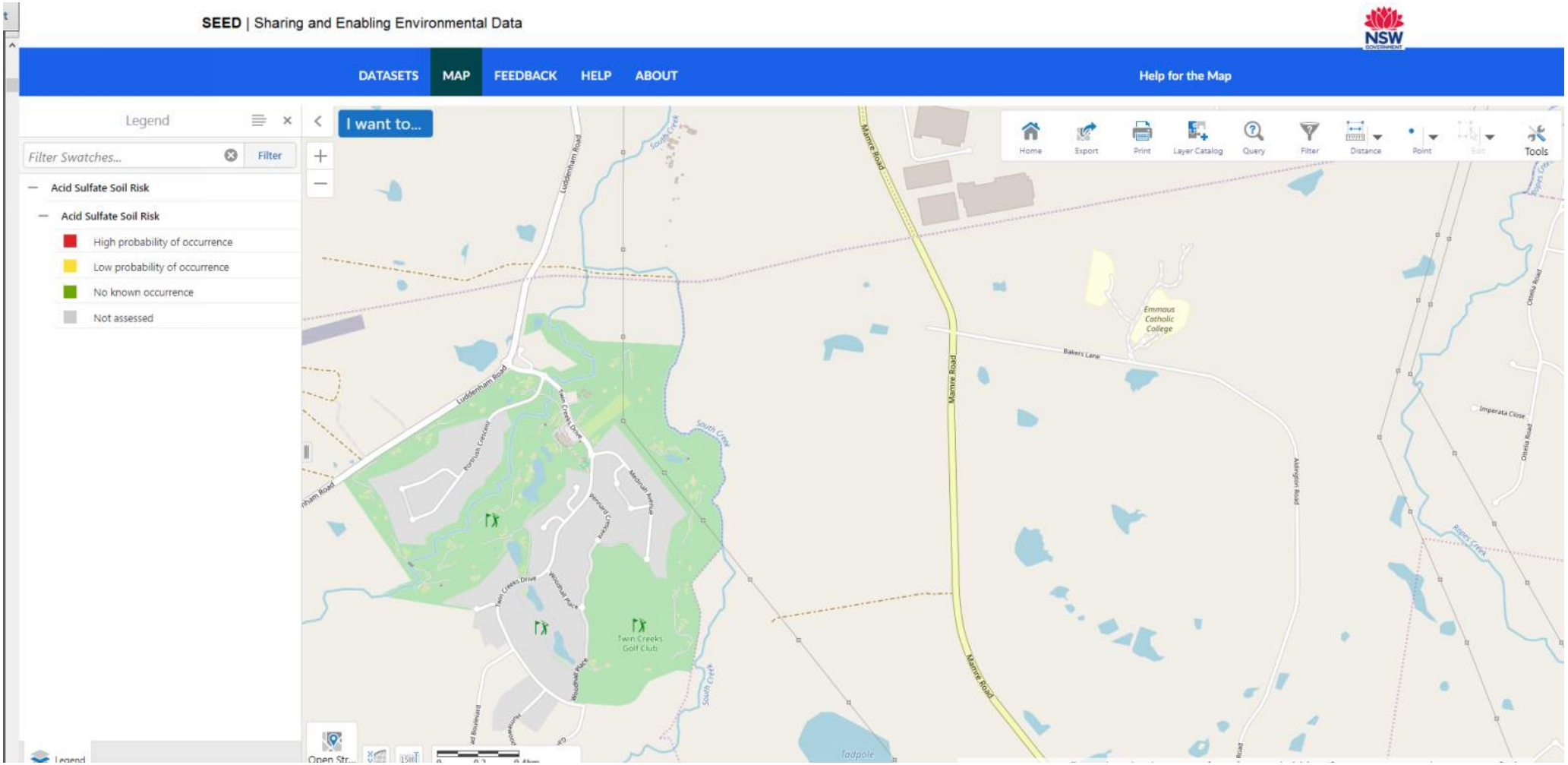
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KEMPS CREEK
.

CAD File: 170115A_01 | Ref No: 17/0115 | Date: 20/03/2017

Sheet No. 1/1

Revision 1

Appendix C Acid Sulfate Soil Risk Map (SEED)


SEED | Sharing and Enabling Environmental Data
DATASETS
MAP
FEEDBACK
HELP
ABOUT
Help for the Map
Legend
Filter Swatches...
Filter
Acid Sulfate Soil Risk
Acid Sulfate Soil Risk
High probability of occurrence
Low probability of occurrence
No known occurrence
Not assessed
I want to...
Home
Export
Print
Layer Catalog
Query
Filter
Distance
Point
Tools
Luddenham Road
Mamre Road
Bakers Lane
Emmaus Catholic College
Twin Creeks Golf Club
South Creek
Twin Creeks Drive
Woodhall Place
Imperata Close
Oteria Road
Addington Road
Tadpole

Appendix D Planning Certificates

PENRITH CITY COUNCIL

Civic Centre
601 High Street, Penrith

PO Box 60 Penrith NSW 2751

Telephone: 02 4732 7777
Facsimile: 02 4732 7958

Email: pencit@penrithcity.nsw.gov.au

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

Property No: 402326
Your Reference:
Contact No:

Issue Date: 15 March 2017
Certificate No: 17/01246

Issued to: Nicola Wells/jbsg
50 Margaret Street
SYDNEY NSW 2000

PRECINCT 2010

DESCRIPTION OF LAND

County: CUMBERLAND **Parish: MELVILLE**

Location: 713-755 Mamre Road KEMPS CREEK NSW 2178
Land Description: Lot Y DP 421633

- PART 1 PRESCRIBED MATTERS –

In accordance with the provisions of Section 149(2) of the Act the following information is furnished in respect of the abovementioned land:

1 *NAMES OF RELEVANT PLANNING INSTRUMENTS AND DCPs*

1(1) The name of each environmental planning instrument that applies to the carrying out of development on the land:

Penrith Local Environmental Plan 2010, published 22nd September 2010, as amended, applies to the land.

Sydney Regional Environmental Plan No.9 - Extractive Industry (No.2), gazetted 15 September 1995, as amended, applies to the local government area of Penrith.

Sydney Regional Environmental Plan No. 20 - Hawkesbury-Nepean River (No. 2 - 1997), gazetted 7 November 1997, as amended, applies to the local government area of Penrith (except land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies).

The following State environmental planning policies apply to the land (subject to the exclusions noted below):
State Environmental Planning Policy No.1 - Development Standards. (Note: This policy does not apply to the land to which Penrith Local Environmental Plan 2010 or State Environmental Planning Policy (Western Sydney Employment Area) 2009 apply.)
State Environmental Planning Policy No.19 - Bushland in Urban Areas. (Note: This policy does not apply to certain land referred to in the National Parks and Wildlife Act 1974 and the Forestry Act 1916.)
State Environmental Planning Policy No.21 - Caravan Parks.
State Environmental Planning Policy No.30 - Intensive Agriculture.

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PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

State Environmental Planning Policy No.32 - Urban Consolidation (Redevelopment of Urban Land). (Note: This policy does not apply to land identified as coastal protection, environmental protection, escarpment, floodway, natural hazard, non-urban, rural, rural residential, water catchment or wetland.)
State Environmental Planning Policy No.33 - Hazardous and Offensive Development.
State Environmental Planning Policy No.50 - Canal Estate Development. (Note: This policy does not apply to the land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies.
State Environmental Planning Policy No.55 - Remediation of Land.
State Environmental Planning Policy No.62 - Sustainable Aquaculture.
State Environmental Planning Policy No.64 - Advertising and Signage.
State Environmental Planning Policy No.65 - Design Quality of Residential Apartment Development.
State Environmental Planning Policy No.70 - Affordable Housing (Revised Schemes).
State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (Note: This policy applies to land within New South Wales that is land zoned primarily for urban purposes or land that adjoins land zoned primarily for urban purposes, but only as detailed in clause 4 of the policy.)
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004.
State Environmental Planning Policy (Major Development) 2005.
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.
State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007.
State Environmental Planning Policy (Infrastructure) 2007.
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.
State Environmental Planning Policy (Affordable Rental Housing) 2009.
State Environmental Planning Policy (State and Regional Development) 2011.

State Environmental Planning Policy (Western Sydney Employment Area) 2009 applies to the land.

1(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 consultation or on public exhibition under the Act:
(Information is provided in this section only if a proposed environmental planning instrument that is or has been the subject of community consultation or on public exhibition under the Act will apply to the carrying out of development on the land.)

Draft State Environmental Planning Policy (Infrastructure) Amendment (Shooting Ranges) 2013 applies to the land.
Draft State Environmental Planning Policy (Education Establishments and Child Care Facilities) 2017 applies to the land.
State Environmental Planning Policy (Infrastructure) Amendment (Review) 2016 applies to the land

1(3) The name of each development control plan that applies to the carrying out of development on the land:

Penrith Development Control Plan 2014 applies to the land.

2 *ZONING AND LAND USE UNDER RELEVANT LEPs*

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

2(a)-(d) the identity of the zone; the purposes that may be carried out without development consent; the purposes that may not be carried out except with development consent; and the purposes that are prohibited within the zone. Any zone(s) applying to the land is/are listed below and/or in annexures.

PENRITH CITY COUNCIL

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Facsimile: 02 4732 7958

Email: pencit@penrithcity.nsw.gov.au

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

(Note: If no zoning appears in this section see section 1(1) for zoning and land use details (under the Sydney Regional Environmental Plan or State Environmental Planning Policy that zones this property).)

Zone RU2 Rural Landscape
(Penrith Local Environmental Plan 2010)

1 Objectives of zone

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To maintain the rural landscape character of the land.
- To provide for a range of compatible land uses, including extensive agriculture.
- To minimise conflict between land uses within the zone and land uses within adjoining zones.
- To preserve and improve natural resources through appropriate land management practices.
- To ensure development is compatible with the environmental capabilities of the land and does not unreasonably increase the demand for public services or public facilities.

2 Permitted without consent

Extensive agriculture; Home occupations

3 Permitted with consent

Agricultural produce industries; Agriculture; Animal boarding or training establishments; Building identification signs; Business identification signs; Cellar door premises; Cemeteries; Community facilities; Crematoria; Dual occupancies; Dwelling houses; Environmental facilities; Environmental protection works; Farm buildings; Flood mitigation works; Forestry; Funeral homes; Helipads; Home-based child care; Home businesses; Home industries; Information and education facilities; Places of public worship; Public administration buildings; Recreation areas; Recreation facilities (outdoor); Roads; Roadside stalls; Rural supplies; Schools; Secondary dwellings; Stock and sale yards; Tourist and visitor accommodation; Veterinary hospitals

4 Prohibited

Hotel or motel accommodation; Serviced apartments; Any other development not specified in item 2 or 3

Flood planning

All or part of the subject land is identified in Penrith Local Environmental Plan 2010 (PLEP 2010) Clause 7.2 Flood Planning. Development consent is required for any development on land to which Clause 7.2 of PLEP 2010 applies.

Rural subdivision

Under the terms of Clause 4.2 of Penrith Local Environmental Plan 2010 land in Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU4 Primary Production Small Lots or Zone RU6 Transition may, with development consent, be subdivided for the purpose of primary production to

create a lot of a size that is less than the minimum size shown on the Penrith Local Environmental Plan 2010 Lot Size Map in relation to that land. Such a lot cannot be created if an existing dwelling would, as a result of the subdivision, be situated on the lot; and a dwelling cannot be erected on such a lot.

Residential development and subdivision prohibited in certain rural, residential and environment protection zones

Under the terms of Clause 4.2A of Penrith Local Environmental Plan 2010 (PLEP 2010) on land within Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU4 Primary Production Small Lots, Zone RU5 Village, Zone R5 Large Lot Residential, Zone E3 Environmental Management or Zone E4 Environmental Living development consent must not be granted for the erection of a dwelling house on a lot resulting from the closure of part or all of a road, whether before or after the commencement of this Plan. This requirement does not apply to a lot created by the consolidation of a lot resulting from a road closure with an adjoining lot that did not result from a road closure.

Additional information relating to Penrith Local Environmental Plan 2010

Note 1: Under the terms of Clause 2.4 of Penrith Local Environmental Plan 2010 development may be carried out on unzoned land only with development consent.

Note 2: Under the terms of Clause 2.6 of Penrith Local Environmental Plan 2010 land may be subdivided but only with development consent, except for the exclusions detailed in the clause.

Note 3: Under the terms of Clause 2.7 of Penrith Local Environmental Plan 2010 the demolition of a building or work may be carried out only with development consent.

Note 4: A temporary use may be permitted with development consent subject to the requirements of Clause 2.8 of Penrith Local Environmental Plan 2010.

Note 5: Under the terms of Clause 4.1A of Penrith Local Environmental Plan 2010, despite any other provision of this plan, development consent must not be granted for dual occupancy on an internal lot in Zone R2 Low Density Residential.

Note 6: Under the terms of Clause 5.1 of Penrith Local Environmental Plan 2010 development on land acquired by an authority of the State under the owner-initiated acquisition provisions may, before it is used for the purpose for which it is reserved, be carried out, with development consent, for any purpose.

Note 7: Under the terms of Clause 5.3 of Penrith Local Environmental Plan 2010 development consent may be granted to development of certain land for any purpose that may be carried out in an adjoining zone.

Note 8: Under the terms of Clause 5.9 of Penrith Local Environmental Plan 2010 trees or other vegetation subject to relevant sections of Penrith Development Control Plan 2014 must not be ringbarked, cut down, topped, lopped, removed, injured or wilfully destroyed without the authority conferred by a development consent or a Council permit.

Note 9: Under the terms of Clause 5.9AA of Penrith Local Environmental Plan 2010 (PLEP 2010) any tree or other vegetation that is not of a species or kind prescribed for the purposes of Clause 5.9 of PLEP 2010 by Penrith Development Control Plan 2014 may be ringbarked, cut down, topped, lopped, removed, injured or destroyed without development consent.

Note 10: Clause 5.10 of Penrith Local Environmental Plan 2010 details when development consent is required/not required in relation to heritage conservation.

Note 11: Under the terms of Clause 5.11 of Penrith Local Environmental Plan 2010 bush fire hazard reduction work authorised by the *Rural Fires Act 1997* may be carried out on any land without development consent.

Note 12: Under the terms of Clause 7.1 of Penrith Local Environmental Plan 2010 (PLEP 2010) development consent is required for earthworks unless the work is exempt development under PLEP 2010 or another applicable environmental planning instrument, or the work is ancillary to other development for which development consent has been given.

Note 13: Sex services premises and restricted premises may only be permitted subject to the requirements of Clause 7.23 of Penrith Local Environmental Plan 2010.

2(e) 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:

(Information is provided in this section only if 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.)

2(f) whether the land includes or comprises critical habitat:

(Information is provided in this section only if the land includes or comprises critical habitat.)

2(g) whether the land is in a conservation area (however described):

(Information is provided in this section only if the land is in a conservation area (however described).)

2(h) whether an item of environmental heritage (however described) is situated on the land:

(Information is provided in this section only if an item of environmental heritage (however described) is situated on the land.)

2A ZONING AND LAND USE UNDER STATE ENVIRONMENTAL PLANNING POLICY (SYDNEY REGION GROWTH CENTRES) 2006

(Information is provided in this section only if the land is within any zone under State Environmental Planning Policy (Sydney Region Growth Centres) 2006.)

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PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

3 COMPLYING DEVELOPMENT

GENERAL HOUSING CODE

(The General Housing Code only applies if the land is within Zones R1, R2, R3, R4 or RU5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

Complying development under the General Housing Code **may** be carried out on the land if the land is within one of the abovementioned zones.

RURAL HOUSING CODE

(The Rural Housing Code only applies if the land is within Zones RU1, RU2, RU3, RU4, RU6 or R5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

Complying development under the Rural Housing Code **may** be carried out on the land if the land is within one of the abovementioned zones.

HOUSING ALTERATIONS CODE

Complying development under the Housing Alterations Code **may** be carried out on the land.

GENERAL DEVELOPMENT CODE

Complying development under the General Development Code **may** be carried out on the land.

COMMERCIAL AND INDUSTRIAL ALTERATIONS CODE

Complying development under the Commercial and Industrial Alterations Code **may** be carried out on the land.

SUBDIVISIONS CODE

Complying development under the Subdivisions Code **may** be carried out on the land.

DEMOLITION CODE

Complying development under the Demolition Code **may** be carried out on the land.

COMMERCIAL AND INDUSTRIAL (NEW BUILDINGS AND ADDITIONS) CODE

(The Commercial and Industrial (New Buildings and Additions) Code only applies if the land is within Zones B1, B2, B3, B4, B5, B6, B7, B8, IN1, IN2, IN3, IN4 or SP3 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

Complying development under the Commercial and Industrial (New Buildings and Alterations) Code **may** be carried out on the land if the land is within one of the abovementioned zones.

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FIRE SAFETY CODE

Complying development under the Fire Safety Code **may** be carried out on the land.

(NOTE: (1) Council has relied on Planning and Infrastructure Circulars and Fact Sheets in the preparation of this information. Applicants should seek their own legal advice in relation to this matter with particular reference to State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

(2) Penrith Local Environmental Plan 2010 (if it applies to the land) contains additional complying development not specified in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.)

4 COASTAL PROTECTION

The land is not affected by the operation of sections 38 or 39 of the Coastal Protection Act 1979, to the extent that council has been so notified by the Department of Public Works.

5 MINE SUBSIDENCE

The land is not proclaimed to be a mine subsidence district within the meaning of section 15 of the Mine Subsidence Compensation Act 1961.

6 ROAD WIDENING AND ROAD REALIGNMENT

The land is not affected by any road widening or road realignment under:
(a) Division 2 of Part 3 of the Roads Act 1993, or
(b) an environmental planning instrument, or
(c) a resolution of council.

7 COUNCIL AND OTHER PUBLIC AUTHORITY POLICIES ON HAZARD RISK RESTRICTIONS

(a) Council Policies
The land is affected by the Asbestos Policy adopted by Council.
The land is not affected by any other policy adopted by the council that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

(b) Other Public Authority Policies
The Bush Fire Co-ordinating Committee has adopted a Bush Fire Risk Management Plan that covers the local government area of Penrith City Council, and includes public, private and Commonwealth lands.
The land is not affected by a policy 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, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

7A FLOOD RELATED DEVELOPMENT CONTROLS INFORMATION

(1) Development on the 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) (if such uses are permissible on the land) is subject to flood related development controls.

(2) Development on the land or part of the land for industrial or commercial purposes (if such uses are permissible on the land) is subject to flood related development controls.
Development on the land or part of the land for purposes other than industrial or commercial, or for purposes other than those referred to in (1) above, will be considered on a merits based approach and flood related development controls may apply.

Note: The land is subject to Penrith Development Control Plan 2014 Section C3.5 Flood Planning. On application and payment of the prescribed fee Council may be able to provide in writing a range of advice in regard to the extent of flooding affecting the property.

8 LAND RESERVED FOR ACQUISITION

No 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.

9 CONTRIBUTIONS PLANS

The Cultural Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith.

The Penrith City Local Open Space Development Contributions Plan 2007 applies anywhere residential development is permitted within the City of Penrith, excluding industrial areas and the release areas identified in Appendix B of the Plan (Penrith Lakes, Cranebrook, Sydney Regional Environmental Plan No. 30 - St Marys, Waterside, Thornton, the WELL Precinct, Glenmore Park and Erskine Park). See <http://www.penrithcity.nsw.gov.au/uploadedFiles/Content/Website/Our_Services/Planning_and_Development/Planning__Zoning_Information/Local_Planning_Documents/LocalOpenSpaceDCP(1).pdf>

The Penrith City District Open Space Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith, with the exclusion of industrial lands and the Penrith Lakes development site.

9A BIODIVERSITY CERTIFIED LAND

(Information is provided in this section only if the land is biodiversity certified land (within the meaning of Part 7AA of the *Threatened Species Conservation Act 1995*).)

10 BIOBANKING AGREEMENTS

(Information is provided in this section only if Council has been notified by the Director-General of the Department of Environment, Climate Change and Water that the land is land to which a biobanking agreement under Part 7A of the *Threatened Species Conservation Act 1995* relates.)

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11 BUSH FIRE PRONE LAND

All of the land is identified as bush fire prone land according to Council records. Guidance as to restrictions that may be placed on the land as a result of the land being bush fire prone can be obtained by contacting Council. Such advice would be subject to further requirements of the NSW Rural Fire Services.

12 PROPERTY VEGETATION PLANS

(Information is provided in this section only if Council has been notified that the land is land to which a property vegetation plan under the Native Vegetation Act 2003 applies.)

13 ORDERS UNDER TREES (DISPUTES BETWEEN NEIGHBOURS) ACT 2006

(Information is provided in this section only if Council has been notified that an order has been made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land.)

14 DIRECTIONS UNDER PART 3A

(Information is provided in this section only 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.)

15 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS AFFECTING SENIORS HOUSING

(Information is provided in this section only if:

(a) there is a current site compatibility certificate (seniors housing), of which the council is aware, issued under State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 in respect of proposed development on the land; and/or

(b) any terms of a kind referred to in clause 18(2) of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.)

16 SITE COMPATIBILITY CERTIFICATES FOR INFRASTRUCTURE

(Information is provided in this section only if there is a valid site compatibility certificate (infrastructure), of which council is aware, in respect of proposed development on the land.)

17 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR AFFORDABLE RENTAL HOUSING

(Information is provided in this section only if:

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

(b) any terms of a kind referred to in clause 17(1) or 37(1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 have been imposed as a condition of consent to a development application in respect of the land.)

18 PAPER SUBDIVISION INFORMATION

(Information is provided in this section only if a development plan adopted by a relevant authority applies to the land or is proposed to be subject to a consent ballot, or a subdivision order applies to the land.)

19 SITE VERIFICATION CERTIFICATES

(Information is provided in this section only if there is a current site verification certificate, of which council is aware, in respect of the land.)

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) (Information is provided in this section only if, as at the date of this certificate, the land (or part of the land) is significantly contaminated land within the meaning of the Contaminated Land Management Act 1997.)

(b) (Information is provided in this section only if, as at the date of this certificate, the land is subject to a management order within the meaning of the Contaminated Land Management Act 1997.)

(c) (Information is provided in this section only if, as at the date of this certificate, the land is the subject of an approved voluntary management proposal within the meaning of the Contaminated Land Management Act 1997.)

(d) (Information is provided in this section only if, at the date of this certificate, the land subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997.)

(e) (Information is provided in this section only if the land is the subject of a site audit statement within the meaning of the Contaminated Land Management Act 1997 – a copy of which has been provided to Council.)

Note: Section 149(5) information for this property may contain additional information regarding contamination issues.

Note: The Environmental Planning and Assessment Amendment Act 1997 commenced operation on the 1 July 1998. As a consequence of this Act the information contained in this certificate needs to be read in conjunction with the provisions of the Environmental Planning and Assessment (Amendment) Regulation 1998, Environmental Planning and Assessment (Further Amendment) Regulation 1998 and Environmental Planning and Assessment (Savings and Transitional) Regulation 1998 and Environmental Planning and Assessment Regulation 2000.

Information is provided only to the extent that Council has been notified by relevant government departments.

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PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

149(5) Certificate
This Certificate is directed to the following relevant matters affecting the land

When information pursuant to section 149(5) is requested the Council is under no obligation to furnish any of the information supplied herein pursuant to that section. Council draws your attention to section 149(6) which states that a council shall not incur any liability in respect of any advice provided in good faith pursuant to sub-section (5). The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this certificate.

Note:

- Council's 149(5) information does not include development consent or easement information. Details of development consents may be obtained by making enquiries with Council's Development Services Department pursuant to section 12 of the Local Government Act 1993 or (for development applications lodged after January 2007) by viewing the Online Services area at www.penrithcity.nsw.gov.au . Details of any easements may be obtained from a Title Search at Land and Property Information New South Wales.
- This certificate does not contain information relating to Complying Development Certificates.
- This certificate may not provide full details of development rights over the land.
-

* Threatened Species Conservation Act 1995

When considering any development application Council must have regard to the Threatened Species Conservation Act 1995. Please note that this legislation may have application to any land throughout the city. Interested persons should make their own enquiries in regard to the impact that this legislation could have on this land.

* Agricultural Activities Within Rural Areas

This property is located in a rural area and there may be certain agricultural activities occurring that some people may find offensive (for example noise, dust and odours). This should be considered if you purchase the subject property or build a dwelling thereon.
If you do purchase the subject property or build a dwelling, the potential impact that your activities (for example pets, inadequate fencing, drainage, litter and poor weed control) might have on the agricultural activities in the area should also be considered.

* Broader Western Sydney Employment Area (WSEA) Draft Structure Plan

The land is affected by the Broader Western Sydney Employment Area (WSEA) draft Structure Plan. The draft Structure Plan outlines a broad framework for the area including the location of future employment land and centres, a road network, potential freight and transport corridors and staging scenarios. Contact the Department of Planning and Environment for details.

* Scenic and Landscape Values

The land is identified as "Land with Scenic and Landscape Values" on the Penrith Local Environmental Plan 2010 Scenic and Landscape Values Map. See Clause 7.5 of Penrith Local Environmental Plan 2010 and Chapter C1 Site Planning and Design of Penrith Development Control Plan 2014.

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

* Preservation of Trees and Vegetation

See Clauses 5.9 and 5.9AA of Penrith Local Environmental Plan 2010 and Chapter C2 of Penrith Development Control Plan 2014 for specific controls relating to the preservation of trees and vegetation.

* Dual Occupancy and Secondary Dwellings Controls

See Clause 7.10 of Penrith Local Environmental Plan 2010 for specific controls relating to dual occupancy and secondary dwellings in Zones RU1, RU2, RU4, E3 and E4.

* Development Control Plan General Information

Penrith Development Control Plan 2014 which applies to the land, sets out requirements for a range of issues that apply across the Penrith Local Government Area, including:

- Site Planning and Design Principles
- Vegetation Management
- Water Management
- Land Management
- Waste Management
- Landscape Design
- Culture and Heritage
- Public Domain
- Advertising and Signage
- Transport, Access and Parking
- Subdivision
- Noise and Vibration, and
- Infrastructure and Services.

The Development Control Plan also specifies requirements relating to various types of land uses including:

- Rural Land Uses
- Residential Development
- Commercial and Retail Development, and
- Industrial Development

as well as for a number of specific activities, including child care centres; health consulting rooms; educational establishments; parent friendly amenities; places of public worship; vehicle repair stations; cemeteries, crematoria and funeral homes; extractive industries; and telecommunication facilities.
The Development Control Plan also details requirements relating to key precincts within the Penrith Local Government Area, including:

- Caddens
- Claremont Meadows Stage 2
- Cranebrook
- Emu Heights
- Emu Plains
- Erskine Business Park
- Glenmore Park
- Kingswood
- Mulgoa Valley

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- Orchard Hills
- Penrith
- Penrith Health and Education Precinct
- Riverlink Precinct
- St Clair,
- St Marys / St Marys North, and
- Sydney Science Park.

Penrith Development Control Plan 2014 may be accessed at https://www.penrithcity.nsw.gov.au/Building-and-Development/Planning-and-Zoning/Planning-Controls/Development-Control-Plans/

Alan Stoneham
General Manager

PER



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PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

Property No: 783877
Your Reference: PCC LOT 34 KEMPS CREEK
Contact No:

Issue Date: 15 March 2017
Certificate No: 17/01243

Issued to: Nicola Wells/JBSG
50 Margaret Street
SYDNEY NSW 2000

PRECINCT 2010

DESCRIPTION OF LAND

County: CUMBERLAND **Parish: MELVILLE**

Location: 657-703 Mamre Road KEMPS CREEK NSW 2178
Land Description: Lot 34 DP 1118173

- PART 1 PRESCRIBED MATTERS –

In accordance with the provisions of Section 149(2) of the Act the following information is furnished in respect of the abovementioned land:

1 *NAMES OF RELEVANT PLANNING INSTRUMENTS AND DCPs*

1(1) The name of each environmental planning instrument that applies to the carrying out of development on the land:

Penrith Local Environmental Plan 2010, published 22nd September 2010, as amended, applies to the land.

Sydney Regional Environmental Plan No.9 - Extractive Industry (No.2), gazetted 15 September 1995, as amended, applies to the local government area of Penrith.

Sydney Regional Environmental Plan No. 20 - Hawkesbury-Nepean River (No. 2 - 1997), gazetted 7 November 1997, as amended, applies to the local government area of Penrith (except land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies).

The following State environmental planning policies apply to the land (subject to the exclusions noted below):
State Environmental Planning Policy No.1 - Development Standards. (Note: This policy does not apply to the land to which Penrith Local Environmental Plan 2010 or State Environmental Planning Policy (Western Sydney Employment Area) 2009 apply.)
State Environmental Planning Policy No.19 - Bushland in Urban Areas. (Note: This policy does not apply to certain land referred to in the National Parks and Wildlife Act 1974 and the Forestry Act 1916.)
State Environmental Planning Policy No.21 - Caravan Parks.
State Environmental Planning Policy No.30 - Intensive Agriculture.

PLANNING CERTIFICATE UNDER SECTION 149

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State Environmental Planning Policy No.32 - Urban Consolidation (Redevelopment of Urban Land). (Note: This policy does not apply to land identified as coastal protection, environmental protection, escarpment, floodway, natural hazard, non-urban, rural, rural residential, water catchment or wetland.)
State Environmental Planning Policy No.33 - Hazardous and Offensive Development.
State Environmental Planning Policy No.50 - Canal Estate Development. (Note: This policy does not apply to the land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies.
State Environmental Planning Policy No.55 - Remediation of Land.
State Environmental Planning Policy No.62 - Sustainable Aquaculture.
State Environmental Planning Policy No.64 - Advertising and Signage.
State Environmental Planning Policy No.65 - Design Quality of Residential Apartment Development.
State Environmental Planning Policy No.70 - Affordable Housing (Revised Schemes).
State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (Note: This policy applies to land within New South Wales that is land zoned primarily for urban purposes or land that adjoins land zoned primarily for urban purposes, but only as detailed in clause 4 of the policy.)
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004.
State Environmental Planning Policy (Major Development) 2005.
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.
State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007.
State Environmental Planning Policy (Infrastructure) 2007.
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.
State Environmental Planning Policy (Affordable Rental Housing) 2009.
State Environmental Planning Policy (State and Regional Development) 2011.

State Environmental Planning Policy (Western Sydney Employment Area) 2009 applies to the land.

1(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 consultation or on public exhibition under the Act:
(Information is provided in this section only if a proposed environmental planning instrument that is or has been the subject of community consultation or on public exhibition under the Act will apply to the carrying out of development on the land.)

Draft State Environmental Planning Policy (Infrastructure) Amendment (Shooting Ranges) 2013 applies to the land.
Draft State Environmental Planning Policy (Education Establishments and Child Care Facilities) 2017 applies to the land.
State Environmental Planning Policy (Infrastructure) Amendment (Review) 2016 applies to the land

1(3) The name of each development control plan that applies to the carrying out of development on the land:

Penrith Development Control Plan 2014 applies to the land.

2 *ZONING AND LAND USE UNDER RELEVANT LEPs*

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

2(a)-(d) the identity of the zone; the purposes that may be carried out without development consent; the purposes that may not be carried out except with development consent; and the purposes that are prohibited within the zone. Any zone(s) applying to the land is/are listed below and/or in annexures.

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(Note: If no zoning appears in this section see section 1(1) for zoning and land use details (under the Sydney Regional Environmental Plan or State Environmental Planning Policy that zones this property).)

Zone RU2 Rural Landscape
(Penrith Local Environmental Plan 2010)

1 Objectives of zone

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To maintain the rural landscape character of the land.
- To provide for a range of compatible land uses, including extensive agriculture.
- To minimise conflict between land uses within the zone and land uses within adjoining zones.
- To preserve and improve natural resources through appropriate land management practices.
- To ensure development is compatible with the environmental capabilities of the land and does not unreasonably increase the demand for public services or public facilities.

2 Permitted without consent

Extensive agriculture; Home occupations

3 Permitted with consent

Agricultural produce industries; Agriculture; Animal boarding or training establishments; Building identification signs; Business identification signs; Cellar door premises; Cemeteries; Community facilities; Crematoria; Dual occupancies; Dwelling houses; Environmental facilities; Environmental protection works; Farm buildings; Flood mitigation works; Forestry; Funeral homes; Helipads; Home-based child care; Home businesses; Home industries; Information and education facilities; Places of public worship; Public administration buildings; Recreation areas; Recreation facilities (outdoor); Roads; Roadside stalls; Rural supplies; Schools; Secondary dwellings; Stock and sale yards; Tourist and visitor accommodation; Veterinary hospitals

4 Prohibited

Hotel or motel accommodation; Serviced apartments; Any other development not specified in item 2 or 3

Zone SP2 Infrastructure - Classified Road
(Penrith Local Environmental Plan 2010)

1 Objectives of zone

- To provide for infrastructure and related uses.
- To prevent development that is not compatible with or that may detract from the provision of infrastructure.

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2 Permitted without consent

Nil

3 Permitted with consent

The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose; Environmental protection works; Flood mitigation works; Roads

4 Prohibited

Any development not specified in item 2 or 3

Flood planning

All or part of the subject land is identified in Penrith Local Environmental Plan 2010 (PLEP 2010) Clause 7.2 Flood Planning. Development consent is required for any development on land to which Clause 7.2 of PLEP 2010 applies.

Rural subdivision

Under the terms of Clause 4.2 of Penrith Local Environmental Plan 2010 land in Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU4 Primary Production Small Lots or Zone RU6 Transition may, with development consent, be subdivided for the purpose of primary production to create a lot of a size that is less than the minimum size shown on the Penrith Local Environmental Plan 2010 Lot Size Map in relation to that land. Such a lot cannot be created if an existing dwelling would, as a result of the subdivision, be situated on the lot; and a dwelling cannot be erected on such a lot.

Residential development and subdivision prohibited in certain rural, residential and environment protection zones

Under the terms of Clause 4.2A of Penrith Local Environmental Plan 2010 (PLEP 2010) on land within Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU4 Primary Production Small Lots, Zone RU5 Village, Zone R5 Large Lot Residential, Zone E3 Environmental Management or Zone E4 Environmental Living development consent must not be granted for the erection of a dwelling house on a lot resulting from the closure of part or all of a road, whether before or after the commencement of this Plan. This requirement does not apply to a lot created by the consolidation of a lot resulting from a road closure with an adjoining lot that did not result from a road closure.

Additional information relating to Penrith Local Environmental Plan 2010

Note 1: Under the terms of Clause 2.4 of Penrith Local Environmental Plan 2010 development may be carried out on unzoned land only with development consent.

Note 2: Under the terms of Clause 2.6 of Penrith Local Environmental Plan 2010 land may be subdivided but only with development consent, except for the exclusions detailed in the clause.

Note 3: Under the terms of Clause 2.7 of Penrith Local Environmental Plan 2010 the demolition of a building or work may be carried out only with development consent.

Note 4: A temporary use may be permitted with development consent subject to the requirements of Clause 2.8 of Penrith Local Environmental Plan 2010.

Note 5: Under the terms of Clause 4.1A of Penrith Local Environmental Plan 2010, despite any other provision of this plan, development consent must not be granted for dual occupancy on an internal lot in Zone R2 Low Density Residential.

Note 6: Under the terms of Clause 5.1 of Penrith Local Environmental Plan 2010 development on land acquired by an authority of the State under the owner-initiated acquisition provisions may, before it is used for the purpose for which it is reserved, be carried out, with development consent, for any purpose.

Note 7: Under the terms of Clause 5.3 of Penrith Local Environmental Plan 2010 development consent may be granted to development of certain land for any purpose that may be carried out in an adjoining zone.

Note 8: Under the terms of Clause 5.9 of Penrith Local Environmental Plan 2010 trees or other vegetation subject to relevant sections of Penrith Development Control Plan 2014 must not be ringbarked, cut down, topped, lopped, removed, injured or wilfully destroyed without the authority conferred by a development consent or a Council permit.

Note 9: Under the terms of Clause 5.9AA of Penrith Local Environmental Plan 2010 (PLEP 2010) any tree or other vegetation that is not of a species or kind prescribed for the purposes of Clause 5.9 of PLEP 2010 by Penrith Development Control Plan 2014 may be ringbarked, cut down, topped, lopped, removed, injured or destroyed without development consent.

Note 10: Clause 5.10 of Penrith Local Environmental Plan 2010 details when development consent is required/not required in relation to heritage conservation.

Note 11: Under the terms of Clause 5.11 of Penrith Local Environmental Plan 2010 bush fire hazard reduction work authorised by the *Rural Fires Act 1997* may be carried out on any land without development consent.

Note 12: Under the terms of Clause 7.1 of Penrith Local Environmental Plan 2010 (PLEP 2010) development consent is required for earthworks unless the work is exempt development under PLEP 2010 or another applicable environmental planning instrument, or the work is ancillary to other development for which development consent has been given.

Note 13: Sex services premises and restricted premises may only be permitted subject to the requirements of Clause 7.23 of Penrith Local Environmental Plan 2010.

2(e) 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:

(Information is provided in this section only if 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.)

2(f) whether the land includes or comprises critical habitat:

(Information is provided in this section only if the land includes or comprises critical habitat.)

2(g) whether the land is in a conservation area (however described):

(Information is provided in this section only if the land is in a conservation area (however described).)

2(h) whether an item of environmental heritage (however described) is situated on the land:

(Information is provided in this section only if an item of environmental heritage (however described) is situated on the land.)

2A ZONING AND LAND USE UNDER STATE ENVIRONMENTAL PLANNING POLICY (SYDNEY REGION GROWTH CENTRES) 2006

(Information is provided in this section only if the land is within any zone under State Environmental Planning Policy (Sydney Region Growth Centres) 2006.)

3 COMPLYING DEVELOPMENT

GENERAL HOUSING CODE
(The General Housing Code only applies if the land is within Zones R1, R2, R3, R4 or RU5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

- The land is affected by a reservation for a public purpose. If the land is within the relevant zones complying development under the General Housing Code **may not** be carried out on any part of the land that is reserved for a public purpose by an environmental planning instrument. Complying development **may** be carried out on any part of the land that is not reserved for a public purpose by an environmental planning instrument. For the purposes of this section "public purpose" means any land that is zoned either Zone E1, RE1, SP1 or SP2 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument, or land that is subject to acquisition.

- The land is affected by environmentally sensitive land identified by an environmental planning instrument. If the land is within the relevant zones complying development under the General Housing Code **may not** be carried out on any part of the land identified by an environmental planning instrument as being environmentally sensitive land. Complying development **may** be carried out on any part of the land that is not identified by an environmental planning instrument as being environmentally sensitive land. For the purposes of this section "environmentally sensitive land" means any land that is identified in Schedule 3 of Sydney Regional Environmental Plan No. 9 - Extractive Industry (No. 2); any land defined as "environmentally sensitive areas" in Sydney Regional Environmental Plan No 20 - Hawkesbury-Nepean River (No 2 - 1997); any land zoned Zone E2 Environmental Conservation under State Environmental Planning Policy (Western Sydney Employment Area) 2009; any Natural Resources Sensitive Land under Penrith Local Environmental Plan 2010; and any land zoned either Zone E1 National Parks and Nature Reserves, Zone E2

Environmental Conservation, Zone W1 Natural Waterways or Zone W2 Recreational Waterways under Penrith Local Environmental Plan 2010.

RURAL HOUSING CODE

(The Rural Housing Code only applies if the land is within Zones RU1, RU2, RU3, RU4, RU6 or R5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

- The land is affected by a reservation for a public purpose. If the land is within the relevant zones complying development under the Rural Housing Code **may not** be carried out on any part of the land that is reserved for a public purpose by an environmental planning instrument. Complying development **may** be carried out on any part of the land that is not reserved for a public purpose by an environmental planning instrument. For the purposes of this section "public purpose" means any land that is zoned either Zone E1, RE1, SP1 or SP2 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument, or land that is subject to acquisition.

- The land is affected by environmentally sensitive land identified by an environmental planning instrument. If the land is within the relevant zones complying development under the Rural Housing Code **may not** be carried out on any part of the land identified by an environmental planning instrument as being environmentally sensitive land. Complying development **may** be carried out on any part of the land that is not identified by an environmental planning instrument as being environmentally sensitive land. For the purposes of this section "environmentally sensitive land" means any land that is identified in Schedule 3 of Sydney Regional Environmental Plan No. 9 - Extractive Industry (No. 2); any land defined as "environmentally sensitive areas" in Sydney Regional Environmental Plan No 20 - Hawkesbury-Nepean River (No 2 - 1997); any land zoned Zone E2 Environmental Conservation under State Environmental Planning Policy (Western Sydney Employment Area) 2009; any Natural Resources Sensitive Land under Penrith Local Environmental Plan 2010; and any land zoned either Zone E1 National Parks and Nature Reserves, Zone E2 Environmental Conservation, Zone W1 Natural Waterways or Zone W2 Recreational Waterways under Penrith Local Environmental Plan 2010.

HOUSING ALTERATIONS CODE

Complying development under the Housing Alterations Code **may** be carried out on the land.

GENERAL DEVELOPMENT CODE

Complying development under the General Development Code **may** be carried out on the land.

COMMERCIAL AND INDUSTRIAL ALTERATIONS CODE

Complying development under the Commercial and Industrial Alterations Code **may** be carried out on the land.

SUBDIVISIONS CODE

Complying development under the Subdivisions Code **may** be carried out on the land.

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DEMOLITION CODE

Complying development under the Demolition Code **may** be carried out on the land.

COMMERCIAL AND INDUSTRIAL (NEW BUILDINGS AND ADDITIONS) CODE

(The Commercial and Industrial (New Buildings and Additions) Code only applies if the land is within Zones B1, B2, B3, B4, B5, B6, B7, B8, IN1, IN2, IN3, IN4 or SP3 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

- The land is affected by a reservation for a public purpose. If the land is within the relevant zones complying development under the Commercial and Industrial (New Buildings and Additions) Code **may not** be carried out on any part of the land that is reserved for a public purpose by an environmental planning instrument. Complying development **may** be carried out on any part of the land that is not reserved for a public purpose by an environmental planning instrument. For the purposes of this section "public purpose" means any land that is zoned either Zone E1, RE1, SP1 or SP2 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument, or land that is subject to acquisition.

- The land is affected by environmentally sensitive land identified by an environmental planning instrument. If the land is within the relevant zones complying development under the Commercial and Industrial (New Buildings and Additions) Code **may not** be carried out on any part of the land identified by an environmental planning instrument as being environmentally sensitive land. Complying development **may** be carried out on any part of the land that is not identified by an environmental planning instrument as being environmentally sensitive land. For the purposes of this section "environmentally sensitive land" means any land that is identified in Schedule 3 of Sydney Regional Environmental Plan No. 9 - Extractive Industry (No. 2); any land defined as "environmentally sensitive areas" in Sydney Regional Environmental Plan No 20 - Hawkesbury-Nepean River (No 2 - 1997); any land zoned Zone E2 Environmental Conservation under State Environmental Planning Policy (Western Sydney Employment Area) 2009; any Natural Resources Sensitive Land under Penrith Local Environmental Plan 2010; and any land zoned either Zone E1 National Parks and Nature Reserves, Zone E2 Environmental Conservation, Zone W1 Natural Waterways or Zone W2 Recreational Waterways under Penrith Local Environmental Plan 2010.

FIRE SAFETY CODE

Complying development under the Fire Safety Code **may** be carried out on the land.

(NOTE: (1) Council has relied on Planning and Infrastructure Circulars and Fact Sheets in the preparation of this information. Applicants should seek their own legal advice in relation to this matter with particular reference to State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

(2) Penrith Local Environmental Plan 2010 (if it applies to the land) contains additional complying development not specified in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.)

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4 COASTAL PROTECTION

The land is not affected by the operation of sections 38 or 39 of the Coastal Protection Act 1979, to the extent that council has been so notified by the Department of Public Works.

5 MINE SUBSIDENCE

The land is not proclaimed to be a mine subsidence district within the meaning of section 15 of the Mine Subsidence Compensation Act 1961.

6 ROAD WIDENING AND ROAD REALIGNMENT

The land is affected by road widening or road realignment under
(a) Division 2 of Part 3 of the Roads Act 1993, or
(b) an environmental planning instrument, or
(c) a resolution of Council.
Note: Additional advice may be available in section 149(5) information.

7 COUNCIL AND OTHER PUBLIC AUTHORITY POLICIES ON HAZARD RISK RESTRICTIONS

(a) Council Policies
The land is affected by the Asbestos Policy adopted by Council.
The land is not affected by any other policy adopted by the council that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

(b) Other Public Authority Policies
The Bush Fire Co-ordinating Committee has adopted a Bush Fire Risk Management Plan that covers the local government area of Penrith City Council, and includes public, private and Commonwealth lands.
The land is not affected by a policy 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, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

7A FLOOD RELATED DEVELOPMENT CONTROLS INFORMATION

(1) Development on the 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) (if such uses are permissible on the land) is subject to flood related development controls.

(2) Development on the land or part of the land for industrial or commercial purposes (if such uses are permissible on the land) is subject to flood related development controls.
Development on the land or part of the land for purposes other than industrial or commercial, or for purposes other than those referred to in (1) above, will be considered on a merits based approach and flood related development controls may apply.

Note: The land is subject to Penrith Development Control Plan 2014 Section C3.5 Flood Planning. On application and payment of the prescribed fee Council may be able to provide in writing a range of advice in regard to the extent of flooding affecting the property.

8 LAND RESERVED FOR ACQUISITION

An environmental planning instrument or a proposed environmental planning instrument referred to in clause 1 of this certificate makes provision in relation to the acquisition of the land by a public authority, as referred to in section 27 of the Act.

9 CONTRIBUTIONS PLANS

The Cultural Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith.

The Penrith City Local Open Space Development Contributions Plan 2007 applies anywhere residential development is permitted within the City of Penrith, excluding industrial areas and the release areas identified in Appendix B of the Plan (Penrith Lakes, Cranebrook, Sydney Regional Environmental Plan No. 30 - St Marys, Waterside, Thornton, the WELL Precinct, Glenmore Park and Erskine Park). See <http://www.penrithcity.nsw.gov.au/uploadedFiles/Content/Website/Our_Services/Planning_and_Development/Planning__Zoning_Information/Local_Planning_Documents/LocalOpenSpaceDCP(1).pdf>

The Penrith City District Open Space Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith, with the exclusion of industrial lands and the Penrith Lakes development site.

9A BIODIVERSITY CERTIFIED LAND

(Information is provided in this section only if the land is biodiversity certified land (within the meaning of Part 7AA of the *Threatened Species Conservation Act 1995*).)

10 BIOBANKING AGREEMENTS

(Information is provided in this section only if Council has been notified by the Director-General of the Department of Environment, Climate Change and Water that the land is land to which a biobanking agreement under Part 7A of the *Threatened Species Conservation Act 1995* relates.)

11 BUSH FIRE PRONE LAND

All of the land is identified as bush fire prone land according to Council records. Guidance as to restrictions that may be placed on the land as a result of the land being bush fire prone can be obtained by contacting Council. Such advice would be subject to further requirements of the NSW Rural Fire Services.

12 PROPERTY VEGETATION PLANS

(Information is provided in this section only if Council has been notified that the land is land to which a property vegetation plan under the Native Vegetation Act 2003 applies.)

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13 ORDERS UNDER TREES (DISPUTES BETWEEN NEIGHBOURS) ACT 2006

(Information is provided in this section only if Council has been notified that an order has been made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land.)

14 DIRECTIONS UNDER PART 3A

(Information is provided in this section only 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.)

15 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS AFFECTING SENIORS HOUSING

(Information is provided in this section only if:

(a) there is a current site compatibility certificate (seniors housing), of which the council is aware, issued under State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 in respect of proposed development on the land; and/or

(b) any terms of a kind referred to in clause 18(2) of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.)

16 SITE COMPATIBILITY CERTIFICATES FOR INFRASTRUCTURE

(Information is provided in this section only if there is a valid site compatibility certificate (infrastructure), of which council is aware, in respect of proposed development on the land.)

17 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR AFFORDABLE RENTAL HOUSING

(Information is provided in this section only if:

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

(b) any terms of a kind referred to in clause 17(1) or 37(1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 have been imposed as a condition of consent to a development application in respect of the land.)

18 PAPER SUBDIVISION INFORMATION

(Information is provided in this section only if a development plan adopted by a relevant authority applies to the land or is proposed to be subject to a consent ballot, or a subdivision order applies to the land.)

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19 SITE VERIFICATION CERTIFICATES

(Information is provided in this section only if there is a current site verification certificate, of which council is aware, in respect of the land.)

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) (Information is provided in this section only if, as at the date of this certificate, the land (or part of the land) is significantly contaminated land within the meaning of the Contaminated Land Management Act 1997.)

(b) (Information is provided in this section only if, as at the date of this certificate, the land is subject to a management order within the meaning of the Contaminated Land Management Act 1997.)

(c) (Information is provided in this section only if, as at the date of this certificate, the land is the subject of an approved voluntary management proposal within the meaning of the Contaminated Land Management Act 1997.)

(d) (Information is provided in this section only if, at the date of this certificate, the land subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997.)

(e) (Information is provided in this section only if the land is the subject of a site audit statement within the meaning of the Contaminated Land Management Act 1997 – a copy of which has been provided to Council.)

Note: Section 149(5) information for this property may contain additional information regarding contamination issues.

Note: The Environmental Planning and Assessment Amendment Act 1997 commenced operation on the 1 July 1998. As a consequence of this Act the information contained in this certificate needs to be read in conjunction with the provisions of the Environmental Planning and Assessment (Amendment) Regulation 1998, Environmental Planning and Assessment (Further Amendment) Regulation 1998 and Environmental Planning and Assessment (Savings and Transitional) Regulation 1998 and Environmental Planning and Assessment Regulation 2000.

Information is provided only to the extent that Council has been notified by relevant government departments.

149(5) Certificate
This Certificate is directed to the following relevant matters affecting the land

When information pursuant to section 149(5) is requested the Council is under no obligation to furnish any of the information supplied herein pursuant to that section. Council draws your attention to section 149(6) which states that a council shall not incur any liability in respect of any advice provided in good faith pursuant to sub-section (5). The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this certificate.

Note:

- Council's 149(5) information does not include development consent or easement information. Details of development consents may be obtained by making enquiries with Council's Development Services Department pursuant to section 12 of the Local Government Act 1993 or (for development applications lodged after January 2007) by viewing the Online Services area at www.penrithcity.nsw.gov.au . Details of any easements may be obtained from a Title Search at Land and Property Information New South Wales.
- This certificate does not contain information relating to Complying Development Certificates.
- This certificate may not provide full details of development rights over the land.
-

* Threatened Species Conservation Act 1995

When considering any development application Council must have regard to the Threatened Species Conservation Act 1995. Please note that this legislation may have application to any land throughout the city. Interested persons should make their own enquiries in regard to the impact that this legislation could have on this land.

* Agricultural Activities Within Rural Areas

This property is located in a rural area and there may be certain agricultural activities occurring that some people may find offensive (for example noise, dust and odours). This should be considered if you purchase the subject property or build a dwelling thereon.
If you do purchase the subject property or build a dwelling, the potential impact that your activities (for example pets, inadequate fencing, drainage, litter and poor weed control) might have on the agricultural activities in the area should also be considered.

* Broader Western Sydney Employment Area (WSEA) Draft Structure Plan

The land is affected by the Broader Western Sydney Employment Area (WSEA) draft Structure Plan. The draft Structure Plan outlines a broad framework for the area including the location of future employment land and centres, a road network, potential freight and transport corridors and staging scenarios. Contact the Department of Planning and Environment for details.

* Scenic and Landscape Values

The land is identified as "Land with Scenic and Landscape Values" on the Penrith Local Environmental Plan 2010 Scenic and Landscape Values Map. See Clause 7.5 of Penrith Local Environmental Plan 2010 and Chapter C1 Site Planning and Design of Penrith Development Control Plan 2014.

* Preservation of Trees and Vegetation

See Clauses 5.9 and 5.9AA of Penrith Local Environmental Plan 2010 and Chapter C2 of Penrith Development Control Plan 2014 for specific controls relating to the preservation of trees and vegetation.

* Dual Occupancy and Secondary Dwellings Controls

See Clause 7.10 of Penrith Local Environmental Plan 2010 for specific controls relating to dual occupancy and secondary dwellings in Zones RU1, RU2, RU4, E3 and E4.

* Development Control Plan General Information

Penrith Development Control Plan 2014 which applies to the land, sets out requirements for a range of issues that apply across the Penrith Local Government Area, including:

- Site Planning and Design Principles

- Vegetation Management
- Water Management
- Land Management
- Waste Management
- Landscape Design
- Culture and Heritage
- Public Domain
- Advertising and Signage
- Transport, Access and Parking
- Subdivision
- Noise and Vibration, and
- Infrastructure and Services.

The Development Control Plan also specifies requirements relating to various types of land uses including:

- Rural Land Uses
- Residential Development
- Commercial and Retail Development, and
- Industrial Development

as well as for a number of specific activities, including child care centres; health consulting rooms; educational establishments; parent friendly amenities; places of public worship; vehicle repair stations; cemeteries, crematoria and funeral homes; extractive industries; and telecommunication facilities.

The Development Control Plan also details requirements relating to key precincts within the Penrith Local Government Area, including:

- Caddens
- Claremont Meadows Stage 2
- Cranebrook
- Emu Heights
- Emu Plains
- Erskine Business Park
- Glenmore Park
- Kingswood
- Mulgoa Valley
- Orchard Hills
- Penrith
- Penrith Health and Education Precinct
- Riverlink Precinct
- St Clair,
- St Marys / St Marys North, and
- Sydney Science Park.

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Penrith Development Control Plan 2014 may be accessed at https://www.penrithcity.nsw.gov.au/Building-and-Development/Planning-and-Zoning/Planning-Controls/Development-Control-Plans/

Alan Stoneham
General Manager

PER



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PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

Property No: 402317
Your Reference: PCC LOT X
Contact No:

Issue Date: 15 March 2017
Certificate No: 17/01242

Issued to: Nicola Well/JBSG
50 Margaret Street
SYDNEY NSW 2000

PRECINCT 2010

DESCRIPTION OF LAND

County: CUMBERLAND **Parish: MELVILLE**

Location: 707-711 Mamre Road KEMPS CREEK NSW 2178
Land Description: Lot X DP 421633

- PART 1 PRESCRIBED MATTERS –

In accordance with the provisions of Section 149(2) of the Act the following information is furnished in respect of the abovementioned land:

1 *NAMES OF RELEVANT PLANNING INSTRUMENTS AND DCPs*

1(1) The name of each environmental planning instrument that applies to the carrying out of development on the land:

Penrith Local Environmental Plan 2010, published 22nd September 2010, as amended, applies to the land.

Sydney Regional Environmental Plan No.9 - Extractive Industry (No.2), gazetted 15 September 1995, as amended, applies to the local government area of Penrith.

Sydney Regional Environmental Plan No. 20 - Hawkesbury-Nepean River (No. 2 - 1997), gazetted 7 November 1997, as amended, applies to the local government area of Penrith (except land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies).

The following State environmental planning policies apply to the land (subject to the exclusions noted below):
State Environmental Planning Policy No.1 - Development Standards. (Note: This policy does not apply to the land to which Penrith Local Environmental Plan 2010 or State Environmental Planning Policy (Western Sydney Employment Area) 2009 apply.)
State Environmental Planning Policy No.19 - Bushland in Urban Areas. (Note: This policy does not apply to certain land referred to in the National Parks and Wildlife Act 1974 and the Forestry Act 1916.)
State Environmental Planning Policy No.21 - Caravan Parks.
State Environmental Planning Policy No.30 - Intensive Agriculture.

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State Environmental Planning Policy No.32 - Urban Consolidation (Redevelopment of Urban Land). (Note: This policy does not apply to land identified as coastal protection, environmental protection, escarpment, floodway, natural hazard, non-urban, rural, rural residential, water catchment or wetland.)
State Environmental Planning Policy No.33 - Hazardous and Offensive Development.
State Environmental Planning Policy No.50 - Canal Estate Development. (Note: This policy does not apply to the land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies.
State Environmental Planning Policy No.55 - Remediation of Land.
State Environmental Planning Policy No.62 - Sustainable Aquaculture.
State Environmental Planning Policy No.64 - Advertising and Signage.
State Environmental Planning Policy No.65 - Design Quality of Residential Apartment Development.
State Environmental Planning Policy No.70 - Affordable Housing (Revised Schemes).
State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (Note: This policy applies to land within New South Wales that is land zoned primarily for urban purposes or land that adjoins land zoned primarily for urban purposes, but only as detailed in clause 4 of the policy.)
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004.
State Environmental Planning Policy (Major Development) 2005.
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.
State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007.
State Environmental Planning Policy (Infrastructure) 2007.
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.
State Environmental Planning Policy (Affordable Rental Housing) 2009.
State Environmental Planning Policy (State and Regional Development) 2011.

State Environmental Planning Policy (Western Sydney Employment Area) 2009 applies to the land.

1(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 consultation or on public exhibition under the Act:
(Information is provided in this section only if a proposed environmental planning instrument that is or has been the subject of community consultation or on public exhibition under the Act will apply to the carrying out of development on the land.)

Draft State Environmental Planning Policy (Infrastructure) Amendment (Shooting Ranges) 2013 applies to the land.
Draft State Environmental Planning Policy (Education Establishments and Child Care Facilities) 2017 applies to the land.
State Environmental Planning Policy (Infrastructure) Amendment (Review) 2016 applies to the land

1(3) The name of each development control plan that applies to the carrying out of development on the land:

Penrith Development Control Plan 2014 applies to the land.

2 *ZONING AND LAND USE UNDER RELEVANT LEPs*

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

2(a)-(d) the identity of the zone; the purposes that may be carried out without development consent; the purposes that may not be carried out except with development consent; and the purposes that are prohibited within the zone. Any zone(s) applying to the land is/are listed below and/or in annexures.

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(Note: If no zoning appears in this section see section 1(1) for zoning and land use details (under the Sydney Regional Environmental Plan or State Environmental Planning Policy that zones this property).)

Zone RU2 Rural Landscape

(Penrith Local Environmental Plan 2010)

1 Objectives of zone

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To maintain the rural landscape character of the land.
- To provide for a range of compatible land uses, including extensive agriculture.
- To minimise conflict between land uses within the zone and land uses within adjoining zones.
- To preserve and improve natural resources through appropriate land management practices.
- To ensure development is compatible with the environmental capabilities of the land and does not unreasonably increase the demand for public services or public facilities.

2 Permitted without consent

Extensive agriculture; Home occupations

3 Permitted with consent

Agricultural produce industries; Agriculture; Animal boarding or training establishments; Building identification signs; Business identification signs; Cellar door premises; Cemeteries; Community facilities; Crematoria; Dual occupancies; Dwelling houses; Environmental facilities; Environmental protection works; Farm buildings; Flood mitigation works; Forestry; Funeral homes; Helipads; Home-based child care; Home businesses; Home industries; Information and education facilities; Places of public worship; Public administration buildings; Recreation areas; Recreation facilities (outdoor); Roads; Roadside stalls; Rural supplies; Schools; Secondary dwellings; Stock and sale yards; Tourist and visitor accommodation; Veterinary hospitals

4 Prohibited

Hotel or motel accommodation; Serviced apartments; Any other development not specified in item 2 or 3

Use of certain land at 707-711 Mamre Road, Kemps Creek

Despite anything to the contrary detailed above, or any other provision of Penrith Local Environmental Plan 2010 (PLEP 2010), under the provisions of Clause 2.5 and Schedule 1 of PLEP 2010:

- Development for the purposes of rural supplies, with a maximum floor area of 950m^2, is permitted with consent on the subject land.
- Development for the purposes of landscaping material supplies and plant nursery, with a growing and propagation area not exceeding 1600m^2, is permitted with consent on the subject land.

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Flood planning

All or part of the subject land is identified in Penrith Local Environmental Plan 2010 (PLEP 2010) Clause 7.2 Flood Planning. Development consent is required for any development on land to which Clause 7.2 of PLEP 2010 applies.

Rural subdivision

Under the terms of Clause 4.2 of Penrith Local Environmental Plan 2010 land in Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU4 Primary Production Small Lots or Zone RU6 Transition may, with development consent, be subdivided for the purpose of primary production to create a lot of a size that is less than the minimum size shown on the Penrith Local Environmental Plan 2010 Lot Size Map in relation to that land. Such a lot cannot be created if an existing dwelling would, as a result of the subdivision, be situated on the lot; and a dwelling cannot be erected on such a lot.

Residential development and subdivision prohibited in certain rural, residential and environment protection zones

Under the terms of Clause 4.2A of Penrith Local Environmental Plan 2010 (PLEP 2010) on land within Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU4 Primary Production Small Lots, Zone RU5 Village, Zone R5 Large Lot Residential, Zone E3 Environmental Management or Zone E4 Environmental Living development consent must not be granted for the erection of a dwelling house on a lot resulting from the closure of part or all of a road, whether before or after the commencement of this Plan. This requirement does not apply to a lot created by the consolidation of a lot resulting from a road closure with an adjoining lot that did not result from a road closure.

Additional information relating to Penrith Local Environmental Plan 2010

Note 1: Under the terms of Clause 2.4 of Penrith Local Environmental Plan 2010 development may be carried out on unzoned land only with development consent.

Note 2: Under the terms of Clause 2.6 of Penrith Local Environmental Plan 2010 land may be subdivided but only with development consent, except for the exclusions detailed in the clause.

Note 3: Under the terms of Clause 2.7 of Penrith Local Environmental Plan 2010 the demolition of a building or work may be carried out only with development consent.

Note 4: A temporary use may be permitted with development consent subject to the requirements of Clause 2.8 of Penrith Local Environmental Plan 2010.

Note 5: Under the terms of Clause 4.1A of Penrith Local Environmental Plan 2010, despite any other provision of this plan, development consent must not be granted for dual occupancy on an internal lot in Zone R2 Low Density Residential.

Note 6: Under the terms of Clause 5.1 of Penrith Local Environmental Plan 2010 development on land acquired by an authority of the State under the owner-initiated acquisition provisions may, before it is used for the purpose for which it is reserved, be carried out, with development consent, for any purpose.

Note 7: Under the terms of Clause 5.3 of Penrith Local Environmental Plan 2010 development consent may be granted to development of certain land for any purpose that may be carried out in an adjoining zone.

Note 8: Under the terms of Clause 5.9 of Penrith Local Environmental Plan 2010 trees or other vegetation subject to relevant sections of Penrith Development Control Plan 2014 must not be ringbarked, cut down, topped, lopped, removed, injured or wilfully destroyed without the authority conferred by a development consent or a Council permit.

Note 9: Under the terms of Clause 5.9AA of Penrith Local Environmental Plan 2010 (PLEP 2010) any tree or other vegetation that is not of a species or kind prescribed for the purposes of Clause 5.9 of PLEP 2010 by Penrith Development Control Plan 2014 may be ringbarked, cut down, topped, lopped, removed, injured or destroyed without development consent.

Note 10: Clause 5.10 of Penrith Local Environmental Plan 2010 details when development consent is required/not required in relation to heritage conservation.

Note 11: Under the terms of Clause 5.11 of Penrith Local Environmental Plan 2010 bush fire hazard reduction work authorised by the *Rural Fires Act 1997* may be carried out on any land without development consent.

Note 12: Under the terms of Clause 7.1 of Penrith Local Environmental Plan 2010 (PLEP 2010) development consent is required for earthworks unless the work is exempt development under PLEP 2010 or another applicable environmental planning instrument, or the work is ancillary to other development for which development consent has been given.

Note 13: Sex services premises and restricted premises may only be permitted subject to the requirements of Clause 7.23 of Penrith Local Environmental Plan 2010.

2(e) 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:

(Information is provided in this section only if 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.)

2(f) whether the land includes or comprises critical habitat:

(Information is provided in this section only if the land includes or comprises critical habitat.)

2(g) whether the land is in a conservation area (however described):

(Information is provided in this section only if the land is in a conservation area (however described).)

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2(h) whether an item of environmental heritage (however described) is situated on the land:

(Information is provided in this section only if an item of environmental heritage (however described) is situated on the land.)

2A ZONING AND LAND USE UNDER STATE ENVIRONMENTAL PLANNING POLICY (SYDNEY REGION GROWTH CENTRES) 2006

(Information is provided in this section only if the land is within any zone under State Environmental Planning Policy (Sydney Region Growth Centres) 2006.)

3 COMPLYING DEVELOPMENT

GENERAL HOUSING CODE
(The General Housing Code only applies if the land is within Zones R1, R2, R3, R4 or RU5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

Complying development under the General Housing Code **may** be carried out on the land if the land is within one of the abovementioned zones.

RURAL HOUSING CODE
(The Rural Housing Code only applies if the land is within Zones RU1, RU2, RU3, RU4, RU6 or R5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

Complying development under the Rural Housing Code **may** be carried out on the land if the land is within one of the abovementioned zones.

HOUSING ALTERATIONS CODE

Complying development under the Housing Alterations Code **may** be carried out on the land.

GENERAL DEVELOPMENT CODE

Complying development under the General Development Code **may** be carried out on the land.

COMMERCIAL AND INDUSTRIAL ALTERATIONS CODE

Complying development under the Commercial and Industrial Alterations Code **may** be carried out on the land.

SUBDIVISIONS CODE

Complying development under the Subdivisions Code **may** be carried out on the land.

DEMOLITION CODE

Complying development under the Demolition Code **may** be carried out on the land.

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COMMERCIAL AND INDUSTRIAL (NEW BUILDINGS AND ADDITIONS) CODE
(The Commercial and Industrial (New Buildings and Additions) Code only applies if the land is within Zones B1, B2, B3, B4, B5, B6, B7, B8, IN1, IN2, IN3, IN4 or SP3 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

Complying development under the Commercial and Industrial (New Buildings and Alterations) Code **may** be carried out on the land if the land is within one of the abovementioned zones.

FIRE SAFETY CODE

Complying development under the Fire Safety Code **may** be carried out on the land.

(NOTE: (1) Council has relied on Planning and Infrastructure Circulars and Fact Sheets in the preparation of this information. Applicants should seek their own legal advice in relation to this matter with particular reference to State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.
(2) Penrith Local Environmental Plan 2010 (if it applies to the land) contains additional complying development not specified in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.)

4 COASTAL PROTECTION

The land is not affected by the operation of sections 38 or 39 of the Coastal Protection Act 1979, to the extent that council has been so notified by the Department of Public Works.

5 MINE SUBSIDENCE

The land is not proclaimed to be a mine subsidence district within the meaning of section 15 of the Mine Subsidence Compensation Act 1961.

6 ROAD WIDENING AND ROAD REALIGNMENT

The land is not affected by any road widening or road realignment under:
(a) Division 2 of Part 3 of the Roads Act 1993, or
(b) an environmental planning instrument, or
(c) a resolution of council.

7 COUNCIL AND OTHER PUBLIC AUTHORITY POLICIES ON HAZARD RISK RESTRICTIONS

(a) Council Policies
The land is affected by the Asbestos Policy adopted by Council.
The land is not affected by any other policy adopted by the council that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

(b) Other Public Authority Policies

The Bush Fire Co-ordinating Committee has adopted a Bush Fire Risk Management Plan that covers the local government area of Penrith City Council, and includes public, private and Commonwealth lands.

The land is not affected by a policy 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, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

7A FLOOD RELATED DEVELOPMENT CONTROLS INFORMATION

(1) Development on the 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) (if such uses are permissible on the land) is subject to flood related development controls.

(2) Development on the land or part of the land for industrial or commercial purposes (if such uses are permissible on the land) is subject to flood related development controls.

Development on the land or part of the land for purposes other than industrial or commercial, or for purposes other than those referred to in (1) above, will be considered on a merits based approach and flood related development controls may apply.

Note: The land is subject to Penrith Development Control Plan 2014 Section C3.5 Flood Planning. On application and payment of the prescribed fee Council may be able to provide in writing a range of advice in regard to the extent of flooding affecting the property.

8 LAND RESERVED FOR ACQUISITION

No 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.

9 CONTRIBUTIONS PLANS

The Cultural Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith.

The Penrith City Local Open Space Development Contributions Plan 2007 applies anywhere residential development is permitted within the City of Penrith, excluding industrial areas and the release areas identified in Appendix B of the Plan (Penrith Lakes, Cranebrook, Sydney Regional Environmental Plan No. 30 - St Marys, Waterside, Thornton, the WELL Precinct, Glenmore Park and Erskine Park). See <http://www.penrithcity.nsw.gov.au/uploadedFiles/Content/Website/Our_Services/Planning_and_Development/Planning__Zoning_Information/Local_Planning_Documents/LocalOpenSpaceDCP(1).pdf>

The Penrith City District Open Space Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith, with the exclusion of industrial lands and the Penrith Lakes development site.

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9A BIODIVERSITY CERTIFIED LAND

(Information is provided in this section only if the land is biodiversity certified land (within the meaning of Part 7AA of the *Threatened Species Conservation Act 1995*).)

10 BIOBANKING AGREEMENTS

(Information is provided in this section only if Council has been notified by the Director-General of the Department of Environment, Climate Change and Water that the land is land to which a biobanking agreement under Part 7A of the *Threatened Species Conservation Act 1995* relates.)

11 BUSH FIRE PRONE LAND

All of the land is identified as bush fire prone land according to Council records. Guidance as to restrictions that may be placed on the land as a result of the land being bush fire prone can be obtained by contacting Council. Such advice would be subject to further requirements of the NSW Rural Fire Services.

12 PROPERTY VEGETATION PLANS

(Information is provided in this section only if Council has been notified that the land is land to which a property vegetation plan under the Native Vegetation Act 2003 applies.)

13 ORDERS UNDER TREES (DISPUTES BETWEEN NEIGHBOURS) ACT 2006

(Information is provided in this section only if Council has been notified that an order has been made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land.)

14 DIRECTIONS UNDER PART 3A

(Information is provided in this section only 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.)

15 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS AFFECTING SENIORS HOUSING

(Information is provided in this section only if:

(a) there is a current site compatibility certificate (seniors housing), of which the council is aware, issued under State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 in respect of proposed development on the land; and/or

(b) any terms of a kind referred to in clause 18(2) of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.)

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16 SITE COMPATIBILITY CERTIFICATES FOR INFRASTRUCTURE

(Information is provided in this section only if there is a valid site compatibility certificate (infrastructure), of which council is aware, in respect of proposed development on the land.)

17 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR AFFORDABLE RENTAL HOUSING

(Information is provided in this section only if:

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

(b) any terms of a kind referred to in clause 17(1) or 37(1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 have been imposed as a condition of consent to a development application in respect of the land.)

18 PAPER SUBDIVISION INFORMATION

(Information is provided in this section only if a development plan adopted by a relevant authority applies to the land or is proposed to be subject to a consent ballot, or a subdivision order applies to the land.)

19 SITE VERIFICATION CERTIFICATES

(Information is provided in this section only if there is a current site verification certificate, of which council is aware, in respect of the land.)

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) (Information is provided in this section only if, as at the date of this certificate, the land (or part of the land) is significantly contaminated land within the meaning of the Contaminated Land Management Act 1997.)

(b) (Information is provided in this section only if, as at the date of this certificate, the land is subject to a management order within the meaning of the Contaminated Land Management Act 1997.)

(c) (Information is provided in this section only if, as at the date of this certificate, the land is the subject of an approved voluntary management proposal within the meaning of the Contaminated Land Management Act 1997.)

(d) (Information is provided in this section only if, at the date of this certificate, the land subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997.)

(e) (Information is provided in this section only if the land is the subject of a site audit statement within the meaning of the Contaminated Land Management Act 1997 – a copy of which has been provided to Council.)

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PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

Note: Section 149(5) information for this property may contain additional information regarding contamination issues.

Note: The Environmental Planning and Assessment Amendment Act 1997 commenced operation on the 1 July 1998. As a consequence of this Act the information contained in this certificate needs to be read in conjunction with the provisions of the Environmental Planning and Assessment (Amendment) Regulation 1998, Environmental Planning and Assessment (Further Amendment) Regulation 1998 and Environmental Planning and Assessment (Savings and Transitional) Regulation 1998 and Environmental Planning and Assessment Regulation 2000.

Information is provided only to the extent that Council has been notified by relevant government departments.

149(5) Certificate
This Certificate is directed to the following relevant matters affecting the land

When information pursuant to section 149(5) is requested the Council is under no obligation to furnish any of the information supplied herein pursuant to that section. Council draws your attention to section 149(6) which states that a council shall not incur any liability in respect of any advice provided in good faith pursuant to sub-section (5). The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this certificate.

Note:

- Council's 149(5) information does not include development consent or easement information. Details of development consents may be obtained by making enquiries with Council's Development Services Department pursuant to section 12 of the Local Government Act 1993 or (for development applications lodged after January 2007) by viewing the Online Services area at www.penrithcity.nsw.gov.au . Details of any easements may be obtained from a Title Search at Land and Property Information New South Wales.
- This certificate does not contain information relating to Complying Development Certificates.
- This certificate may not provide full details of development rights over the land.
-

* Threatened Species Conservation Act 1995

When considering any development application Council must have regard to the Threatened Species Conservation Act 1995. Please note that this legislation may have application to any land throughout the city. Interested persons should make their own enquiries in regard to the impact that this legislation could have on this land.

* Agricultural Activities Within Rural Areas

This property is located in a rural area and there may be certain agricultural activities occurring that some people may find offensive (for example noise, dust and odours). This should be considered if you purchase the subject property or build a dwelling thereon.
If you do purchase the subject property or build a dwelling, the potential impact that your activities (for example pets, inadequate fencing, drainage, litter and poor weed control) might have on the agricultural activities in the area should also be considered.

* Broader Western Sydney Employment Area (WSEA) Draft Structure Plan

The land is affected by the Broader Western Sydney Employment Area (WSEA) draft Structure Plan. The draft Structure Plan outlines a broad framework for the area including the location of future employment land and centres, a road network, potential freight and transport corridors and staging scenarios. Contact the Department of Planning and Environment for details.

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* Scenic and Landscape Values

The land is identified as "Land with Scenic and Landscape Values" on the Penrith Local Environmental Plan 2010 Scenic and Landscape Values Map. See Clause 7.5 of Penrith Local Environmental Plan 2010 and Chapter C1 Site Planning and Design of Penrith Development Control Plan 2014.

* Preservation of Trees and Vegetation

See Clauses 5.9 and 5.9AA of Penrith Local Environmental Plan 2010 and Chapter C2 of Penrith Development Control Plan 2014 for specific controls relating to the preservation of trees and vegetation.

* Dual Occupancy and Secondary Dwellings Controls

See Clause 7.10 of Penrith Local Environmental Plan 2010 for specific controls relating to dual occupancy and secondary dwellings in Zones RU1, RU2, RU4, E3 and E4.

* Development Control Plan General Information

Penrith Development Control Plan 2014 which applies to the land, sets out requirements for a range of issues that apply across the Penrith Local Government Area, including:

- Site Planning and Design Principles
- Vegetation Management
- Water Management
- Land Management
- Waste Management
- Landscape Design
- Culture and Heritage
- Public Domain
- Advertising and Signage
- Transport, Access and Parking
- Subdivision
- Noise and Vibration, and
- Infrastructure and Services.

The Development Control Plan also specifies requirements relating to various types of land uses including:

- Rural Land Uses
- Residential Development
- Commercial and Retail Development, and
- Industrial Development

as well as for a number of specific activities, including child care centres; health consulting rooms; educational establishments; parent friendly amenities; places of public worship; vehicle repair stations; cemeteries, crematoria and funeral homes; extractive industries; and telecommunication facilities.
The Development Control Plan also details requirements relating to key precincts within the Penrith Local Government Area, including:

- Caddens
- Claremont Meadows Stage 2
- Cranebrook

- Emu Heights
- Emu Plains
- Erskine Business Park
- Glenmore Park
- Kingswood
- Mulgoa Valley
- Orchard Hills
- Penrith
- Penrith Health and Education Precinct
- Riverlink Precinct
- St Clair,
- St Marys / St Marys North, and
- Sydney Science Park.

Penrith Development Control Plan 2014 may be accessed at https://www.penrithcity.nsw.gov.au/Building-and-Development/Planning-and-Zoning/Planning-Controls/Development-Control-Plans/

* Western Sydney Airport

The Australian Government announced on 15 April 2014 that Badgerys Creek will be the site for a new airport for Western Sydney. The Government released a draft Airport Plan and a draft Environmental Impact Statement (EIS) on 19 October 2015. On 15 September 2016, the Government announced the finalisation of the EIS, which has been presented to the Minister for the Environment and Energy for consideration. Enquiries regarding the airport should be made with the Department of Infrastructure and Regional Development. (Website: http://westernsydneyairport.gov.au)

Alan Stoneham
General Manager

PER



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PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

Property No: 779135
Your Reference: PCC LOT1
Contact No:

Issue Date: 15 March 2017
Certificate No: 17/01240

Issued to: Nicola Wells/JBSG
50 Margaret Street
SYDNEY NSW 2000

PRECINCT 2010

DESCRIPTION OF LAND

County: CUMBERLAND **Parish: CLAREMONT**

Location: 707a Mamre Road KEMPS CREEK NSW 2178
Land Description: Lot 1 DP 1018318

- PART 1 PRESCRIBED MATTERS –

In accordance with the provisions of Section 149(2) of the Act the following information is furnished in respect of the abovementioned land:

1 *NAMES OF RELEVANT PLANNING INSTRUMENTS AND DCPs*

1(1) The name of each environmental planning instrument that applies to the carrying out of development on the land:

Penrith Local Environmental Plan 2010, published 22nd September 2010, as amended, applies to the land.

Sydney Regional Environmental Plan No.9 - Extractive Industry (No.2), gazetted 15 September 1995, as amended, applies to the local government area of Penrith.

Sydney Regional Environmental Plan No. 20 - Hawkesbury-Nepean River (No. 2 - 1997), gazetted 7 November 1997, as amended, applies to the local government area of Penrith (except land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies).

The following State environmental planning policies apply to the land (subject to the exclusions noted below):
State Environmental Planning Policy No.1 - Development Standards. (Note: This policy does not apply to the land to which Penrith Local Environmental Plan 2010 or State Environmental Planning Policy (Western Sydney Employment Area) 2009 apply.)
State Environmental Planning Policy No.19 - Bushland in Urban Areas. (Note: This policy does not apply to certain land referred to in the National Parks and Wildlife Act 1974 and the Forestry Act 1916.)
State Environmental Planning Policy No.21 - Caravan Parks.
State Environmental Planning Policy No.30 - Intensive Agriculture.

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PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

State Environmental Planning Policy No.32 - Urban Consolidation (Redevelopment of Urban Land). (Note: This policy does not apply to land identified as coastal protection, environmental protection, escarpment, floodway, natural hazard, non-urban, rural, rural residential, water catchment or wetland.)
State Environmental Planning Policy No.33 - Hazardous and Offensive Development.
State Environmental Planning Policy No.50 - Canal Estate Development. (Note: This policy does not apply to the land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies.
State Environmental Planning Policy No.55 - Remediation of Land.
State Environmental Planning Policy No.62 - Sustainable Aquaculture.
State Environmental Planning Policy No.64 - Advertising and Signage.
State Environmental Planning Policy No.65 - Design Quality of Residential Apartment Development.
State Environmental Planning Policy No.70 - Affordable Housing (Revised Schemes).
State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (Note: This policy applies to land within New South Wales that is land zoned primarily for urban purposes or land that adjoins land zoned primarily for urban purposes, but only as detailed in clause 4 of the policy.)
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004.
State Environmental Planning Policy (Major Development) 2005.
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.
State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007.
State Environmental Planning Policy (Infrastructure) 2007.
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.
State Environmental Planning Policy (Affordable Rental Housing) 2009.
State Environmental Planning Policy (State and Regional Development) 2011.

State Environmental Planning Policy (Western Sydney Employment Area) 2009 applies to the land.

1(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 consultation or on public exhibition under the Act:
(Information is provided in this section only if a proposed environmental planning instrument that is or has been the subject of community consultation or on public exhibition under the Act will apply to the carrying out of development on the land.)

Draft State Environmental Planning Policy (Infrastructure) Amendment (Shooting Ranges) 2013 applies to the land.
Draft State Environmental Planning Policy (Education Establishments and Child Care Facilities) 2017 applies to the land.
State Environmental Planning Policy (Infrastructure) Amendment (Review) 2016 applies to the land

1(3) The name of each development control plan that applies to the carrying out of development on the land:

Penrith Development Control Plan 2014 applies to the land.

2 *ZONING AND LAND USE UNDER RELEVANT LEPs*

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

2(a)-(d) the identity of the zone; the purposes that may be carried out without development consent; the purposes that may not be carried out except with development consent; and the purposes that are prohibited within the zone. Any zone(s) applying to the land is/are listed below and/or in annexures.

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PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

(Note: If no zoning appears in this section see section 1(1) for zoning and land use details (under the Sydney Regional Environmental Plan or State Environmental Planning Policy that zones this property).)

Zone E2 Environmental Conservation

(Penrith Local Environmental Plan 2010)

1 Objectives of zone

- To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.
- To prevent development that could destroy, damage or otherwise have an adverse effect on those values.
- To protect, manage, restore and enhance the ecology, hydrology and scenic values of riparian corridors and waterways, wetlands, groundwater resources, biodiversity corridors, areas of remnant indigenous vegetation and dependent ecosystems.
- To allow for low impact passive recreational and ancillary land uses that are consistent with the retention of the natural ecological significance.

2 Permitted without consent

Nil

3 Permitted with consent

Environment facilities; Environmental protection works; Flood mitigation works; Recreation areas; Roads

4 Prohibited

Business premises; Hotel or motel accommodation; Industries; Multi dwelling housing; Recreation facilities (major); Residential flat buildings; Restricted premises; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3

Zone RU2 Rural Landscape

(Penrith Local Environmental Plan 2010)

1 Objectives of zone

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To maintain the rural landscape character of the land.
- To provide for a range of compatible land uses, including extensive agriculture.
- To minimise conflict between land uses within the zone and land uses within adjoining zones.
- To preserve and improve natural resources through appropriate land management practices.
- To ensure development is compatible with the environmental capabilities of the land and does not unreasonably increase the demand for public services or public facilities.

2 Permitted without consent

Extensive agriculture; Home occupations

3 Permitted with consent

Agricultural produce industries; Agriculture; Animal boarding or training establishments; Building identification signs; Business identification signs; Cellar door premises; Cemeteries; Community facilities; Crematoria; Dual occupancies; Dwelling houses; Environmental facilities; Environmental protection works; Farm buildings; Flood mitigation works; Forestry; Funeral homes; Helipads; Home-based child care; Home businesses; Home industries; Information and education facilities; Places of public worship; Public administration buildings; Recreation areas; Recreation facilities (outdoor); Roads; Roadside stalls; Rural supplies; Schools; Secondary dwellings; Stock and sale yards; Tourist and visitor accommodation; Veterinary hospitals

4 Prohibited

Hotel or motel accommodation; Serviced apartments; Any other development not specified in item 2 or 3

Flood planning

All or part of the subject land is identified in Penrith Local Environmental Plan 2010 (PLEP 2010) Clause 7.2 Flood Planning. Development consent is required for any development on land to which Clause 7.2 of PLEP 2010 applies.

Rural subdivision

Under the terms of Clause 4.2 of Penrith Local Environmental Plan 2010 land in Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU4 Primary Production Small Lots or Zone RU6 Transition may, with development consent, be subdivided for the purpose of primary production to create a lot of a size that is less than the minimum size shown on the Penrith Local Environmental Plan 2010 Lot Size Map in relation to that land. Such a lot cannot be created if an existing dwelling would, as a result of the subdivision, be situated on the lot; and a dwelling cannot be erected on such a lot.

Residential development and subdivision prohibited in certain rural, residential and environment protection zones

Under the terms of Clause 4.2A of Penrith Local Environmental Plan 2010 (PLEP 2010) on land within Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU4 Primary Production Small Lots, Zone RU5 Village, Zone R5 Large Lot Residential, Zone E3 Environmental Management or Zone E4 Environmental Living development consent must not be granted for the erection of a dwelling house on a lot resulting from the closure of part or all of a road, whether before or after the commencement of this Plan. This requirement does not apply to a lot created by the consolidation of a lot resulting from a road closure with an adjoining lot that did not result from a road closure.

Additional information relating to Penrith Local Environmental Plan 2010

Note 1: Under the terms of Clause 2.4 of Penrith Local Environmental Plan 2010 development may be carried out on unzoned land only with development consent.

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

Note 2: Under the terms of Clause 2.6 of Penrith Local Environmental Plan 2010 land may be subdivided but only with development consent, except for the exclusions detailed in the clause.

Note 3: Under the terms of Clause 2.7 of Penrith Local Environmental Plan 2010 the demolition of a building or work may be carried out only with development consent.

Note 4: A temporary use may be permitted with development consent subject to the requirements of Clause 2.8 of Penrith Local Environmental Plan 2010.

Note 5: Under the terms of Clause 4.1A of Penrith Local Environmental Plan 2010, despite any other provision of this plan, development consent must not be granted for dual occupancy on an internal lot in Zone R2 Low Density Residential.

Note 6: Under the terms of Clause 5.1 of Penrith Local Environmental Plan 2010 development on land acquired by an authority of the State under the owner-initiated acquisition provisions may, before it is used for the purpose for which it is reserved, be carried out, with development consent, for any purpose.

Note 7: Under the terms of Clause 5.3 of Penrith Local Environmental Plan 2010 development consent may be granted to development of certain land for any purpose that may be carried out in an adjoining zone.

Note 8: Under the terms of Clause 5.9 of Penrith Local Environmental Plan 2010 trees or other vegetation subject to relevant sections of Penrith Development Control Plan 2014 must not be ringbarked, cut down, topped, lopped, removed, injured or wilfully destroyed without the authority conferred by a development consent or a Council permit.

Note 9: Under the terms of Clause 5.9AA of Penrith Local Environmental Plan 2010 (PLEP 2010) any tree or other vegetation that is not of a species or kind prescribed for the purposes of Clause 5.9 of PLEP 2010 by Penrith Development Control Plan 2014 may be ringbarked, cut down, topped, lopped, removed, injured or destroyed without development consent.

Note 10: Clause 5.10 of Penrith Local Environmental Plan 2010 details when development consent is required/not required in relation to heritage conservation.

Note 11: Under the terms of Clause 5.11 of Penrith Local Environmental Plan 2010 bush fire hazard reduction work authorised by the *Rural Fires Act 1997* may be carried out on any land without development consent.

Note 12: Under the terms of Clause 7.1 of Penrith Local Environmental Plan 2010 (PLEP 2010) development consent is required for earthworks unless the work is exempt development under PLEP 2010 or another applicable environmental planning instrument, or the work is ancillary to other development for which development consent has been given.

Note 13: Sex services premises and restricted premises may only be permitted subject to the requirements of Clause 7.23 of Penrith Local Environmental Plan 2010.

2(e) 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:

(Information is provided in this section only if 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.)

2(f) whether the land includes or comprises critical habitat:

(Information is provided in this section only if the land includes or comprises critical habitat.)

2(g) whether the land is in a conservation area (however described):

(Information is provided in this section only if the land is in a conservation area (however described).)

2(h) whether an item of environmental heritage (however described) is situated on the land:

(Information is provided in this section only if an item of environmental heritage (however described) is situated on the land.)

2A ZONING AND LAND USE UNDER STATE ENVIRONMENTAL PLANNING POLICY (SYDNEY REGION GROWTH CENTRES) 2006

(Information is provided in this section only if the land is within any zone under State Environmental Planning Policy (Sydney Region Growth Centres) 2006.)

3 COMPLYING DEVELOPMENT

GENERAL HOUSING CODE
(The General Housing Code only applies if the land is within Zones R1, R2, R3, R4 or RU5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

- The land is affected by environmentally sensitive land identified by an environmental planning instrument. If the land is within the relevant zones complying development under the General Housing Code **may not** be carried out on any part of the land identified by an environmental planning instrument as being environmentally sensitive land. Complying development **may** be carried out on any part of the land that is not identified by an environmental planning instrument as being environmentally sensitive land. For the purposes of this section "environmentally sensitive land" means any land that is identified in Schedule 3 of Sydney Regional Environmental Plan No. 9 - Extractive Industry (No. 2); any land defined as "environmentally sensitive areas" in Sydney Regional Environmental Plan No 20 - Hawkesbury-Nepean River (No 2 - 1997); any land zoned Zone E2 Environmental Conservation under State Environmental Planning Policy (Western Sydney Employment Area) 2009; any Natural Resources Sensitive Land under Penrith Local Environmental Plan 2010; and any land zoned either Zone E1 National Parks and Nature Reserves, Zone E2

Environmental Conservation, Zone W1 Natural Waterways or Zone W2 Recreational Waterways under Penrith Local Environmental Plan 2010.

RURAL HOUSING CODE

(The Rural Housing Code only applies if the land is within Zones RU1, RU2, RU3, RU4, RU6 or R5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

- The land is affected by environmentally sensitive land identified by an environmental planning instrument. If the land is within the relevant zones complying development under the Rural Housing Code **may not** be carried out on any part of the land identified by an environmental planning instrument as being environmentally sensitive land. Complying development **may** be carried out on any part of the land that is not identified by an environmental planning instrument as being environmentally sensitive land. For the purposes of this section "environmentally sensitive land" means any land that is identified in Schedule 3 of Sydney Regional Environmental Plan No. 9 - Extractive Industry (No. 2); any land defined as "environmentally sensitive areas" in Sydney Regional Environmental Plan No 20 - Hawkesbury-Nepean River (No 2 - 1997); any land zoned Zone E2 Environmental Conservation under State Environmental Planning Policy (Western Sydney Employment Area) 2009; any Natural Resources Sensitive Land under Penrith Local Environmental Plan 2010; and any land zoned either Zone E1 National Parks and Nature Reserves, Zone E2 Environmental Conservation, Zone W1 Natural Waterways or Zone W2 Recreational Waterways under Penrith Local Environmental Plan 2010.

HOUSING ALTERATIONS CODE

Complying development under the Housing Alterations Code **may** be carried out on the land.

GENERAL DEVELOPMENT CODE

Complying development under the General Development Code **may** be carried out on the land.

COMMERCIAL AND INDUSTRIAL ALTERATIONS CODE

Complying development under the Commercial and Industrial Alterations Code **may** be carried out on the land.

SUBDIVISIONS CODE

Complying development under the Subdivisions Code **may** be carried out on the land.

DEMOLITION CODE

Complying development under the Demolition Code **may** be carried out on the land.

COMMERCIAL AND INDUSTRIAL (NEW BUILDINGS AND ADDITIONS) CODE

(The Commercial and Industrial (New Buildings and Additions) Code only applies if the land is within Zones B1, B2, B3, B4, B5, B6, B7, B8, IN1, IN2, IN3, IN4 or SP3 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

- The land is affected by environmentally sensitive land identified by an environmental planning instrument. If the land is within the relevant zones complying development under the Commercial and Industrial (New Buildings and Additions) Code **may not** be carried out on any part of the land identified by an environmental planning instrument as being environmentally sensitive land. Complying development **may** be carried out on any part of the land that is not identified by an environmental planning instrument as being environmentally sensitive land. For the purposes of this section "environmentally sensitive land" means any land that is identified in Schedule 3 of Sydney Regional Environmental Plan No. 9 - Extractive Industry (No. 2); any land defined as "environmentally sensitive areas" in Sydney Regional Environmental Plan No 20 - Hawkesbury-Nepean River (No 2 - 1997); any land zoned Zone E2 Environmental Conservation under State Environmental Planning Policy (Western Sydney Employment Area) 2009; any Natural Resources Sensitive Land under Penrith Local Environmental Plan 2010; and any land zoned either Zone E1 National Parks and Nature Reserves, Zone E2 Environmental Conservation, Zone W1 Natural Waterways or Zone W2 Recreational Waterways under Penrith Local Environmental Plan 2010.

FIRE SAFETY CODE

Complying development under the Fire Safety Code **may** be carried out on the land.

(NOTE: (1) Council has relied on Planning and Infrastructure Circulars and Fact Sheets in the preparation of this information. Applicants should seek their own legal advice in relation to this matter with particular reference to State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.
(2) Penrith Local Environmental Plan 2010 (if it applies to the land) contains additional complying development not specified in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.)

4 COASTAL PROTECTION

The land is not affected by the operation of sections 38 or 39 of the Coastal Protection Act 1979, to the extent that council has been so notified by the Department of Public Works.

5 MINE SUBSIDENCE

The land is not proclaimed to be a mine subsidence district within the meaning of section 15 of the Mine Subsidence Compensation Act 1961.

6 ROAD WIDENING AND ROAD REALIGNMENT

The land is not affected by any road widening or road realignment under:
(a) Division 2 of Part 3 of the Roads Act 1993, or
(b) an environmental planning instrument, or
(c) a resolution of council.

7 COUNCIL AND OTHER PUBLIC AUTHORITY POLICIES ON HAZARD RISK RESTRICTIONS

(a) Council Policies
The land is affected by the Asbestos Policy adopted by Council.

The land is not affected by any other policy adopted by the council that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

(b) Other Public Authority Policies
The Bush Fire Co-ordinating Committee has adopted a Bush Fire Risk Management Plan that covers the local government area of Penrith City Council, and includes public, private and Commonwealth lands.
The land is not affected by a policy 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, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

7A FLOOD RELATED DEVELOPMENT CONTROLS INFORMATION

(1) Development on the 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) (if such uses are permissible on the land) is subject to flood related development controls.

(2) Development on the land or part of the land for industrial or commercial purposes (if such uses are permissible on the land) is subject to flood related development controls.
Development on the land or part of the land for purposes other than industrial or commercial, or for purposes other than those referred to in (1) above, will be considered on a merits based approach and flood related development controls may apply.

Note: The land is subject to Penrith Development Control Plan 2014 Section C3.5 Flood Planning. On application and payment of the prescribed fee Council may be able to provide in writing a range of advice in regard to the extent of flooding affecting the property.

8 LAND RESERVED FOR ACQUISITION

No 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.

9 CONTRIBUTIONS PLANS

The Cultural Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith.

The Penrith City Local Open Space Development Contributions Plan 2007 applies anywhere residential development is permitted within the City of Penrith, excluding industrial areas and the release areas identified in Appendix B of the Plan (Penrith Lakes, Cranebrook, Sydney Regional Environmental Plan No. 30 - St Marys, Waterside, Thornton, the WELL Precinct, Glenmore Park and Erskine Park). See
<http://www.penrithcity.nsw.gov.au/uploadedFiles/Content/Website/Our_Services/Planning_and_Development/Planning__Zoning_Information/Local_Planning_Documents/LocalOpenSpaceDCP(1).pdf>

The Penrith City District Open Space Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith, with the exclusion of industrial lands and the Penrith Lakes development site.

9A BIODIVERSITY CERTIFIED LAND

(Information is provided in this section only if the land is biodiversity certified land (within the meaning of Part 7AA of the *Threatened Species Conservation Act 1995*).)

10 BIOBANKING AGREEMENTS

(Information is provided in this section only if Council has been notified by the Director-General of the Department of Environment, Climate Change and Water that the land is land to which a biobanking agreement under Part 7A of the *Threatened Species Conservation Act 1995* relates.)

11 BUSH FIRE PRONE LAND

All of the land is identified as bush fire prone land according to Council records. Guidance as to restrictions that may be placed on the land as a result of the land being bush fire prone can be obtained by contacting Council. Such advice would be subject to further requirements of the NSW Rural Fire Services.

12 PROPERTY VEGETATION PLANS

(Information is provided in this section only if Council has been notified that the land is land to which a property vegetation plan under the Native Vegetation Act 2003 applies.)

13 ORDERS UNDER TREES (DISPUTES BETWEEN NEIGHBOURS) ACT 2006

(Information is provided in this section only if Council has been notified that an order has been made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land.)

14 DIRECTIONS UNDER PART 3A

(Information is provided in this section only 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.)

15 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS AFFECTING SENIORS HOUSING

(Information is provided in this section only if:

(a) there is a current site compatibility certificate (seniors housing), of which the council is aware, issued under State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 in respect of proposed development on the land; and/or

(b) any terms of a kind referred to in clause 18(2) of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.)

16 SITE COMPATIBILITY CERTIFICATES FOR INFRASTRUCTURE

(Information is provided in this section only if there is a valid site compatibility certificate (infrastructure), of which council is aware, in respect of proposed development on the land.)

17 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR AFFORDABLE RENTAL HOUSING

(Information is provided in this section only if:

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

(b) any terms of a kind referred to in clause 17(1) or 37(1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 have been imposed as a condition of consent to a development application in respect of the land.)

18 PAPER SUBDIVISION INFORMATION

(Information is provided in this section only if a development plan adopted by a relevant authority applies to the land or is proposed to be subject to a consent ballot, or a subdivision order applies to the land.)

19 SITE VERIFICATION CERTIFICATES

(Information is provided in this section only if there is a current site verification certificate, of which council is aware, in respect of the land.)

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) (Information is provided in this section only if, as at the date of this certificate, the land (or part of the land) is significantly contaminated land within the meaning of the Contaminated Land Management Act 1997.)

(b) (Information is provided in this section only if, as at the date of this certificate, the land is subject to a management order within the meaning of the Contaminated Land Management Act 1997.)

(c) (Information is provided in this section only if, as at the date of this certificate, the land is the subject of an approved voluntary management proposal within the meaning of the Contaminated Land Management Act 1997.)

(d) (Information is provided in this section only if, at the date of this certificate, the land subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997.)

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(e) (Information is provided in this section only if the land is the subject of a site audit statement within the meaning of the Contaminated Land Management Act 1997 – a copy of which has been provided to Council.)

Note: Section 149(5) information for this property may contain additional information regarding contamination issues.

Note: The Environmental Planning and Assessment Amendment Act 1997 commenced operation on the 1 July 1998. As a consequence of this Act the information contained in this certificate needs to be read in conjunction with the provisions of the Environmental Planning and Assessment (Amendment) Regulation 1998, Environmental Planning and Assessment (Further Amendment) Regulation 1998 and Environmental Planning and Assessment (Savings and Transitional) Regulation 1998 and Environmental Planning and Assessment Regulation 2000.

Information is provided only to the extent that Council has been notified by relevant government departments.

149(5) Certificate
This Certificate is directed to the following relevant matters affecting the land

When information pursuant to section 149(5) is requested the Council is under no obligation to furnish any of the information supplied herein pursuant to that section. Council draws your attention to section 149(6) which states that a council shall not incur any liability in respect of any advice provided in good faith pursuant to sub-section (5). The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this certificate.

Note:

- Council's 149(5) information does not include development consent or easement information. Details of development consents may be obtained by making enquiries with Council's Development Services Department pursuant to section 12 of the Local Government Act 1993 or (for development applications lodged after January 2007) by viewing the Online Services area at www.penrithcity.nsw.gov.au . Details of any easements may be obtained from a Title Search at Land and Property Information New South Wales.
- This certificate does not contain information relating to Complying Development Certificates.
- This certificate may not provide full details of development rights over the land.
-

* Threatened Species Conservation Act 1995

When considering any development application Council must have regard to the Threatened Species Conservation Act 1995. Please note that this legislation may have application to any land throughout the city. Interested persons should make their own enquiries in regard to the impact that this legislation could have on this land.

* Agricultural Activities Within Rural Areas

This property is located in a rural area and there may be certain agricultural activities occurring that some people may find offensive (for example noise, dust and odours). This should be considered if you purchase the subject property or build a dwelling thereon.
If you do purchase the subject property or build a dwelling, the potential impact that your activities (for example pets, inadequate fencing, drainage, litter and poor weed control) might have on the agricultural activities in the area should also be considered.

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

* Broader Western Sydney Employment Area (WSEA) Draft Structure Plan

The land is affected by the Broader Western Sydney Employment Area (WSEA) draft Structure Plan. The draft Structure Plan outlines a broad framework for the area including the location of future employment land and centres, a road network, potential freight and transport corridors and staging scenarios. Contact the Department of Planning and Environment for details.

* Scenic and Landscape Values

The land is identified as "Land with Scenic and Landscape Values" on the Penrith Local Environmental Plan 2010 Scenic and Landscape Values Map. See Clause 7.5 of Penrith Local Environmental Plan 2010 and Chapter C1 Site Planning and Design of Penrith Development Control Plan 2014.

* Preservation of Trees and Vegetation

See Clauses 5.9 and 5.9AA of Penrith Local Environmental Plan 2010 and Chapter C2 of Penrith Development Control Plan 2014 for specific controls relating to the preservation of trees and vegetation.

* Dual Occupancy and Secondary Dwellings Controls

See Clause 7.10 of Penrith Local Environmental Plan 2010 for specific controls relating to dual occupancy and secondary dwellings in Zones RU1, RU2, RU4, E3 and E4.

* Development Control Plan General Information

Penrith Development Control Plan 2014 which applies to the land, sets out requirements for a range of issues that apply across the Penrith Local Government Area, including:

- Site Planning and Design Principles
- Vegetation Management
- Water Management
- Land Management
- Waste Management
- Landscape Design
- Culture and Heritage
- Public Domain
- Advertising and Signage
- Transport, Access and Parking
- Subdivision
- Noise and Vibration, and
- Infrastructure and Services.

The Development Control Plan also specifies requirements relating to various types of land uses including:

- Rural Land Uses
- Residential Development
- Commercial and Retail Development, and
- Industrial Development

as well as for a number of specific activities, including child care centres; health consulting rooms; educational establishments; parent friendly amenities; places of public worship; vehicle repair stations; cemeteries, crematoria and funeral homes; extractive industries; and telecommunication facilities.

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The Development Control Plan also details requirements relating to key precincts within the Penrith Local Government Area, including:

- Caddens
- Claremont Meadows Stage 2
- Cranebrook
- Emu Heights
- Emu Plains
- Erskine Business Park
- Glenmore Park
- Kingswood
- Mulgoa Valley
- Orchard Hills
- Penrith
- Penrith Health and Education Precinct
- Riverlink Precinct
- St Clair,
- St Marys / St Marys North, and
- Sydney Science Park.

Penrith Development Control Plan 2014 may be accessed at https://www.penrithcity.nsw.gov.au/Building-and-Development/Planning-and-Zoning/Planning-Controls/Development-Control-Plans/

* Western Sydney Airport

The Australian Government announced on 15 April 2014 that Badgerys Creek will be the site for a new airport for Western Sydney. The Government released a draft Airport Plan and a draft Environmental Impact Statement (EIS) on 19 October 2015. On 15 September 2016, the Government announced the finalisation of the EIS, which has been presented to the Minister for the Environment and Energy for consideration. Enquiries regarding the airport should be made with the Department of Infrastructure and Regional Development. (Website: http://westernsydneyairport.gov.au)

Alan Stoneham
General Manager

PER



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PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

Property No: 402335
Your Reference: PCC LOT 22
Contact No:

Issue Date: 15 March 2017
Certificate No: 17/01230

Issued to: Nicola Wells/JBSG
50 Margaret Street
SYDNEY NSW 2000

PRECINCT 2010

DESCRIPTION OF LAND

County: CUMBERLAND **Parish: MELVILLE**

Location: 757-769 Mamre Road KEMPS CREEK NSW 2178
Land Description: Lot 22 DP 258414

- PART 1 PRESCRIBED MATTERS –

In accordance with the provisions of Section 149(2) of the Act the following information is furnished in respect of the abovementioned land:

1 *NAMES OF RELEVANT PLANNING INSTRUMENTS AND DCPs*

1(1) The name of each environmental planning instrument that applies to the carrying out of development on the land:

Penrith Local Environmental Plan 2010, published 22nd September 2010, as amended, applies to the land.

Sydney Regional Environmental Plan No.9 - Extractive Industry (No.2), gazetted 15 September 1995, as amended, applies to the local government area of Penrith.

Sydney Regional Environmental Plan No. 20 - Hawkesbury-Nepean River (No. 2 - 1997), gazetted 7 November 1997, as amended, applies to the local government area of Penrith (except land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies).

The following State environmental planning policies apply to the land (subject to the exclusions noted below):
State Environmental Planning Policy No.1 - Development Standards. (Note: This policy does not apply to the land to which Penrith Local Environmental Plan 2010 or State Environmental Planning Policy (Western Sydney Employment Area) 2009 apply.)
State Environmental Planning Policy No.19 - Bushland in Urban Areas. (Note: This policy does not apply to certain land referred to in the National Parks and Wildlife Act 1974 and the Forestry Act 1916.)
State Environmental Planning Policy No.21 - Caravan Parks.
State Environmental Planning Policy No.30 - Intensive Agriculture.

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PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

State Environmental Planning Policy No.32 - Urban Consolidation (Redevelopment of Urban Land). (Note: This policy does not apply to land identified as coastal protection, environmental protection, escarpment, floodway, natural hazard, non-urban, rural, rural residential, water catchment or wetland.)
State Environmental Planning Policy No.33 - Hazardous and Offensive Development.
State Environmental Planning Policy No.50 - Canal Estate Development. (Note: This policy does not apply to the land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies.
State Environmental Planning Policy No.55 - Remediation of Land.
State Environmental Planning Policy No.62 - Sustainable Aquaculture.
State Environmental Planning Policy No.64 - Advertising and Signage.
State Environmental Planning Policy No.65 - Design Quality of Residential Apartment Development.
State Environmental Planning Policy No.70 - Affordable Housing (Revised Schemes).
State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (Note: This policy applies to land within New South Wales that is land zoned primarily for urban purposes or land that adjoins land zoned primarily for urban purposes, but only as detailed in clause 4 of the policy.)
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004.
State Environmental Planning Policy (Major Development) 2005.
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.
State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007.
State Environmental Planning Policy (Infrastructure) 2007.
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.
State Environmental Planning Policy (Affordable Rental Housing) 2009.
State Environmental Planning Policy (State and Regional Development) 2011.

State Environmental Planning Policy (Western Sydney Employment Area) 2009 applies to the land.

1(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 consultation or on public exhibition under the Act:
(Information is provided in this section only if a proposed environmental planning instrument that is or has been the subject of community consultation or on public exhibition under the Act will apply to the carrying out of development on the land.)

Draft State Environmental Planning Policy (Infrastructure) Amendment (Shooting Ranges) 2013 applies to the land.
Draft State Environmental Planning Policy (Education Establishments and Child Care Facilities) 2017 applies to the land.
State Environmental Planning Policy (Infrastructure) Amendment (Review) 2016 applies to the land

1(3) The name of each development control plan that applies to the carrying out of development on the land:

Penrith Development Control Plan 2014 applies to the land.

2 *ZONING AND LAND USE UNDER RELEVANT LEPs*

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

2(a)-(d) the identity of the zone; the purposes that may be carried out without development consent; the purposes that may not be carried out except with development consent; and the purposes that are prohibited within the zone. Any zone(s) applying to the land is/are listed below and/or in annexures.

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PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

(Note: If no zoning appears in this section see section 1(1) for zoning and land use details (under the Sydney Regional Environmental Plan or State Environmental Planning Policy that zones this property).)

Zone E2 Environmental Conservation

(Penrith Local Environmental Plan 2010)

1 Objectives of zone

- To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.
- To prevent development that could destroy, damage or otherwise have an adverse effect on those values.
- To protect, manage, restore and enhance the ecology, hydrology and scenic values of riparian corridors and waterways, wetlands, groundwater resources, biodiversity corridors, areas of remnant indigenous vegetation and dependent ecosystems.
- To allow for low impact passive recreational and ancillary land uses that are consistent with the retention of the natural ecological significance.

2 Permitted without consent

Nil

3 Permitted with consent

Environment facilities; Environmental protection works; Flood mitigation works; Recreation areas; Roads

4 Prohibited

Business premises; Hotel or motel accommodation; Industries; Multi dwelling housing; Recreation facilities (major); Residential flat buildings; Restricted premises; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3

Zone RU2 Rural Landscape

(Penrith Local Environmental Plan 2010)

1 Objectives of zone

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To maintain the rural landscape character of the land.
- To provide for a range of compatible land uses, including extensive agriculture.
- To minimise conflict between land uses within the zone and land uses within adjoining zones.
- To preserve and improve natural resources through appropriate land management practices.
- To ensure development is compatible with the environmental capabilities of the land and does not unreasonably increase the demand for public services or public facilities.

2 Permitted without consent

Extensive agriculture; Home occupations

3 Permitted with consent

Agricultural produce industries; Agriculture; Animal boarding or training establishments; Building identification signs; Business identification signs; Cellar door premises; Cemeteries; Community facilities; Crematoria; Dual occupancies; Dwelling houses; Environmental facilities; Environmental protection works; Farm buildings; Flood mitigation works; Forestry; Funeral homes; Helipads; Home-based child care; Home businesses; Home industries; Information and education facilities; Places of public worship; Public administration buildings; Recreation areas; Recreation facilities (outdoor); Roads; Roadside stalls; Rural supplies; Schools; Secondary dwellings; Stock and sale yards; Tourist and visitor accommodation; Veterinary hospitals

4 Prohibited

Hotel or motel accommodation; Serviced apartments; Any other development not specified in item 2 or 3

Zone SP2 Infrastructure - Classified Road
(Penrith Local Environmental Plan 2010)

1 Objectives of zone

- To provide for infrastructure and related uses.
- To prevent development that is not compatible with or that may detract from the provision of infrastructure.

2 Permitted without consent

Nil

3 Permitted with consent

The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose; Environmental protection works; Flood mitigation works; Roads

4 Prohibited

Any development not specified in item 2 or 3

Flood planning

All or part of the subject land is identified in Penrith Local Environmental Plan 2010 (PLEP 2010) Clause 7.2 Flood Planning. Development consent is required for any development on land to which Clause 7.2 of PLEP 2010 applies.

Rural subdivision

Under the terms of Clause 4.2 of Penrith Local Environmental Plan 2010 land in Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU4 Primary Production Small Lots or Zone RU6 Transition may, with development consent, be subdivided for the purpose of primary production to create a lot of a size that is less than the minimum size shown on the Penrith Local Environmental Plan 2010 Lot Size Map in relation to that land. Such a lot cannot be created if an existing dwelling would, as a result of the subdivision, be situated on the lot; and a dwelling cannot be erected on such a lot.

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PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

Residential development and subdivision prohibited in certain rural, residential and environment protection zones

Under the terms of Clause 4.2A of Penrith Local Environmental Plan 2010 (PLEP 2010) on land within Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU4 Primary Production Small Lots, Zone RU5 Village, Zone R5 Large Lot Residential, Zone E3 Environmental Management or Zone E4 Environmental Living development consent must not be granted for the erection of a dwelling house on a lot resulting from the closure of part or all of a road, whether before or after the commencement of this Plan. This requirement does not apply to a lot created by the consolidation of a lot resulting from a road closure with an adjoining lot that did not result from a road closure.

Additional information relating to Penrith Local Environmental Plan 2010

Note 1: Under the terms of Clause 2.4 of Penrith Local Environmental Plan 2010 development may be carried out on unzoned land only with development consent.

Note 2: Under the terms of Clause 2.6 of Penrith Local Environmental Plan 2010 land may be subdivided but only with development consent, except for the exclusions detailed in the clause.

Note 3: Under the terms of Clause 2.7 of Penrith Local Environmental Plan 2010 the demolition of a building or work may be carried out only with development consent.

Note 4: A temporary use may be permitted with development consent subject to the requirements of Clause 2.8 of Penrith Local Environmental Plan 2010.

Note 5: Under the terms of Clause 4.1A of Penrith Local Environmental Plan 2010, despite any other provision of this plan, development consent must not be granted for dual occupancy on an internal lot in Zone R2 Low Density Residential.

Note 6: Under the terms of Clause 5.1 of Penrith Local Environmental Plan 2010 development on land acquired by an authority of the State under the owner-initiated acquisition provisions may, before it is used for the purpose for which it is reserved, be carried out, with development consent, for any purpose.

Note 7: Under the terms of Clause 5.3 of Penrith Local Environmental Plan 2010 development consent may be granted to development of certain land for any purpose that may be carried out in an adjoining zone.

Note 8: Under the terms of Clause 5.9 of Penrith Local Environmental Plan 2010 trees or other vegetation subject to relevant sections of Penrith Development Control Plan 2014 must not be ringbarked, cut down, topped, lopped, removed, injured or wilfully destroyed without the authority conferred by a development consent or a Council permit.

Note 9: Under the terms of Clause 5.9AA of Penrith Local Environmental Plan 2010 (PLEP 2010) any tree or other vegetation that is not of a species or kind prescribed for the purposes of Clause 5.9 of PLEP 2010 by Penrith Development Control Plan 2014 may be ringbarked, cut down, topped, lopped, removed, injured or destroyed without development consent.

Note 10: Clause 5.10 of Penrith Local Environmental Plan 2010 details when development consent is required/not required in relation to heritage conservation.

Note 11: Under the terms of Clause 5.11 of Penrith Local Environmental Plan 2010 bush fire hazard reduction work authorised by the *Rural Fires Act 1997* may be carried out on any land without development consent.

Note 12: Under the terms of Clause 7.1 of Penrith Local Environmental Plan 2010 (PLEP 2010) development consent is required for earthworks unless the work is exempt development under PLEP 2010 or another applicable environmental planning instrument, or the work is ancillary to other development for which development consent has been given.

Note 13: Sex services premises and restricted premises may only be permitted subject to the requirements of Clause 7.23 of Penrith Local Environmental Plan 2010.

2(e) 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:

(Information is provided in this section only if 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.)

2(f) whether the land includes or comprises critical habitat:

(Information is provided in this section only if the land includes or comprises critical habitat.)

2(g) whether the land is in a conservation area (however described):

(Information is provided in this section only if the land is in a conservation area (however described).)

2(h) whether an item of environmental heritage (however described) is situated on the land:

(Information is provided in this section only if an item of environmental heritage (however described) is situated on the land.)

2A ZONING AND LAND USE UNDER STATE ENVIRONMENTAL PLANNING POLICY (SYDNEY REGION GROWTH CENTRES) 2006

(Information is provided in this section only if the land is within any zone under State Environmental Planning Policy (Sydney Region Growth Centres) 2006.)

3 COMPLYING DEVELOPMENT

GENERAL HOUSING CODE

(The General Housing Code only applies if the land is within Zones R1, R2, R3, R4 or RU5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

- The land is affected by a reservation for a public purpose. If the land is within the relevant zones complying development under the General Housing Code **may not** be carried out on any part of the land that is reserved for a public purpose by an environmental planning instrument. Complying development **may** be carried out on any part of the land that is not reserved for a public purpose by an environmental planning instrument. For the purposes of this section "public purpose" means any land that is zoned either Zone E1, RE1, SP1 or SP2 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument, or land that is subject to acquisition.

- The land is affected by environmentally sensitive land identified by an environmental planning instrument. If the land is within the relevant zones complying development under the General Housing Code **may not** be carried out on any part of the land identified by an environmental planning instrument as being environmentally sensitive land. Complying development **may** be carried out on any part of the land that is not identified by an environmental planning instrument as being environmentally sensitive land. For the purposes of this section "environmentally sensitive land" means any land that is identified in Schedule 3 of Sydney Regional Environmental Plan No. 9 - Extractive Industry (No. 2); any land defined as "environmentally sensitive areas" in Sydney Regional Environmental Plan No 20 - Hawkesbury-Nepean River (No 2 - 1997); any land zoned Zone E2 Environmental Conservation under State Environmental Planning Policy (Western Sydney Employment Area) 2009; any Natural Resources Sensitive Land under Penrith Local Environmental Plan 2010; and any land zoned either Zone E1 National Parks and Nature Reserves, Zone E2 Environmental Conservation, Zone W1 Natural Waterways or Zone W2 Recreational Waterways under Penrith Local Environmental Plan 2010.

RURAL HOUSING CODE

(The Rural Housing Code only applies if the land is within Zones RU1, RU2, RU3, RU4, RU6 or R5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

- The land is affected by a reservation for a public purpose. If the land is within the relevant zones complying development under the Rural Housing Code **may not** be carried out on any part of the land that is reserved for a public purpose by an environmental planning instrument. Complying development **may** be carried out on any part of the land that is not reserved for a public purpose by an environmental planning instrument. For the purposes of this section "public purpose" means any land that is zoned either Zone E1, RE1, SP1 or SP2 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument, or land that is subject to acquisition.

- The land is affected by environmentally sensitive land identified by an environmental planning instrument. If the land is within the relevant zones complying development under the Rural Housing Code **may not** be carried out on any part of the land identified by an environmental planning instrument as being environmentally sensitive land. Complying development **may** be carried out on any part of the land that is not identified by an environmental planning instrument as being environmentally sensitive land. For the purposes of this section

"environmentally sensitive land" means any land that is identified in Schedule 3 of Sydney Regional Environmental Plan No. 9 - Extractive Industry (No. 2); any land defined as "environmentally sensitive areas" in Sydney Regional Environmental Plan No 20 - Hawkesbury-Nepean River (No 2 - 1997); any land zoned Zone E2 Environmental Conservation under State Environmental Planning Policy (Western Sydney Employment Area) 2009; any Natural Resources Sensitive Land under Penrith Local Environmental Plan 2010; and any land zoned either Zone E1 National Parks and Nature Reserves, Zone E2 Environmental Conservation, Zone W1 Natural Waterways or Zone W2 Recreational Waterways under Penrith Local Environmental Plan 2010.

HOUSING ALTERATIONS CODE

Complying development under the Housing Alterations Code **may** be carried out on the land.

GENERAL DEVELOPMENT CODE

Complying development under the General Development Code **may** be carried out on the land.

COMMERCIAL AND INDUSTRIAL ALTERATIONS CODE

Complying development under the Commercial and Industrial Alterations Code **may** be carried out on the land.

SUBDIVISIONS CODE

Complying development under the Subdivisions Code **may** be carried out on the land.

DEMOLITION CODE

Complying development under the Demolition Code **may** be carried out on the land.

COMMERCIAL AND INDUSTRIAL (NEW BUILDINGS AND ADDITIONS) CODE
(The Commercial and Industrial (New Buildings and Additions) Code only applies if the land is within Zones B1, B2, B3, B4, B5, B6, B7, B8, IN1, IN2, IN3, IN4 or SP3 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

- The land is affected by a reservation for a public purpose. If the land is within the relevant zones complying development under the Commercial and Industrial (New Buildings and Additions) Code **may not** be carried out on any part of the land that is reserved for a public purpose by an environmental planning instrument. Complying development **may** be carried out on any part of the land that is not reserved for a public purpose by an environmental planning instrument. For the purposes of this section "public purpose" means any land that is zoned either Zone E1, RE1, SP1 or SP2 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument, or land that is subject to acquisition.

- The land is affected by environmentally sensitive land identified by an environmental planning instrument. If the land is within the relevant zones complying development under the Commercial and Industrial (New Buildings and Additions) Code **may not** be carried out on any part of the land identified by an environmental planning instrument as being

environmentally sensitive land. Complying development **may** be carried out on any part of the land that is not identified by an environmental planning instrument as being environmentally sensitive land. For the purposes of this section "environmentally sensitive land" means any land that is identified in Schedule 3 of Sydney Regional Environmental Plan No. 9 - Extractive Industry (No. 2); any land defined as "environmentally sensitive areas" in Sydney Regional Environmental Plan No 20 - Hawkesbury-Nepean River (No 2 - 1997); any land zoned Zone E2 Environmental Conservation under State Environmental Planning Policy (Western Sydney Employment Area) 2009; any Natural Resources Sensitive Land under Penrith Local Environmental Plan 2010; and any land zoned either Zone E1 National Parks and Nature Reserves, Zone E2 Environmental Conservation, Zone W1 Natural Waterways or Zone W2 Recreational Waterways under Penrith Local Environmental Plan 2010.

FIRE SAFETY CODE

Complying development under the Fire Safety Code **may** be carried out on the land.

(NOTE: (1) Council has relied on Planning and Infrastructure Circulars and Fact Sheets in the preparation of this information. Applicants should seek their own legal advice in relation to this matter with particular reference to State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

(2) Penrith Local Environmental Plan 2010 (if it applies to the land) contains additional complying development not specified in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.)

4 COASTAL PROTECTION

The land is not affected by the operation of sections 38 or 39 of the Coastal Protection Act 1979, to the extent that council has been so notified by the Department of Public Works.

5 MINE SUBSIDENCE

The land is not proclaimed to be a mine subsidence district within the meaning of section 15 of the Mine Subsidence Compensation Act 1961.

6 ROAD WIDENING AND ROAD REALIGNMENT

The land is affected by road widening or road realignment under
(a) Division 2 of Part 3 of the Roads Act 1993, or
(b) an environmental planning instrument, or
(c) a resolution of Council.
Note: Additional advice may be available in section 149(5) information.

7 COUNCIL AND OTHER PUBLIC AUTHORITY POLICIES ON HAZARD RISK RESTRICTIONS

(a) Council Policies
The land is affected by the Asbestos Policy adopted by Council.
The land is not affected by any other policy adopted by the council that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding and the item Noted below).
Note: Council has adopted by resolution a policy on contaminated land which may restrict the

development of the land. This policy, Chapter C4 of Penrith Development Control Plan 2014, is implemented when zoning or land use changes are proposed on lands which have previously been used for certain purposes. Consideration of council's adopted policy and the application of provisions under relevant State legislation is warranted.

(b) Other Public Authority Policies

The Bush Fire Co-ordinating Committee has adopted a Bush Fire Risk Management Plan that covers the local government area of Penrith City Council, and includes public, private and Commonwealth lands.

The land is not affected by a policy 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, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

7A FLOOD RELATED DEVELOPMENT CONTROLS INFORMATION

(1) Development on the 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) (if such uses are permissible on the land) is subject to flood related development controls.

(2) Development on the land or part of the land for industrial or commercial purposes (if such uses are permissible on the land) is subject to flood related development controls.

Development on the land or part of the land for purposes other than industrial or commercial, or for purposes other than those referred to in (1) above, will be considered on a merits based approach and flood related development controls may apply.

Note: The land is subject to Penrith Development Control Plan 2014 Section C3.5 Flood Planning. On application and payment of the prescribed fee Council may be able to provide in writing a range of advice in regard to the extent of flooding affecting the property.

8 LAND RESERVED FOR ACQUISITION

An environmental planning instrument or a proposed environmental planning instrument referred to in clause 1 of this certificate makes provision in relation to the acquisition of the land by a public authority, as referred to in section 27 of the Act.

9 CONTRIBUTIONS PLANS

The Cultural Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith.

The Penrith City Local Open Space Development Contributions Plan 2007 applies anywhere residential development is permitted within the City of Penrith, excluding industrial areas and the release areas identified in Appendix B of the Plan (Penrith Lakes, Cranebrook, Sydney Regional Environmental Plan No. 30 - St Marys, Waterside, Thornton, the WELL Precinct, Glenmore Park and Erskine Park). See <http://www.penrithcity.nsw.gov.au/uploadedFiles/Content/Website/Our_Services/Planning_and_Development/Planning__Zoning_Information/Local_Planning_Documents/LocalOpenSpaceDCP(1).pdf>

The Penrith City District Open Space Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith, with the exclusion of industrial lands and the Penrith Lakes development site.

9A BIODIVERSITY CERTIFIED LAND

(Information is provided in this section only if the land is biodiversity certified land (within the meaning of Part 7AA of the *Threatened Species Conservation Act 1995*).)

10 BIOBANKING AGREEMENTS

(Information is provided in this section only if Council has been notified by the Director-General of the Department of Environment, Climate Change and Water that the land is land to which a biobanking agreement under Part 7A of the *Threatened Species Conservation Act 1995* relates.)

11 BUSH FIRE PRONE LAND

Some of the land is identified as bush fire prone land according to Council records. Guidance as to restrictions that may be placed on the land as a result of the land being bush fire prone can be obtained by contacting Council. Such advice would be subject to further requirements of the NSW Rural Fire Services.

12 PROPERTY VEGETATION PLANS

(Information is provided in this section only if Council has been notified that the land is land to which a property vegetation plan under the Native Vegetation Act 2003 applies.)

13 ORDERS UNDER TREES (DISPUTES BETWEEN NEIGHBOURS) ACT 2006

(Information is provided in this section only if Council has been notified that an order has been made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land.)

14 DIRECTIONS UNDER PART 3A

(Information is provided in this section only 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.)

15 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS AFFECTING SENIORS HOUSING

(Information is provided in this section only if:

(a) there is a current site compatibility certificate (seniors housing), of which the council is aware, issued under State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 in respect of proposed development on the land; and/or

(b) any terms of a kind referred to in clause 18(2) of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.)

16 SITE COMPATIBILITY CERTIFICATES FOR INFRASTRUCTURE

(Information is provided in this section only if there is a valid site compatibility certificate (infrastructure), of which council is aware, in respect of proposed development on the land.)

17 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR AFFORDABLE RENTAL HOUSING

(Information is provided in this section only if:

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

(b) any terms of a kind referred to in clause 17(1) or 37(1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 have been imposed as a condition of consent to a development application in respect of the land.)

18 PAPER SUBDIVISION INFORMATION

(Information is provided in this section only if a development plan adopted by a relevant authority applies to the land or is proposed to be subject to a consent ballot, or a subdivision order applies to the land.)

19 SITE VERIFICATION CERTIFICATES

(Information is provided in this section only if there is a current site verification certificate, of which council is aware, in respect of the land.)

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) (Information is provided in this section only if, as at the date of this certificate, the land (or part of the land) is significantly contaminated land within the meaning of the Contaminated Land Management Act 1997.)

(b) (Information is provided in this section only if, as at the date of this certificate, the land is subject to a management order within the meaning of the Contaminated Land Management Act 1997.)

(c) (Information is provided in this section only if, as at the date of this certificate, the land is the subject of an approved voluntary management proposal within the meaning of the Contaminated Land Management Act 1997.)

(d) (Information is provided in this section only if, at the date of this certificate, the land subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997.)

PENRITH CITY COUNCIL

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(e) (Information is provided in this section only if the land is the subject of a site audit statement within the meaning of the Contaminated Land Management Act 1997 - a copy of which has been provided to Council.)

Note: Section 149(5) information for this property may contain additional information regarding contamination issues.

Note: The Environmental Planning and Assessment Amendment Act 1997 commenced operation on the 1 July 1998. As a consequence of this Act the information contained in this certificate needs to be read in conjunction with the provisions of the Environmental Planning and Assessment (Amendment) Regulation 1998, Environmental Planning and Assessment (Further Amendment) Regulation 1998 and Environmental Planning and Assessment (Savings and Transitional) Regulation 1998 and Environmental Planning and Assessment Regulation 2000.

Information is provided only to the extent that Council has been notified by relevant government departments.

149(5) Certificate
This Certificate is directed to the following relevant matters affecting the land

When information pursuant to section 149(5) is requested the Council is under no obligation to furnish any of the information supplied herein pursuant to that section. Council draws your attention to section 149(6) which states that a council shall not incur any liability in respect of any advice provided in good faith pursuant to sub-section (5). The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this certificate.

Note:

- Council's 149(5) information does not include development consent or easement information. Details of development consents may be obtained by making enquiries with Council's Development Services Department pursuant to section 12 of the Local Government Act 1993 or (for development applications lodged after January 2007) by viewing the Online Services area at www.penrithcity.nsw.gov.au . Details of any easements may be obtained from a Title Search at Land and Property Information New South Wales.
- This certificate does not contain information relating to Complying Development Certificates.
- This certificate may not provide full details of development rights over the land.
-

* Threatened Species Conservation Act 1995

When considering any development application Council must have regard to the Threatened Species Conservation Act 1995. Please note that this legislation may have application to any land throughout the city. Interested persons should make their own enquiries in regard to the impact that this legislation could have on this land.

* Agricultural Activities Within Rural Areas

This property is located in a rural area and there may be certain agricultural activities occurring that some people may find offensive (for example noise, dust and odours). This should be considered if you purchase the subject property or build a dwelling thereon.
If you do purchase the subject property or build a dwelling, the potential impact that your activities (for example pets, inadequate fencing, drainage, litter and poor weed control) might have on the agricultural activities in the area should also be considered.

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* Broader Western Sydney Employment Area (WSEA) Draft Structure Plan

The land is affected by the Broader Western Sydney Employment Area (WSEA) draft Structure Plan. The draft Structure Plan outlines a broad framework for the area including the location of future employment land and centres, a road network, potential freight and transport corridors and staging scenarios. Contact the Department of Planning and Environment for details.

* Scenic and Landscape Values

The land is identified as "Land with Scenic and Landscape Values" on the Penrith Local Environmental Plan 2010 Scenic and Landscape Values Map. See Clause 7.5 of Penrith Local Environmental Plan 2010 and Chapter C1 Site Planning and Design of Penrith Development Control Plan 2014.

* Preservation of Trees and Vegetation

See Clauses 5.9 and 5.9AA of Penrith Local Environmental Plan 2010 and Chapter C2 of Penrith Development Control Plan 2014 for specific controls relating to the preservation of trees and vegetation.

* Dual Occupancy and Secondary Dwellings Controls

See Clause 7.10 of Penrith Local Environmental Plan 2010 for specific controls relating to dual occupancy and secondary dwellings in Zones RU1, RU2, RU4, E3 and E4.

* Development Control Plan General Information

Penrith Development Control Plan 2014 which applies to the land, sets out requirements for a range of issues that apply across the Penrith Local Government Area, including:

- Site Planning and Design Principles
- Vegetation Management
- Water Management
- Land Management
- Waste Management
- Landscape Design
- Culture and Heritage
- Public Domain
- Advertising and Signage
- Transport, Access and Parking
- Subdivision
- Noise and Vibration, and
- Infrastructure and Services.

The Development Control Plan also specifies requirements relating to various types of land uses including:

- Rural Land Uses
- Residential Development
- Commercial and Retail Development, and
- Industrial Development

as well as for a number of specific activities, including child care centres; health consulting rooms; educational establishments; parent friendly amenities; places of public worship; vehicle repair stations; cemeteries, crematoria and funeral homes; extractive industries; and telecommunication facilities.

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The Development Control Plan also details requirements relating to key precincts within the Penrith Local Government Area, including:

- Caddens
- Claremont Meadows Stage 2
- Cranebrook
- Emu Heights
- Emu Plains
- Erskine Business Park
- Glenmore Park
- Kingswood
- Mulgoa Valley
- Orchard Hills
- Penrith
- Penrith Health and Education Precinct
- Riverlink Precinct
- St Clair,
- St Marys / St Marys North, and
- Sydney Science Park.

Penrith Development Control Plan 2014 may be accessed at https://www.penrithcity.nsw.gov.au/Building-and-Development/Planning-and-Zoning/Planning-Controls/Development-Control-Plans/

* Council has information that fill material of unknown source and quantity has been placed on this property. This material has been placed on the property without the approval of Council. (File 402335)

* Western Sydney Airport
The Australian Government announced on 15 April 2014 that Badgerys Creek will be the site for a new airport for Western Sydney. The Government released a draft Airport Plan and a draft Environmental Impact Statement (EIS) on 19 October 2015. On 15 September 2016, the Government announced the finalisation of the EIS, which has been presented to the Minister for the Environment and Energy for consideration. Enquiries regarding the airport should be made with the Department of Infrastructure and Regional Development. (Website: http://westernsydneyairport.gov.au)

Alan Stoneham
General Manager

PER



Appendix E Registered Groundwater Bores

help · contact · customise

State Overview
State Overview

Rivers and Streams
favourites · search · download sites · find a site
Real Time Data - Rivers And Streams

Daily River Reports
Daily River Reports

Dams
favourites · search · download sites · find a site
Real Time Data - Major Dams

Groundwater (Telemetered data)
favourites · search · download sites · find a site
Real Time Data - Bores

All Groundwater Site details
search · download sites · find a site
All Groundwater Map
North Coast Region
Hunter Region
Greater Sydney Region
Hawkesbury River Basin
Georges River Basin
Wollongong Basin
South Coast Region
Northwest Region
Central West Region
Southwest Region
Far West Region
Great Artesian Basin
Coal Basins

Meteorology
favourites · search · download sites · find a site
Real Time Data - Weather Stations

Hunter Integrated Telemetry System
Hunter Integrated Telemetry System

bandwidth high low

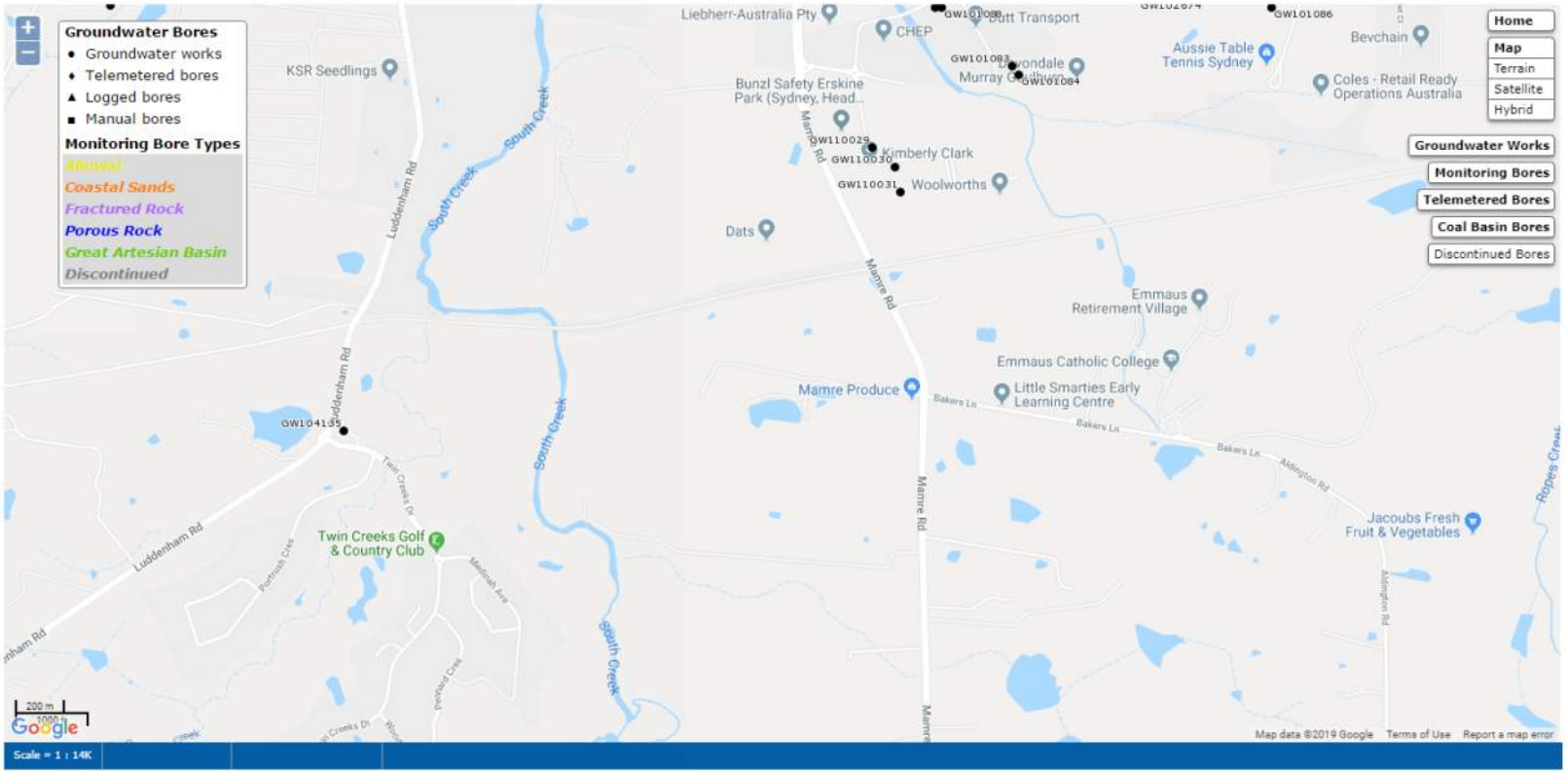
glossary and metadata

Hawkesbury River Basin

bookmark this page

All data times are Eastern Standard Time

Map



NSW Office of Water
Work Summary

GW110031

Licence: 10BL162687 **Licence Status:** ACTIVE

Authorised Purpose (s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status:
Construct.Method: Hand Auger
Owner Type: Private

Commenced Date:
Completion Date: 01/02/2004
Final Depth: 0.75 m
Drilled Depth: 0.75 m

Contractor Name:
Driller: Unkown Unknown
Assistant Driller:

Property: AUSTRALIA PIPES 576 MAMRE RD ERSKINE PARK 2164
Standing Water Level:
GWMA:
GW Zone:
Salinity:
Yield:

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.32	3//1124329
Licensed:			

Region: 10 - Sydney South Coast
CMA Map:
River Basin: - Unknown
Area/District:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6255058.0
Easting: 294555.0
Latitude: 33°49'29.1"S
Longitude: 150°46'48.3"E

GS Map: -
MGA Zone: 0
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	0.75	65			Hand Auger
1	1	Casing	Lining	0.00	0.75				

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.20	0.20	TOPSOIL	Topsoil	
0.20	0.40	0.20	SILTY CLAY	Silty Clay	
0.40	0.75	0.35	HEAVY CLAY	Haematite	

Remarks

***** End of GW110031 *****

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

NSW Office of Water
Work Summary

GW110030

Licence: 10BL162687 **Licence Status:** ACTIVE

Authorised Purpose (s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status:
Construct.Method: Hand Auger
Owner Type: Private

Commenced Date:
Completion Date: 01/02/2004
Final Depth: 0.75 m
Drilled Depth: 0.75 m

Contractor Name:
Driller: Unkown Unknown
Assistant Driller:

Property: AUSTRALIA PIPES 576 MAMRE RD ERSKINE PARK 2164
Standing Water Level:
GWMA:
GW Zone:
Salinity:
Yield:

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.32	3//1124329
Licensed:			

Region: 10 - Sydney South Coast
CMA Map:
River Basin: - Unknown
Area/District:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6255146.0
Easting: 294533.0
Latitude: 33°49'26.3"S
Longitude: 150°46'47.5"E

GS Map: -
MGA Zone: 0
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	0.75	65			Hand Auger
1	1	Casing	Lining	0.00	0.75				

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.20	0.20	TOPSOIL	Topsoil	
0.20	0.60	0.40	SILTY CLAY	Silty Clay	
0.60	0.75	0.15	HEAVY CLAY	Haematite	

Remarks

***** End of GW110030 *****

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

NSW Office of Water
Work Summary

GW110029

Licence: 10BL162687 **Licence Status:** ACTIVE

Authorised Purpose(s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status:
Construct.Method: Hand Auger
Owner Type: Private

Commenced Date:
Completion Date: 01/02/2004
Final Depth: 0.75 m
Drilled Depth: 0.75 m

Contractor Name:
Driller: Unkown Unknown
Assistant Driller:

Property: AUSTRALIA PIPES 576 MAMRE RD ERSKINE PARK 2164
Standing Water Level:
GWMA:
GW Zone:
Salinity:
Yield:

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBE	CUMBE.32	141//843899
Licensed:			

Region: 10 - Sydney South Coast
CMA Map:
River Basin: - Unknown
Area/District:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6255217.0
Easting: 294449.0
Latitude: 33°49'23.9"S
Longitude: 150°46'44.3"E

GS Map: -
MGA Zone: 0
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	0.75	65			Hand Dug
1	1	Casing	Lining	0.00	0.75				

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.20	0.20	TOPSOIL	Topsoil	
0.20	0.50	0.30	SILTY CLAY	Silty Clay	
0.50	0.75	0.25	HEAVY CLAY	Haematite	

Remarks

***** End of GW110029 *****

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

Appendix F Historical Land Title Records

The registered proprietors for all land parcels are detailed below.

657-703 Mamre Road (Lot 34 DP1118173):

- 1900 to 1947 – Robert Stewart Hamilton (Farmer)
- 1947 to 1947 – Joseph Alexander MacKay (Company Manager)
- 1947 to 1949 – Franklin Richard Rooke (Grazier)
- 1949 to 1955 – Cecil Auckland Adams (Manufacturers Representative)
- 1955 to 1955 – Leon Ivan Combet (Manager)
- 1955 to 1983 – Keith Edgar Mobbs (Labourer)
- 1983 to Date – Lantoo Pty Limited

707-711 Mamre Road (Lot X DP421633):

- 1913 to 1918 – John Hamilton (Farmer)
- 1918 to 1918 – William Wentworth Victor Hamilton (Timber Carter), Sidney Tozer Peryman (Managing Law Clerk)
- 1918 to 1918 – John Andrew Hamilton (Cattle Dealer)
- 1918 to 1919 – John Dennis Hurley (Horse Dealer
- 1919 to 1927 – Griffiths Brothers Proprietary Limited (now Griffiths Brothers Limited)
- 1927 to 1929 – Joseph Cole (Farmer)
- 1929 to 1935 – Charles William Phillips (Carrier)
- 1935 to 1938 – Henry Baker Dowle (Farmer)
- 1938 to 1940 – Alfred Ernest Wright (Farmer)
- 1940 to 1941 – Charles William Phillips (Carrier)
- 1941 to 1944 – George White (Farmer), Margaret Jane McQuitty Haynes (Widow)
- 1944 to 1946 – Allan Douglas Jurd (Dairyman)
- 1946 to 1948 – Cyril Clifford Jurd (Farmer)
- 1948 to 1950 – George Wentworth Lawson (Farmer)
- 1950 to 1960 – Gordon Charles Ward (Dairy Farmer)
- 1960 to 1960 – John J. Innes Pty Limited
- 1960 to 1972 – George Abraham Cecil Perrim (Grazier)
- 1972 to 1974 – Erskine Park Property Investments Pty Limited
- 1974 to 1978 – Royma Homes & Constructions Pty Limited
- 1978 to 1997 – Henry George Allan (Electricians Assistant), Muriel Violet Allan (Married Woman)
- 1997 to 2011 – Muriel Violet Allan (Widow) & her deceased estate
- 2011 to Date – Raymond James Allan

707A Mamre Road (Lot 1 DP1018318):

- 1913 to 1918 – John Hamilton (Farmer)
- 1918 to 1918 – William Wentworth Victor Hamilton (Timber Carter), Sidney Tozer Peryman (Managing Law Clerk)
- 1918 to 1918 – John Andrew Hamilton (Cattle Dealer)
- 1918 to 1919 – John Dennis Hurley (Horse Dealer)
- 1919 to 1927 – Griffiths Brothers Proprietary Limited (now Griffiths Brothers Limited)
- 1927 to 1929 – Joseph Cole (Farmer)
- 1929 to 1935 – Charles William Phillips (Carrier)
- 1935 to 1938 – Henry Baker Dowle (Farmer)
- 1938 to 1940 – Alfred Ernest Wright (Farmer)
- 1940 to 1941 – Charles William Phillips (Carrier)
- 1941 to 1944 – George White (Farmer), Margaret Jane McQuitty Haynes (Widow)
- 1944 to 1946 – Allan Douglas Jurd (Dairyman)
- 1946 to 1948 – Cyril Clifford Jurd (Farmer)
- 1948 to 1950 – George Wentworth Lawson (Farmer)
- 1950 to 1963 – Gordon Charles Ward (Dairy Farmer)
- 1963 to 1988 – Ex-Servicemen's Country Club Holdings Pty Limited
- 1988 to 2000 – Signature Developments Pty Limited
- 2000 to 2002 – Camelot Grange Pty Limited
- 2002 to 2007 – Amer Fiaz Ahmed, Atef Ahmed Fiazuddin
- 2007 to Date – Ahmed Fiazuddin, Rubina Fareen

713-755 Mamre Road (Lot Y DP421633)

- 1913 to 1918 – John Hamilton (Farmer)
- 1918 to 1918 – William Wentworth Victor Hamilton (Timber Carter), Sidney Tozer Peryman (Managing Law Clerk)
- 1918 to 1918 – John Andrew Hamilton (Cattle Dealer)
- 1918 to 1919 – John Dennis Hurley (Horse Dealer)
- 1919 to 1927 – Griffiths Brothers Proprietary Limited (now Griffiths Brothers Limited)
- 1927 to 1929 – Joseph Cole (Farmer)
- 1929 to 1935 – Charles William Phillips (Carrier)
- 1935 to 1938 – Henry Baker Dowle (Farmer)
- 1938 to 1940 – Alfred Ernest Wright (Farmer)
- 1940 to 1941 – Charles William Phillips (Carrier)
- 1941 to 1944 – George White (Farmer), Margaret Jane McQuitty Haynes (Widow)

- 1944 to 1946 – Allan Douglas Jurd (Dairyman)
- 1946 to 1948 – Cyril Clifford Jurd (Farmer)
- 1948 to 1950 – George Wentworth Lawson (Farmer)
- 1950 to 1960 – Gordon Charles Ward (Dairy Farmer)
- 1960 to 1960 – John J. Innes Pty Limited
- 1960 to 1978 – Valentine Nathew Peter Banovich (Mechanic), Maria Banovich (Married Woman), Jakov Banovich (Gentleman)
- 1978 to 1993 – Valentine Nathew Peter Banovich (Mechanic), Maria Banovich (Married Woman), Kenneth George Bray Robilliard (Solicitor)
- 1993 to 2002 – Valentine Nathew Peter Banovich. Maria Banovich, Boris George Satara
- 2002 to 2002 – Valentine Mathew Peter Banovich, Ann Kathleen Maras, Ivy Skrabanich, Maria Banovich, Boris George Satara
- 2002 to 2003 – Valentine Mathew Peter Banovich, Ann Kathleen Maras, Ivy Skrabanich
- 2003 to Date – Javad Sadeghzadeh, then Jeff Sadeg, now Javad J Sadeg

757-769 Mamre Road (Lot 22 DO258414)

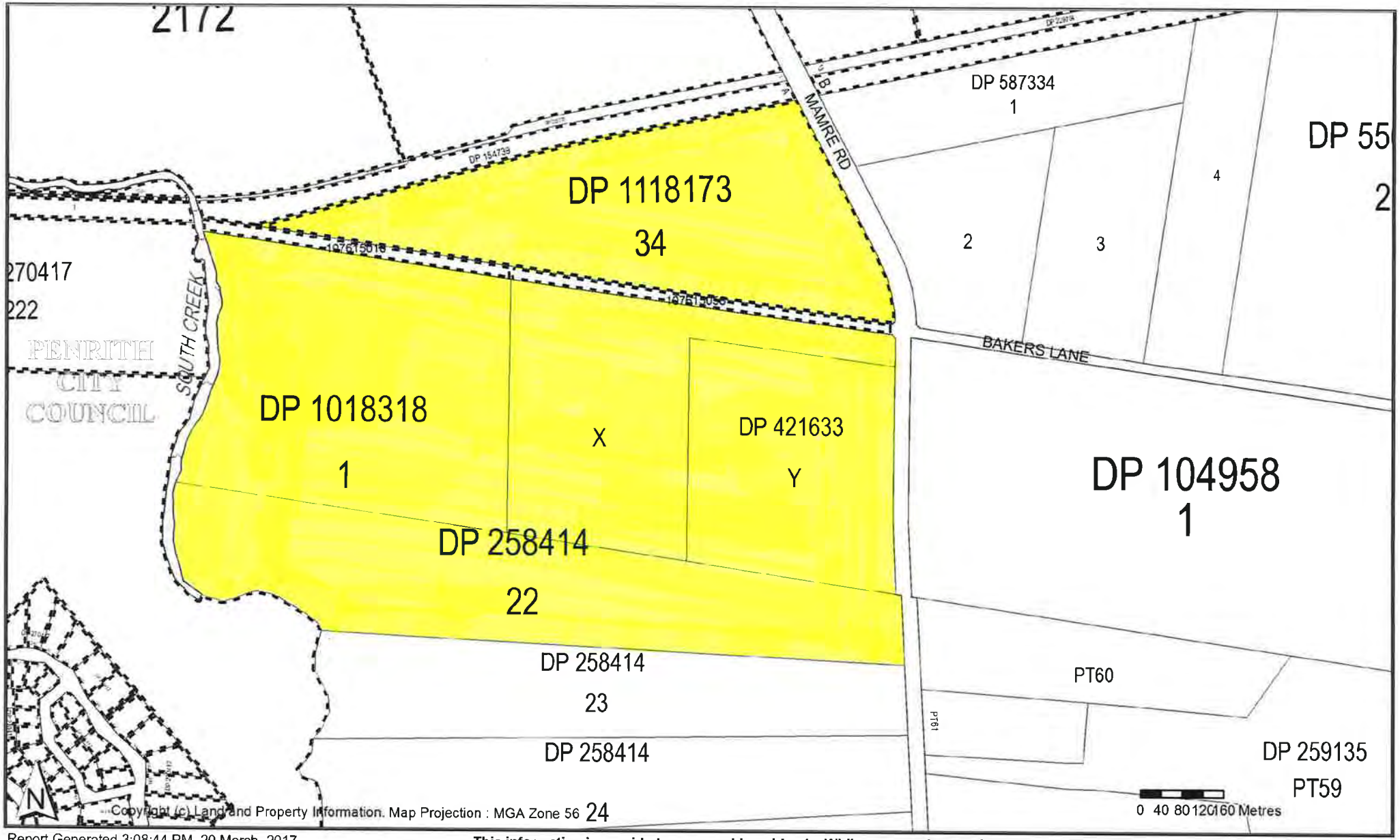
- 1916 to 1916 – Donald Bruce MacIntyre (Grazier)
- 1916 to 1934 – Henry Horton (Grazier) & his deceased estate
- 1934 to 1945 – Greenfields Limited
- 1945 to 1954 – Joseph Henry Bawn (Butcher)
- 1954 to 1968 – J.H. Bawn Pty Limited
- 1968 to 1980 – Number Two Fleurs Pty Limited
- 1980 to 1987 – Salvatore De Francesco (Farmer), Anita De Francesco (Married Woman), Vincenzo De Francesco (Farmer), Josephine De Francesco (Married Woman)
- 1987 to Date – Vincenzo De Francesco (Farmer), Josephine De Francesco (Married Woman)

Land & Property Information

Cadastral Records Enquiry Report

Requested Parcel : Lot X DP 421633 **Identified Parcel** : Lot X DP 421633

Locality : KEMPS CREEK **LGA** : PENRITH **Parish** : MELVILLE **County** : CUMBERLAND



Copyright (c) Land and Property Information. Map Projection : MGA Zone 56

Report Generated 3:08:44 PM, 20 March, 2017

Copyright © Land and Property Information ABN: 84 104 377 806

This information is provided as a searching aid only. While every endeavour is made to ensure the current cadastral pattern is accurately reflected, the Registrar General cannot guarantee the information provided. For all ACTIVITY PRIOR to SEPT 2002 you must refer to the RGs Charting and Reference Maps.


Identify Tool
Suburb
LGA
Lot (5)
Address (5)
Imagery
Lot
lot section plan
Y Null DP421633
X Null DP421633
1 Null DP1018318
22 Null DP258414
34 Null DP1118173
NSW

Req:R387021 /Doc:DP 0154739 P /Rev:22-Feb-1996 /Sts:OK.OK /Pgs:ALL /Prt:20-Mar-2017 11:02 /Seq:1 of 3
Ref:Kemps Creek /Src:M

Municipality of St Marys

PLA

SUBDIVISION APPROVED BY ST. MARYS MUNICIPAL COUNCIL ON 18/9/1939. COVERED BY COUNCIL CLERK'S CERTIFICATE No. 10 21st SEPTEMBER, 1939.

.....A W Sutton.....TOWN CLERK.

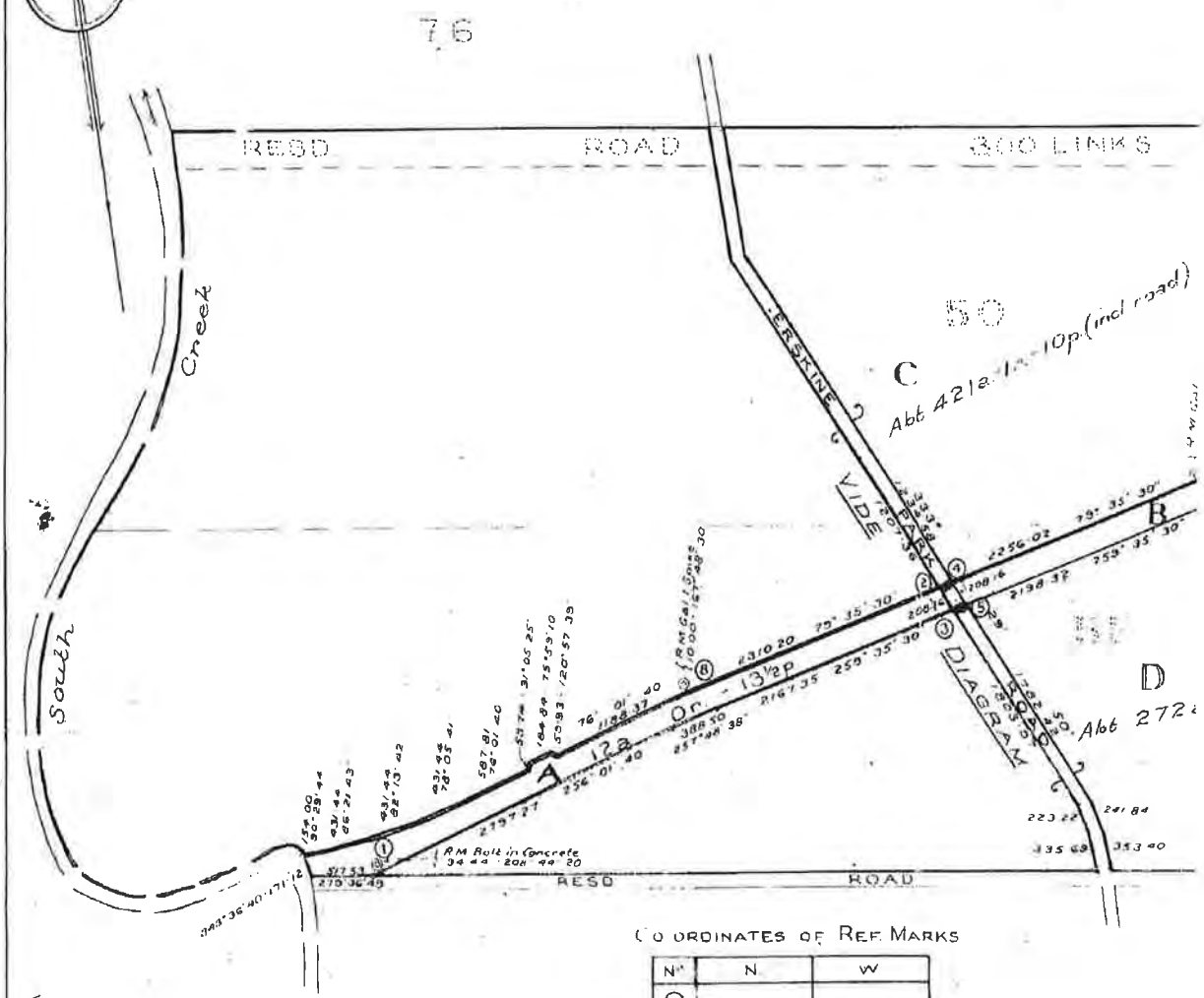
ST. MARYS 21st SEPTEMBER, 1939.

of part of the land within

Parish of Melville

Scale 10 chains

Submitted to the Council of the Municipality



CO ORDINATES OF REF MARKS

No	N	W
①	16269 8	201039 6
②	17522 6	195543 6
③	17336 3	195856 7
④	17540 6	195851 9
⑤	17354 3	195759 0
⑥	17958 4	193632 5
⑦	18873 5	188650 8
⑧	17114 6	198226 3

D.P. 154739 (E)

Date of Survey December 1938

Trig Azimuth

184904

Req:R387021 /Doc:DP 0154739 P /Rev:22-Feb-1996 /Sts:OK.OK /Pgs:ALL /Prt:20-Mar-2017 11:02 /Seq:2 of 3
Ref:Kemps Creek /Src:M

(E) FP 154739 C865578

6

A

AN —

, Regd N°482 Book 679

County of Cumberland

ity of St Marys for approval of subdivision.

M... p... S... (O. S.)
4739

WIDE

RM Gall Spike
187°41'56" 1052

212.05
188°59'44

RM Gall Spike
1000 169°35'27

79° 35' 24

3065.39

14a - 2r - 16½p

259° 35' 24

1430.64 feet

100 LINKS WIDE

72 acres (incl. road)

C ROAD C

79° 35' 30

A B

PARK 333'

D D

RESD RD

ERSKINE ST 100 LKS WIDE

— DIAGRAM —

Connections along Erskine Park Road

— Not to Scale —

I certify that the survey represented in this plan has been made by me and is correct

Kenneth Leo Brown

Registered Surveyor

Req:R387021 /Doc:DP 0154739 P /Rev:22-Feb-1996 /Sts:OK.OK /Pgs:ALL /Prt:20-Mar-2017 11:02 /Seq:3 of 3
Ref:Kemps Creek /Src:M

CONVERSION TABLE ADDED IN DEPARTMENT OF LANDS

DP 154739

LINKS	METRES
0.63	0.131
1	0.201
1.2	0.241
1.4	0.282
1.6	0.322
2	0.402
2.3	0.463
2.36	0.475
2.5	0.503
4	0.805
6.4	1.287
10	2.012
10.52	2.116
16.4	3.299
58.92	11.853
59.74	12.018
59.93	12.056
61.34	12.340
94.44	18.998
100	20.117
100.2	20.137
100.26	20.169
100.64	20.246
154	30.980
171.12	34.424
184.84	37.184
184.99	37.214
208.16	41.875
212.03	42.658
223.22	44.905
241.84	48.650
300	60.350
335.69	67.530
353.4	71.093
388.5	78.134
431.44	86.792
517.33	104.110
533.9	107.806
587.81	118.249
824.6	165.883
993.59	200.281
1111.4	223.578
1188.37	239.062
1207.36	242.882
1234.58	248.358
1430.64	287.799
1726.69	347.355
1782.42	358.566
1803.97	362.901
2167.35	436.001
2198.32	442.232
2256.02	453.839
2310.2	464.738
2797.27	562.721
3065.39	616.658
4991.18	1004.066
5454	1097.170
16269.8	3272.963
17114.6	3442.910
17336.3	3487.509
17354.3	3491.130
17522.6	3524.986
17540.6	3528.607
17958.4	3612.635
18873.5	3796.744

AC	RO	P	HA
272	-	-	110.1
421	1	10	170.5

Req:R385552 /Doc:DP 0421633 P /Rev:30-Dec-1992 /Sts:OK.OK /Pgs:ALL /Prt:20-Mar-2017 09:18 /Seq:1 of 1
Ref:Kemps Creek /Src:M

AMENDMENTS AND/OR ADDITIONS NOTED ON PLAN IN REGISTRAR GENERAL'S OFFICE.

I, Barry Richard Davies, Registrar General for New South Wales, certify that this is a true copy of the document lodged with me and that it is a permanent record of a document so lodged this 15th day of May, 1960

CONVERSION TABLE ADDED IN DEPARTMENT OF LANDS

DP 421633

FEET	INCHES	METRES
-	2	0.051
1	-	0.305
1	6	0.457
1	7	0.483
2	-	0.610
2	6	0.762
3	-	0.914
3	8	1.118
5	1	1.549
20	-	6.096
28	8 3/4	8.757
29	11 3/4	9.138
34	8 3/8	10.576
35	10 3/4	10.941
38	1 5/8	11.624
53	1	16.180
55	-	16.764
55	10 3/4	17.037
66	-	20.117
66	5 1/2	20.257
80	5 3/4	24.530
154	1 3/8	46.974
154	8 5/8	47.159
180	-	54.864
283	5 7/8	86.408
443	9	135.255
510	9	155.677
648	2 1/4	197.568
667	6 1/2	203.467
828	6 1/8	252.530
838	3 1/4	255.504
939	6	286.360
1143	11 5/8	348.682
1304	5	397.586
1333	6	406.451
1401	4	427.126
1588	6	484.175

AC	RD	P	SQ M
1 -	30	3/4	4825

AC	RD	P	HA
42 -		2	17
47	2	12	19.425

H 612240 DP 421633

Plan form 8 (Offer transfer/easement) H 612240 No. 1271

Municipality of Shire of City of Penrith

PLAN

of subdivision of Part Portion 52 at St Mary's
Parish of Melville County of Cumberland

Scale 300 feet to an inch

33/60

SUBDIVISION JUNE 60

Survey by K.R. Borden June 1959

Part Por 52

X 42Ac. 2Rd. 12Per. (Excluding Rd)

Y 42Ac. 0Rd 2Per.

9.P.4 17335

RES. ROAD

LIVERPOOL Rd.

LIVERPOOL ROAD

DIAGRAM (not to scale)

M P S R.P. 121633

Note :- It is intended to hereby dedicate the Area of 1A OR 30¾P marked "x" to the Public as Roadway.

Approved by the Council and Certified in accordance with the Provisions of Section 327 of the Local Government Act, 1919.

Subdivision No.

Council Clerk

Datum line of Azimuth A-B

I, Leonard John Stapleton of Queen St St Mary's a surveyor registered under the Surveyors Act, 1929-1940, hereby certify that this survey represented in this plan is accurate and has been made * (1) by me (2) under my immediate supervision in accordance with the Survey Practice Regulations, 1933, and was completed on 1 21st June, 1960.

(Signature) L.J. Stapleton
Surveyor registered under the Surveyors Act, 1929

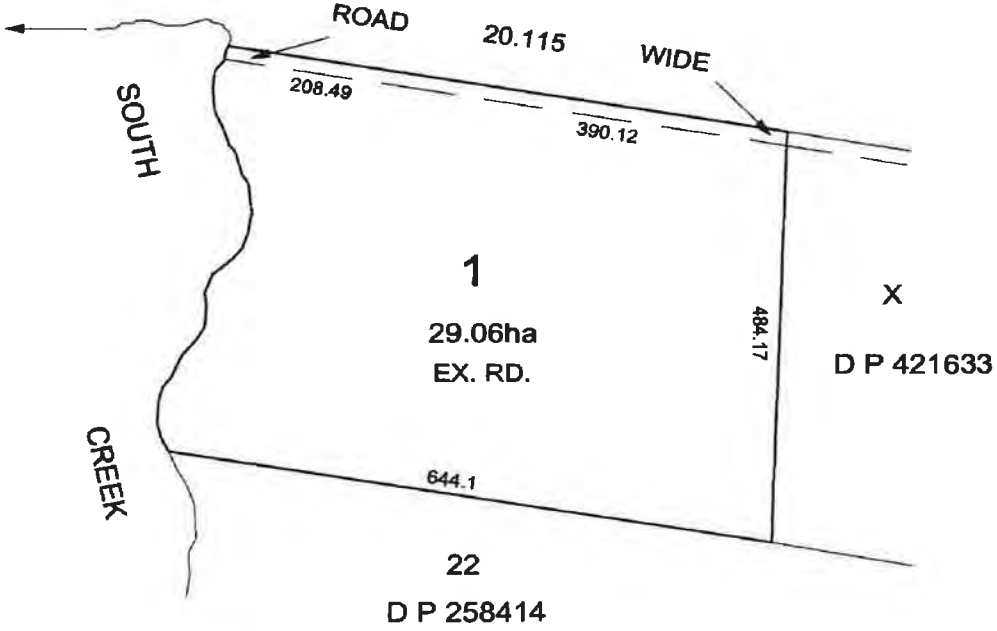
*State out either (1) or (2) †Insert date of Survey.

U 60/1869/50

This is the plan marked "1" referred to in Dated 22nd July 1960

1

Req:R386430 /Doc:DP 1018318 P /Rev:27-Sep-2000 /Sts:OK.OK /Pgs:ALL /Prt:20-Mar-2017 10:26 /Seq:1 of 1
Ref:Kemps Creek /Src:M



DP 1018318

Registered : 22.9.2000

Title System : TORRENS

Purpose : DEPARTMENTAL

Ref. Map : U7352-5# & U7352-8#

Last Plan : ————

PLAN OF PART OF POR.52 COMPRISED IN VOL.8444 FOL.193

Lengths are in metres. Reduction Ratio - NTS

LTO Ref. : DRD TC

L. G. A. : PENRITH

LOCALITY : ST MARYS

PARISH : MELVILLE

COUNTY : CUMBERLAND

LOT	PRIOR IDENTITY

Req:R357081 /Doc:DP 1118173 P /Rev:26-Sep-2007 /Sts:SC.OK /Pgs:ALL /Prt:14-Mar-2017 15:09 /Seq:1 of 1
Ref:Kemps Creek /Src:M

e-departmental

DP 1118173

Registered: 18.9.2007

Title System: OLD SYSTEM

Purpose: LIMITED FOLIO CREATION

Ref. Map: U7352-5, 6

Last Plan: DP154739

C.A. 103209

PLAN OF LAND COMPRISED IN

DEED BK. 3562 NO. 386

BEING PART LOT D IN DP154739

Lengths are in metres. Reduction Ratio - NTS

Sheet 1 of 1 sheets

L.G.A.: PENRITH

LOCALITY: KEMPS CREEK

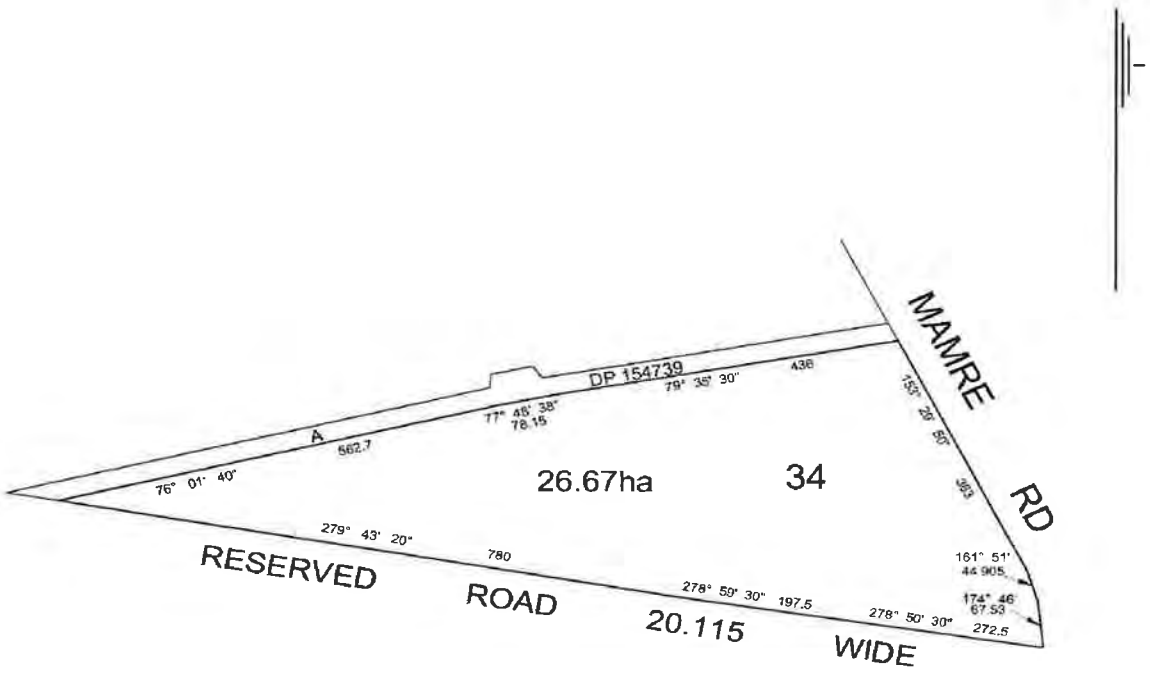
PARISH: MELVILLE

COUNTY: CUMBERLAND

THIS PLAN WAS PREPARED SOLELY TO IDENTIFY THE LAND IN THE ABOVE DEED AND THE BOUNDARIES HAVE NOT BEEN INVESTIGATED BY THE REGISTRAR GENERAL

THIS PLAN IS NOT A CURRENT PLAN IN TERMS OF S.7A CONVEYANCING ACT 1919.

LPI Ref : TCB9/50



InfoTrack
An Approved LPI NSW
Information Broker

Historical Title

Information Provided Through
John McLaren & Co (NSW)
Ph. 02 9231 4872 Fax. 02 9233 6557

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
14/3/2017 2:54PM

FOLIO: 34/1118173

First Title(s): OLD SYSTEM
Prior Title(s): BK 3562 NO 386

Recorded	Number	Type of Instrument	C.T. Issue
18/9/2007	DP1118173	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
18/9/2007	CA103209	CONVERSION ACTION	
15/1/2008	AD699878	DEPARTMENTAL DEALING	
8/2/2008	AD754816	DISCHARGE OF MORTGAGE	
8/2/2008	AD754911	DEPARTMENTAL DEALING	EDITION 1

*** END OF SEARCH ***

Kemps Creek PRINTED ON 14/3/2017

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Information Broker

Title Search

Information Provided Through
John McLaren & Co (NSW)
Ph. 02 9231 4872 Fax. 02 9233 6557

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 34/1118173

SEARCH DATE	TIME	EDITION NO	DATE
20/3/2017	9:11 AM	1	8/2/2008

LAND

LOT 34 IN DEPOSITED PLAN 1118173
AT KEMPS CREEK
LOCAL GOVERNMENT AREA PENRITH
PARISH OF MELVILLE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP1118173

FIRST SCHEDULE

LANTOO PTY. LIMITED (CA103209)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 QUALIFIED TITLE. CAUTION PURSUANT TO SECTION 28J OF THE REAL PROPERTY ACT, 1900. ENTERED 18.9.2007 BK3562 NO386
3 LIMITED TITLE. LIMITATION PURSUANT TO SECTION 28T(4) OF THE REAL PROPERTY ACT, 1900. THE BOUNDARIES OF THE LAND COMPRISED HEREIN HAVE NOT BEEN INVESTIGATED BY THE REGISTRAR GENERAL.

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Kemps Creek PRINTED ON 20/3/2017

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. 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.

InfoTrack
An Approved LPI NSW
Information Broker

Historical Title

Information Provided Through
John McLaren & Co (NSW)
Ph. 02 9231 4872 Fax. 02 9233 6557

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
14/3/2017 2:54PM

FOLIO: X/421633

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 8345 FOL 21

Recorded	Number	Type of Instrument	C.T. Issue
30/8/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
6/10/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
30/11/1989	Y727602	DISCHARGE OF MORTGAGE	EDITION 1
8/4/1991	Z574600	LEASE	EDITION 2
1/4/1997	2941004	NOTICE OF DEATH	EDITION 3
11/8/2011	AG426032	TRANSMISSION APPLICATION	EDITION 4

*** END OF SEARCH ***

Kemps Creek

PRINTED ON 14/3/2017

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Req:R385965 /Doc:DL AG426032 /Rev:15-Aug-2011 /Sts:NO.OK /Pgs:ALL /Prt:20-Mar-2017 09:53 /Seq:1 of 1
Ref:Kemps Creek /Src:M

Form: 03TA
Release: 3.1
www.lpma.nsw.gov.au

TRANSMISSION APPLICATION

New South Wales
Section 93 Real Property Act 1900

AG426032J

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 1795
Duty: $50.- Trans No: 6363683
Asst details:

(A) **TORRENS TITLE** Folio Identifier X/421633

(B) **REGISTERED DEALING**

Number	Torrens Title

(C) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODE
	CHURCH & GRACE LEVEL 3, RESERVE BANK BUILDING 65 MARTIN PLACE SYDNEY NSW 2000 TELEPHONE: 9233 1155 FAX: 9221 6771 Reference: 10986 ALLAN DX 114 SYDNEY	TA

(D) **DECEASED REGISTERED PROPRIETOR** MURIEL VIOLET ALLAN

(E) **APPLICANT** RAYMOND JAMES ALLAN

(F) I, the applicant, being entitled as devisee of the will of the deceased registered proprietor (who died on 6 April 2010) pursuant to probate (No. 2011/71390 & Court Order 2011/109872 dated 19 July 2011) granted on 15 June 2011 to Larraine May Costa (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 abovementioned land.

DATE 1st August 2011

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

Signature:

Signatory's name: Richard Afoa
Signatory's capacity: Applicant's solicitor

(H) **CONSENT OF EXECUTOR, ADMINISTRATOR OR TRUSTEE**

I, Larraine May Costa
executor of the will of the estate of the deceased registered proprietor, consent to this application.

Signature of witness:
Name of witness: MARGARET SEVE
Address of witness: 240 Elizington Rd Kemps Creek 2178

Signature of executor of the will: L. M. Costa

(I) *This section is to be completed where a notice of sale is required and the relevant data has been forwarded to LPMA through eNOS.*

The applicant, certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. Full name: Signature:

ALL HANDWRITING MUST BE IN BLOCK CAPITALS.

LAND AND PROPERTY MANAGEMENT AUTHORITY
Office use only—
Evidence sighted and returned:

1008

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Title Search

Information Provided Through
John McLaren & Co (NSW)
Ph. 02 9231 4872 Fax. 02 9233 6557

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: X/421633

SEARCH DATE	TIME	EDITION NO	DATE
20/3/2017	9:11 AM	4	11/8/2011

LAND

LOT X IN DEPOSITED PLAN 421633
LOCAL GOVERNMENT AREA PENRITH
PARISH OF MELVILLE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP421633

FIRST SCHEDULE

RAYMOND JAMES ALLAN (TA AG426032)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 H532088 COVENANT
3 LAND EXCLUDES THE ROAD(S) 20.115 METRES WIDE

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Kemps Creek PRINTED ON 20/3/2017

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Historical Title

Information Provided Through
John McLaren & Co (NSW)
Ph. 02 9231 4872 Fax. 02 9233 6557

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
14/3/2017 2:54PM

FOLIO: Y/421633

First Title(s): OLD SYSTEM
Prior Title(s): VOL 8372 FOLS 137-139

Recorded	Number	Type of Instrument	C.T. Issue
12/8/2002	8856789	DEPARTMENTAL DEALING	LOT RECORDED FOLIO NOT CREATED
15/11/2002	9128069	DEPARTMENTAL DEALING	FOLIO CREATED EDITION 1
11/3/2003	9440955	TRANSFER	EDITION 2
6/6/2003	9675060	MORTGAGE	EDITION 3
23/12/2004	AB183175	CHANGE OF NAME	EDITION 4
8/11/2007	AD547184	CHANGE OF NAME	EDITION 5

*** END OF SEARCH ***

Kemps Creek

PRINTED ON 14/3/2017

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Req:R386073 /Doc:DL 9440955 /Rev:12-Mar-2003 /Sts:NO.OK /Pgs:ALL /Prt:20-Mar-2017 10:01 /Seq:1 of 2
Ref:Kemps Creek /Src:M

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

TRANSFER

New South Wales
Real Property Act 1900

9440955B

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

STAMP DUTY

Office of State Revenue use only

NEW SOUTH WALES DUTY
04-02-2003 3001272133-001
SECTION 18(2)
DUTY $ *************2.00

(A) **TORRENS TITLE** FOLIO IDENTIFIER: Y/421633

(B) **LODGED BY**

Delivery Box	Name, Address or DX and Telephone	CODES
4363	Dominic David Stamfords Reference:	T TW (Sheriff)

(C) **TRANSFEROR** VALENTINE MATTHEW PETER BANOVICH, ANN KATHLEEN MARAS & IVY SKRABANICH

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 1,810,000.00 and as regards

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

(F) **SHARE TRANSFERRED** 100%

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** JAVAD SADEGHZADEH

(I) ~~TENANCY:~~

(J) **DATE**

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:

Name of witness:
Address of witness:

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

Signature of transferor:

SEE NEXT PAGE

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

Signature: M. P. Dominic

Signatory's name: M P DOMINIC
Signatory's capacity: transferee's solicitor

All handwriting must be in block capitals.

Land and Property Information NSW.

Execution by Transferors:

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

Signature of Witness:

.....

Name: Julie GUBERINA.

Address: 83 Elonora Rd
Elonora Heights.

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

Signature of Transferor:

.....

Valentine Matthew Peter Banovich

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

Signature of Witness:

.....

Name: Julie GUBERINA

Address: 83 Elonora Rd
Elonora Heights.

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

Signature of Transferor:

.....

Ann Kathleen Maras

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

Signature of Witness:

.....

Name: Julie GUBERINA

Address: 83 Elonora Rd
Elonora Heights.

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

Signature of Transferor:

.....

Ivy Skrabanich

Req:R386031 /Doc:DL AB183175 /Rev:05-Jan-2005 /Sts:NO.OK /Pgs:ALL /Prt:20-Mar-2017 09:57 /Seq:1 of 2
Ref:Kemps Creek /Src:M

Form: 10CN
Licence: 98M111
Edition: 0308

CHANGE OF NAM

New South Wales
Real Property Act 1900

AB183175K

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.

(A) **LAND**
Torrens Title: Y/421633 AND 4/22031

(B) **REGISTERED DEALING**
Number: | Torrens Title:

(C) **LODGED BY**
Delivery Box:
Name, Address or DX and Telephone:
JEFF, J. SADEG
P.O. Box NO: 698 LID COMBE 1825 N.S.W
Reference (optional):
CODE: CN

(D) **REGISTERED PROPRIETOR**
Whose name is to be changed; show the name as it currently appears on the Torrens Title
JAVAD SADEGHZADEH

(E) **NEW NAME**
Of the above registered proprietor in full
JEFF J SADEG

(F) The abovenamed registered proprietor of the land / registered dealing specified above applies to have her / his new name recorded in the Register in respect of that land / registered dealing.

(G) **STATUTORY DECLARATION BY THE APPLICANT ***

I *[new name]* JEFF J SADEG solemnly and sincerely declare that—

1. i. I am identical with the registered proprietor referred to above;
   ii. I am .....;
2. on ..... at .....
   in the State of ..... I married .....;
3. registered my change of name at births, deaths and marriage registration office NO: 20742/2004

I make this solemn declaration conscientiously believing the same to be true and by virtue of the Oaths Act 1900, and I certify this application to be correct for the purposes of the Real Property Act 1900.

Made and subscribed at LIDCOMBE in the state of N S W
on 22/12/04 in the presence of—

Signature of witness: .....
Signature of applicant: J Sadeg

Name of witness: THOMAS TARMO
Address of witness: 36 JOHN ST ROCK LIDCOMBE

Qualification of witness: ☐ Justice of the Peace ☑ Practising Solicitor ☐ Other *[specify]* .....

* As the Department of Lands may not be able to provide the services of a justice of the peace or other qualified witness, the statutory declaration should be signed and witnessed prior to lodgment of the form at Land and Property Information Division.

ALL HANDWRITING MUST BE IN BLOCK CAPITALS.

A set of instructions for completing this form is available from the Department of Lands, Land and Property Information Division.

Y/421633 Prod. 208X on 22/12 Rec C/N

Req:R386031 /Doc:DL AB183175 /Rev:05-Jan-2005 /Sts:NO.OK /Pgs:ALL /Prt:20-Mar-2017 09:57 /Seq:2 of 2
Ref:Kemps Creek /Src:M

Births, Deaths & Marriages

NEW SOUTH WALES

Births, Deaths and Marriages Registration Act 1995

CHANGE OF NAME CERTIFICATE

NAME REGISTERED	
Family Name	SADEG
Christian or Given Name(s)	Jeff J
Sex	Male
Date of Birth	12 October 1959
Place of Birth	Daragaz, IRAN
FORMER NAME	
Family Name Christian or Given Name(s)	SADEGHZADEH Javad
REGISTRATION DETAILS	
Number	20742/2004
Registering Authority	Greg Curry, Registrar
Date	22 October 2004
ENDORSEMENTS	
Not Any	

I certify that this is a true copy of the original document for use in NSW

This certificate confirms a lawful change of name only.
If verification of birth details is required, it should be obtained from other documentation.

Before accepting copies, sight unaltered original. The original has a colored background.

REGISTRY OF BIRTHS
DEATHS AND MARRIAGES

SYDNEY 25 Oct 2004

I hereby certify that this is a true copy of particulars recorded in a Register in the State of New South Wales, in the Commonwealth of Australia

Greg Curry

Registrar

2 of 2.

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Title Search

Information Provided Through
John McLaren & Co (NSW)
Ph. 02 9231 4872 Fax. 02 9233 6557

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: Y/421633

SEARCH DATE	TIME	EDITION NO	DATE
20/3/2017	9:11 AM	5	8/11/2007

LAND

LOT Y IN DEPOSITED PLAN 421633
AT KEMPS CREEK
LOCAL GOVERNMENT AREA PENRITH
PARISH OF MELVILLE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP421633

FIRST SCHEDULE

JAVAD J SADEG (CN AD547184)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 H532088 COVENANT
3 9675060 MORTGAGE TO ST. GEORGE BANK LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Kemps Creek PRINTED ON 20/3/2017

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Historical Title

Information Provided Through
John McLaren & Co (NSW)
Ph. 02 9231 4872 Fax. 02 9233 6557

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
14/3/2017 2:54PM

FOLIO: 1/1018318

First Title(s): OLD SYSTEM
Prior Title(s): VOL 8444 FOL 193

Recorded	Number	Type of Instrument	C.T. Issue
22/9/2000	DP1018318	DEPOSITED PLAN	LOT RECORDED FOLIO NOT CREATED
25/9/2000	7107085	DEPARTMENTAL DEALING	FOLIO CREATED CT NOT ISSUED
25/9/2000	7107195	CONVERTED TO AUTO CONSOL 8444-193	CONSOL CREATED CT NOT ISSUED
20/2/2002	8370549	EXCISED FROM AUTO CONSOL 8444-193	EDITION 1
18/3/2002	8437077	DISCHARGE OF MORTGAGE	
18/3/2002	8437078	TRANSFER	EDITION 2
19/2/2007	AC947072	TRANSFER	EDITION 3
14/3/2007	AC993914	MORTGAGE	EDITION 4
27/5/2008	AD981455	MORTGAGE	EDITION 5
18/8/2009	AE911004	RESTRICTION ON USE OF LAND BY/VESTED IN PRESCRIBED AUTHORITY	

*** END OF SEARCH ***

Kemps Creek PRINTED ON 14/3/2017

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Req:R386391 /Doc:DL 8437078 /Rev:19-Mar-2002 /Sts:NO.OK /Pgs:ALL /Prt:20-Mar-2017 10:23 /Seq:1 of 3
Ref:Kemps Creek /Src:M

Form: 07L
Release: 2
www.lpi.nsw.gov.au

TRANSFER

New South Wales
Real Property Act

tional

8437078V

PRIVACY NOTE: ~~this information is legally required~~

STAMP DUTY

Office of State Revenue use only

OFFICE OF STATE REVENUE (N.S.W. TREASURY)

CLIENT No. 5700332 STAMP No. 816
STAMP DUTY $2.00 SIGNATURE
TRANSACTION No. 0207101 DATE 13-2-02
ASSESSMENT DETAILS:

(A) **TORRENS TITLE** Lot 1 DP 1018318

(B) **LODGED BY**

Delivery Box	Name, Address or DX and Telephone	CODES
124E	LEGALINK PARALEGAL SUPPORT SERVICES LTO BOX 124E Reference: J-ALVE-542809	T TW (Sheriff)

(C) **TRANSFEROR** CAMELOT GRANGE PTY LIMITED ACN: 085 422 117

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 700,000.00 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):

OFFICE OF STATE REVENUE (N.S.W. TREASURY) 816 5700332 ALTERATION NOTED

(H) **TRANSFEREE** Amer Fiaz AHMED and Atef Ahmed FIAZUDDIN a minor born 18 May 1987
a minor born 28 June 1984

(I) **TENANCY:** Tenants in Common in Equal Shares

(J) **DATE** 14th February 2002

Certified correct for the purposes of the Real Property Act 1900 by the corporation named below the common seal of which was affixed pursuant to the authority specified and in the presence of the authorised person(s) whose signature(s) appear(s) below.

CAMELOT GRANGE PTY LTD ACN 085 422 117 The Common Seal of

Corporation:
Authority:

Signature of authorised person:
Name of authorised person: Egidio John Gobbo
Office held: Director

Signature of authorised person:
Name of authorised person: Vince Lombard
Office held: Secretary

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

Signature:

Signatory's name: Frank Alvaro
Signatory's capacity: transferee's solicitor

All handwriting must be in block capitals.

SOL CERT S29 x 2 herewith

Req:R386391 /Doc:DL 8437078 /Rev:19-Mar-2002 /Sts:NO.OK /Pgs:ALL /Prt:20-Mar-2017 10:23 /Seq:2 of 3
Ref:Kemps Creek /Src:M

F/m

SOLICITOR'S CERTIFICATE IN RESPECT OF A DISPOSITION TO A MINOR

S 29 Minors (Property + Contracts) Act 1970

I, LYNETTE JOY HUDSON , of 291-293 Macquarie Street Liverpool, Solicitor, certify as follows-

1. I am instructed and employed independently of Camelot Grange Pty Ltd

2. I have satisfied myself that

(a) Atef Ahmed Fiazuddin understands the true purport and effect of the disposition Sale of Lot 1 DP 1018318 Mamre Road Kemps Creek by Registered Proprietor Camelot Grange Pty Ltd

(b) Atef Ahmed Fiazuddin takes the disposition freely and voluntarily

(c) The consideration is not manifestly excessive.

Dated the 14th day of March 2002.

Solicitor

LYNETTE JOY HUDSON
Solicitor
291-293 MACQUARIE STREET
LIVERPOOL 2170

Req:R386391 /Doc:DL 8437078 /Rev:19-Mar-2002 /Sts:NO.OK /Pgs:ALL /Prt:20-Mar-2017 10:23 /Seq:3 of 3
Ref:Kemps Creek /Src:M

Film .

SOLICITOR'S CERTIFICATE IN RESPECT OF A DISPOSITION TO A MINOR

S 29 Minors (Property + Contracts) Act 1970

I, LYNETTE JOY HUDSON , of 291-293 Macquarie Street Liverpool, Solicitor, certify as follows-

1. I am instructed and employed independently of Camelot Grange Pty Ltd

2. I have satisfied myself that

(a) Amer Fiaz Ahmed understands the true purport and effect of the disposition Sale of Lot 1 DP 1018318 Mamre Road Kemps Creek by Registered Proprietor Camelot Grange Pty Ltd

(b) Amer Fiaz Ahmed takes the disposition freely and voluntarily

(c) The consideration is not manifestly excessive.

Dated the 14th day of March 2002.

Solicitor

LYNETTE JOY HUDSON
Solicitor
291-293 MACQUARIE STREET
LIVERPOOL 2170

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Title Search

Information Provided Through
John McLaren & Co (NSW)
Ph. 02 9231 4872 Fax. 02 9233 6557

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 1/1018318

SEARCH DATE	TIME	EDITION NO	DATE
20/3/2017	9:11 AM	5	27/5/2008

LAND

LOT 1 IN DEPOSITED PLAN 1018318
AT ST MARYS
LOCAL GOVERNMENT AREA PENRITH
PARISH OF MELVILLE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP1018318

FIRST SCHEDULE

AHMED FIAZUDDIN
RUBINA FAREEN
AS JOINT TENANTS (T AC947072)

SECOND SCHEDULE (4 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AC993914 MORTGAGE TO HERITAGE BANK LIMITED
3 AD981455 MORTGAGE TO HERITAGE BANK LIMITED
* 4 AE911004 RESTRICTION(S) ON THE USE OF LAND

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Kemps Creek PRINTED ON 20/3/2017

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Req:R357949 /Doc:CT 10884-224 CT /Rev:19-Jan-2011 /Sts:OK.SC /Pgs:ALL /Prt:14-Mar-2017 16:00 /Seq:1 of 4
Ref:Kemps Creek /Src:M

10884-224

NEW SOUTH WALES

[redacted]FICATE OF TITLE

OPERTY ACT, 1900, as amended.

Vol. 10884 Fol. 224

Edition issued 11-9-1968

Appln. No.7336

For Crown Grants see Schedule

Prior Title Vol.6886 Fol. 54

AS K943628 **CANCELLED**

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

Witness L. Bollines

Registrar General.

(Page 1) Vol. 10884 Fol. 224

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in Deposited Plan 529420 in the City of Penrith Parishes of Claremont and Melville and County of Cumberland being the lands granted by the Crown Grants set out in the Schedule hereunder. EXCEPTING THEREOUT the road shown in the plan hereon and the land in Acquisition No.F617638.

SCHEDULE OF GRANTS

Parish	Portion	Name of Grantee	Date of Grant
Claremont and Melville	55	Nicholas Bayly	18-12-1805
Melville	53	Richard Fitzgerald	18-12-1805
Melville	54	Nicholas Bayly	1 -1-1810
Melville	Pt.61	Nicholas Bayly	1 -1-1810
Melville	65	Nicholas Bayly	13 -1-1818

FIRST SCHEDULE (continued overleaf)

NUMBER TWO FLEURS PTY. LIMITED.

Registrar General

SECOND SCHEDULE (continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grants above referred to.
2. ~~Easement for Drainage created by Transfer No.F617638 affecting the piece of land 20 feet wide shown in the plan hereon.~~
3. ~~Mortgage No.C104014 to The Commercial Bank of Australia Limited. Entered 6-12-1954.~~
4. Restriction on User No.H107598 of land shown by hatching in plan hereon - See Section 27E (6) Main Roads Act, 1924. Entered 2-4-1959.

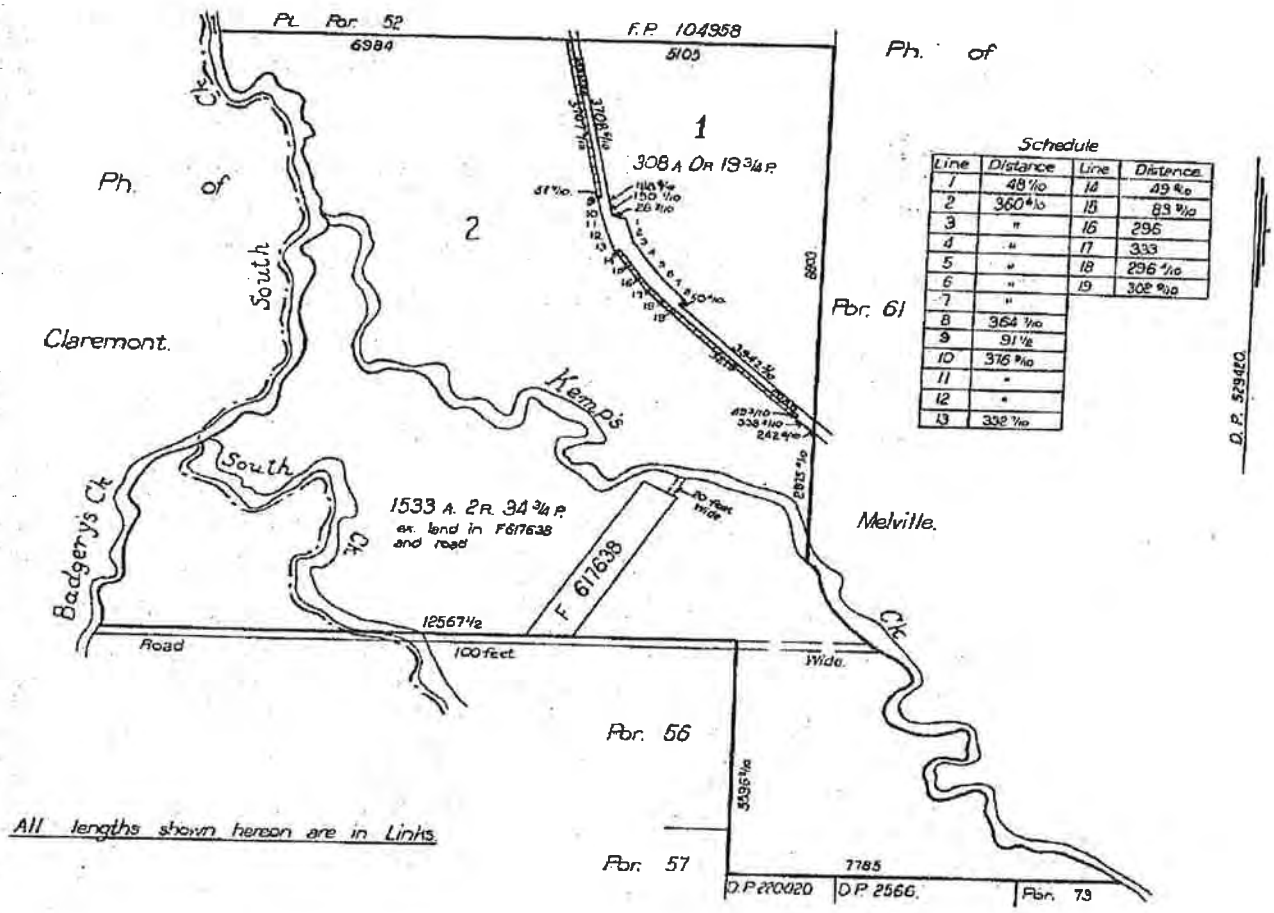
Registrar General

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

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

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

Vol. 10884 Fol. 224



Schedule

Line	Distance	Line	Distance
1	48 1/10	14	49 9/10
2	360 4/10	15	89 9/10
3	"	16	296
4	"	17	333
5	"	18	296 1/10
6	"	19	302 9/10
7	"		
8	364 1/10		
9	91 1/2		
10	376 9/10		
11	"		
12	"		
13	332 1/10		

Req:R357949 /Doc:CT 10884-224 CT /Rev:19-Jan-2011 /Sts:OK.SC /Pgs:ALL /Prt:14-Mar-2017 16:00 /Seq:2 of 4
Ref:Kemps Creek /Src:M

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
This deed is cancelled as to the whole New certificates of Title have issued on 14-12-1978 for lots in Deposited Plan No 258414 as follows: Lots 21 and 44 Vol 10757 Fol 164 to 184 respectively. REGISTRAR GENERAL					
NEW CERTIFICATE(S) OF TITLE ISSUED ON DP 258414 NO DEALING TO BE REGISTERED WITHOUT REFERENCE TO SURVEY PLANS BRANCH.					

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
~~Mortgage~~	~~K963631~~	~~25-1-1968~~	~~To F.H. Boom Pty Limited~~	~~1-10-1968~~		Discharged	Q629197	
~~Mortgage~~	~~157587~~	~~17-7-69~~	~~to Australia and New Zealand Bk Limited~~	~~24-9-1969~~		Discharged	Q 65729	
Mortgage	M844693	6-6-1972	to Midland Credit Limited	21-8-1972				
~~Caveat~~	~~P284318~~			12-6-1975		Withdrawn	P412530	
Mortgage	Q629201		to Australia and New Zealand Banking Group limited	11-9-1978				
Mortgage	M844693		Priority now being Q629201 M844693 See Postponement					
Mortgage	Q629201		Q629200	11-9-1978				
			Interests created pursuant to Section 88B Conveyancing Act, 1919, by the registration of Deposited Plan 258414.	4-10-1978				

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

Req:R357949 /Doc:CT 10884-224 CT /Rev:19-Jan-2011 /Sts:OK.SC /Pgs:ALL /Prt:14-Mar-2017 16:00 /Seq:3 of 4
Ref:Kemps Creek /Src:M

(Page 3 of 4 pages)

L 571827 Pty
M844693 M
N538677 VH (M844693)
P284318 PH
P371561 PH
P412530 PH
CT 18.1.77
065729 R
Q629197 Discharged
— 20.1.77
— 2.00 PM
GM 8/8/78
DP258414
APP 9.10.78
Q918134 M
Vol. 10884 Fol. 224

Req:R357949 /Doc:CT 10884-224 CT /Rev:19-Jan-2011 /Sts:OK.SC /Pgs:ALL /Prt:14-Mar-2017 16:00 /Seq:4 of 4
Ref:Kemps Creek /Src:M

Vol. 10884 Fol. 224

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General

2/
16 224
SP 13433
DP 258414

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		

(Page 4 of 4 pages)

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

Req:R356999 /Doc:CT 13757-165 CT /Rev:28-Feb-2011 /Sts:OK.SC /Pgs:ALL /Prt:14-Mar-2017 15:05 /Seq:1 of 2
Ref:Kemps Creek /Src:M

CERTIFICATE OF TITLE

NEW SOUTH WALES

PROPERTY ACT, 1900

13757/165

Appln. No.7336

Vol. 13757 Fol. 165

Prior Title Vol.10884 Fol.224

EDITION ISSUED

15 12 1978

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

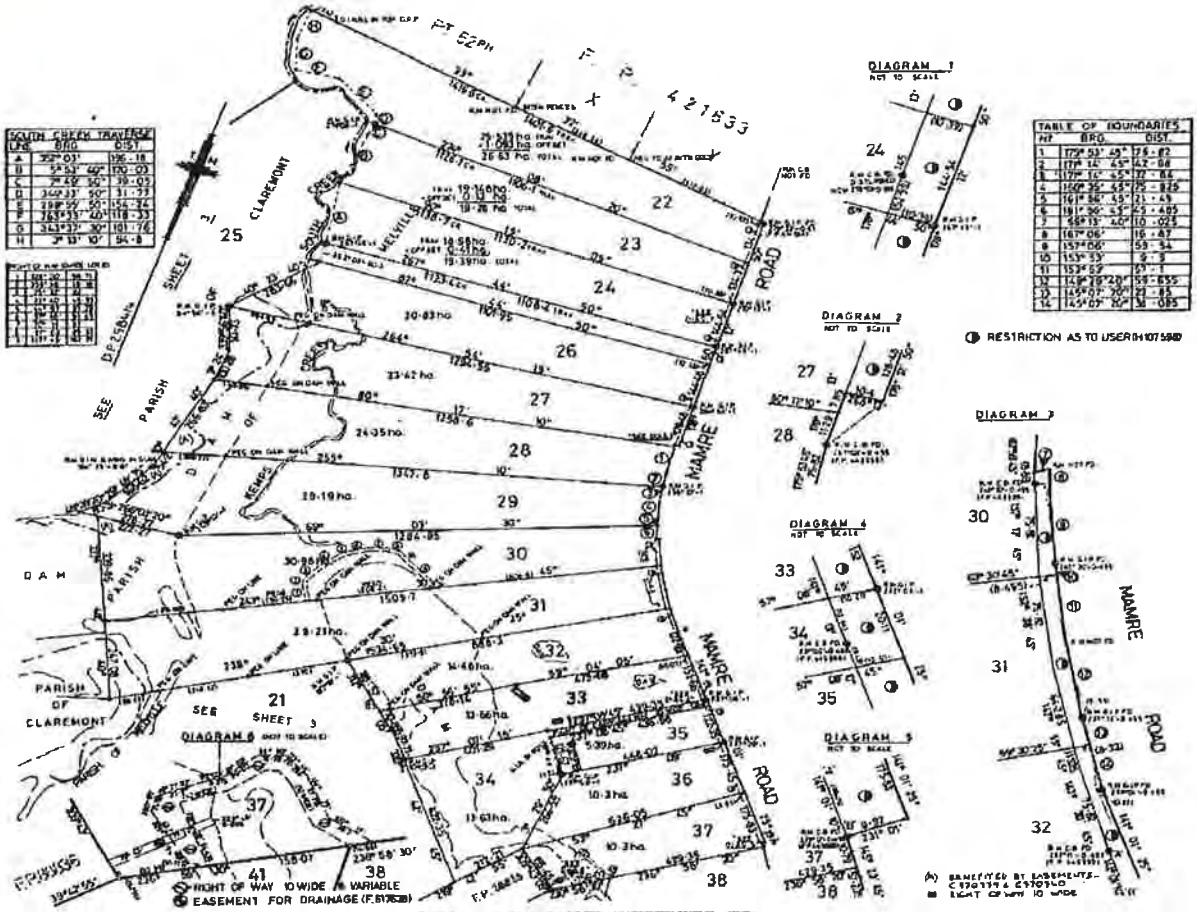
Registrar General.

SEE AUTO FOLIO

(Page 1) Vol. 13757 Fol. 165

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 22 in Deposited Plan 258414 at South St.Marys in the City of Penrith Parish of Melville and County of Cumberland being part of Portion 53 granted to Richard Fitzgerald on 18-12-1805.

FIRST SCHEDULE

~~NUMBER TWO FLEURS PTY. LIMITED.~~

SECOND SCHEDULE

GRY RT(SB)

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
2. H107598 Restriction on user (see section 27E(6) Main Roads Act, 1924) affecting the part of the land above described shown so burdened in Deposited Plan 258414.
3. ~~M844693 Mortgage to Midland C[illegible] Limited.~~ Discharged Q918132
4. ~~Q629201 Mortgage to Australia and New Zealand Banking Group Limited~~ Discharged S21315
5. ~~M844693) Mortgages. Priority is now Q629201 and M844693 (See Postponement of Mortgage~~ Q629201) ~~Q629200).~~ Cancelled Q918132

RG 2/62

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

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

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE REGISTRAR GENERAL'S OFFICE.

Vol. 13757 Fol. 165

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	REGISTERED	Signature of Registrar General
~~Sam~~ SALVATORE De Francesco, Farmer and Anita De Francesco, his wife as joint tenants in ½ share and				
~~Vince~~ VINCENZO De Francesco, Farmer and Josephine De Francesco, his wife as joint tenants in ½ share,				
all of West Hoxton, tenancy in common.	Transfer	S21316	7-10-1980	

S748440 S918132 — 34 Lmi R645933 — 1 CT 12.6.80 DP610242 S213150M — 6T. S748440 MR — C/NR V926346 D/M 1

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	PARTICULARS	REGISTERED	~~Signature of~~ Registrar General	CANCELLATION	
~~Mortgage~~	~~G918132~~	~~to Finance Corporation of Australia Limited~~	9-5-1979		Discharged	R645933
RWZ DP610242		Right of Way appurtenant to the land within described affecting the land shown so burdened in DP610242	4-7-1980			
~~S748440 Mortgage to Commonwealth Savings Bank of Australia.~~		~~Registered 23-10-1981~~			Discharged	V926346

(Page 2 of 2 pages)

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

Req:R356999 /Doc:CT 13757-165 CT /Rev:28-Feb-2011 /Sts:OK.SC /Pgs:ALL /Prt:14-Mar-2017 15:05 /Seq:2 of 2
Ref:Kemps Creek /Src:M

InfoTrack
An Approved LPI NSW
Information Broker

Historical Title

Information Provided Through
John McLaren & Co (NSW)
Ph. 02 9231 4872 Fax. 02 9233 6557

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
14/3/2017 2:54PM

FOLIO: 22/258414

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 13757 FOL 165

Recorded	Number	Type of Instrument	C.T. Issue
5/6/1987		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
22/6/1987		AMENDMENT: PARISH-COUNTY	
6/10/1987		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
20/10/1987	X133464	TRANSFER	
20/10/1987	X133465	MORTGAGE	EDITION 1
12/4/1988	X482811	DISCHARGE OF MORTGAGE	EDITION 2
27/6/1991	Z745070	MORTGAGE	EDITION 3
18/11/1993		AMENDMENT: LOCAL GOVT AREA	
19/12/1994	U878631	MORTGAGE	EDITION 4
14/10/1997	3488429	DISCHARGE OF MORTGAGE	
14/10/1997	3488430	DISCHARGE OF MORTGAGE	
14/10/1997	3488431	MORTGAGE	EDITION 5

*** END OF SEARCH ***

Kemps Creek PRINTED ON 14/3/2017

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.

InfoTrack
An Approved LPI NSW
Information Broker

Title Search

Information Provided Through
John McLaren & Co (NSW)
Ph. 02 9231 4872 Fax. 02 9233 6557

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 22/258414

SEARCH DATE	TIME	EDITION NO	DATE
20/3/2017	9:11 AM	5	14/10/1997

LAND

LOT 22 IN DEPOSITED PLAN 258414
AT SOUTH ST. MARYS
LOCAL GOVERNMENT AREA PENRITH
PARISH OF MELVILLE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP258414

FIRST SCHEDULE

VINCENZO DE FRANCESCO
JOSEPHINE DE FRANCESCO
AS JOINT TENANTS (T X133464)

SECOND SCHEDULE (4 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 H107598 RESTRICTION ON USER (S.27E(6) MAIN ROADS ACT, 1924) AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
3 DP610242 RIGHT OF WAY APPURTENANT TO THE LAND ABOVE DESCRIBED
4 3488431 MORTGAGE TO NATIONAL AUSTRALIA BANK LIMITED

NOTATIONS

NOTE: THE CERTIFICATE OF TITLE FOR THIS FOLIO OF THE REGISTER DOES NOT INCLUDE SECURITY FEATURES INCLUDED ON COMPUTERISED CERTIFICATES OF TITLE ISSUED FROM 4TH JANUARY, 2004. IT IS RECOMMENDED THAT STRINGENT PROCESSES ARE ADOPTED IN VERIFYING THE IDENTITY OF THE PERSON(S) CLAIMING A RIGHT TO DEAL WITH THE LAND COMPRISED IN THIS FOLIO.

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Kemps Creek PRINTED ON 20/3/2017

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. 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.

Appendix G Historical Aerial Photographs

Table G.1 Aerial Photograph Review

Year	Observations	Likely Site Uses
1956	The site appeared predominantly grass and bush covered. A mound was apparent in the north-eastern corner of the site. Two dams were present onsite, one in the central portion (within the bounds of 713-755 Mamre Road) and the other in the central northern portion (within the bounds of 657-703 Mamre Road). The surrounding properties appeared rural residential in nature. The service easement bordering the site to the north was observed. Mamre Road and South Creek bordered the site to the east and west respectively. A bridge was present adjacent to the northwest site corner, crossing South Creek allo. A large dam was present to the south of the site which meandered west to South Creek.	Agricultural and residential
1965	Substantial vegetation clearance had occurred since the previous (1956) image in the northern portion within the bounds of 657-703 Mamre Road. A square building was present on the northeast corner of 707-711 Mamre Road. Several small structures west of the square building were present on 707-711 Mamre Road. The northern dam on 707-711 Mamre Road was observed, with an adjacent dam to the south, present on 713-755 Mamre Road. Vegetation had been cleared from 707A Mamre Road, on which a golf course (or similar recreational facility) was present. The remaining areas of the site and surrounding area were generally similar to the 1956 aerial photograph.	Agricultural, recreational, and residential
1978	Three dams had been constructed in the northern portion of the site, within the bounds of 657-703 Mamre Road. A residence had been constructed in the northern portion of the site, consistent with the position of the present-day residence at 657-703 Mamre Road. Several small structures had been constructed surrounding the residence and two sheds were present to the west of the residence. The square structure observed within the 1965 aerial was no longer present. A large rectangular shed and a small dam had been constructed to south of Bakers Lane within the bounds of 707-711 Mamre Road. Two concentric ovals/formed tracks, potentially associated with equestrian purposes were situated within the central portion of the site in the bounds of 707-711 Mamre Road. A small shed was situated in the central portion of the site, consistent with the location of the present-day concrete slab within the bounds of 713-755 Mamre Road. Another small shed was located in the south-western corner of 713-755 Mamre Road, in the location consistent with the shed remains identified during the site visit. Three additional dams had been constructed within the bounds of 713-755 Mamre Road. The central portion of 757-769 Mamre Road apperead to have been processed (by tilling or similar) in preparation of potential crop cultivation. The remaining areas of the site were relatively unchanged from the 1965 aerial photograph. The pond/dam situated to the south of the site had been removed/drained.	Agricultural, recreational and residential
1986	The area within land parcels 657-703 and 713-755 Mamre Road appeared to remain relatively unchanged from the 1978 aerial photograph. A dark surface covering, potentially bitumen or gravel, had been laid running from Bakers Lane to the west of the shed in the north-eastern portion of 707-711 Mamre Road. Golf course features formerly situated within the bounds of 707A Mamre Road appeared upkept and the eastern greens/tee areas were not observed. A residence and shed were present in the southern portion of the site within the bounds of 757-769 Mamre Road, consistent with the present-day layout. Market gardens were observed to the south and west of the residence.	Agricultural and residential

	The remaining areas of the site and surrounding area were relatively unchanged from the 1978 aerial photograph.	
1994	The area within land parcels 657-703, 707A Mamre Road and 713-755 Mamre Road appeared to remain relatively unchanged from the 1986 aerial photograph. Within the land parcel 707-711 Mamre Road, temporary buildings and or small sheds had been constructed in the present day Mamre Produce area. A large shed surrounded by dark coloured surface covering (asphalt/gravel) and stockpiled material were also present to the west of site buildings in the north-western corner. The dam had been extended with potential material storage west of the northern dam. A large additional dam had been created in the central portion of the land parcel, consistent with the location of the present day central dam. Three additional small objects were observed surrounding the dam. The drainage channel formerly running through the land parcel appeared to have been filled. Intensive agricultural practices or market gardening was observed to the south of the dam. Clearance of bush was observed throughout the land parcel. Potential stockpiling of vegetation in the southern portion of the land parcel was observed. Market gardens occupied the majority of 757-769 Mamre Road. Additional structures, potentially greenhouses/shade structures and the development of a shed was observed adjacent to the residence within this land parcel. A dam had been constructed in the northern portion of the land parcel. Development of residential properties and additional agricultural features, including market gardens was observed surrounding the site to the east and south respectively.	Agricultural and residential
2005	The area within land parcels 657-703 Mamre Road appeared to remain relatively unchanged with the exception of the construction of an implement shed adjacent to the residence. The area within land parcels 707A Mamre Road and 713-755 Mamre Road appeared to remain relatively unchanged. Material formerly stockpiled within the yard, adjacent to the shed in land parcel 707-711 Mamre Road had been removed. The remaining area of the land parcel appeared to comprise cultivated crops. Greenhouse structures formerly situated within land parcel 757-769 Mamre Road had been removed. Land use within the central portion of 757-769 Mamre Road appeared to be predominantly pastoral. The surrounding areas remained relatively unchanged from the 1994 aerial image.	Agricultural and residential
2016	The areas within land parcels 657-703 and 713-755 Mamre Road remained relatively unchanged. The dam within the central portion of land parcel 707-711 Mamre Road had been extended. An additional shed had also been constructed within the yard area of the land parcel. Two residences had been constructed within the central portion of land parcel 707A Mamre Road. A bitumen driveway leading to Bakers Lane had also been constructed. A dam had been constructed to the north-west of these residences. Land-use within land parcel 757-769 Mamre Road appeared predominantly pastoral. Stockpiling of material and the construction of a potential pond had occurred adjacent to the yard area within this land parcel. Two sheds had been constructed along the southern boundary of this land parcel.	Agricultural, residential and commercial



Legend:

Approximate Site Boundary

[redacted]

Job No: 54963

Client: Altis Property Group

Version: R01 Rev A	Date: 18-Feb-2019
Drawn By: RF	Checked By: RH

Scale 1:7,000

0 80 160

metres

Coor. Sys. GDA 1994 MGA Zone 56

Mamre Road
Kemps Creek, NSW

HISTORICAL AERIAL PHOTOGRAPH 1956

FIGURE: 1956

File Name: 54963_1956
Reference: Land & Property Information, NSW 1956.



Legend:

Approximate Site Boundary

[redacted]

Job No: 54963

Client: Altis Property Group

Version: R01 Rev A	Date: 18-Feb-2019
Drawn By: RF	Checked By: RH

Scale 1:7,000

0 80 160

metres

Coor. Sys. GDA 1994 MGA Zone 56

Mamre Road
Kemps Creek, NSW

HISTORICAL AERIAL PHOTOGRAPH 1965

FIGURE: 1965

File Name: 54963_1965
Reference: Land & Property Information, NSW 1965.



Legend:

Approximate Site Boundary

[redacted]

Job No: 54963

Client: Altis Property Group

Version: R01 Rev A	Date: 18-Feb-2019
Drawn By: RF	Checked By: RH

Scale 1:7,000

0 80 160

metres

Coor. Sys. GDA 1994 MGA Zone 56

Mamre Road
Kemps Creek, NSW

HISTORICAL AERIAL PHOTOGRAPH 1978

FIGURE: 1978

File Name: 54963_1978
Reference: Land & Property Information, NSW 1978.



Legend:

Approximate Site Boundary

[redacted]

Job No: 54963

Client: Altis Property Group

Version: R01 Rev A	Date: 18-Feb-2019
Drawn By: RF	Checked By: RH

Scale 1:7,000

0 80 160

metres

Coor. Sys. GDA 1994 MGA Zone 56

Mamre Road
Kemps Creek, NSW

HISTORICAL AERIAL PHOTOGRAPH 1986

FIGURE: 1986

File Name: 54963_1986
Reference: Land & Property Information, NSW 1986.



Legend:

Approximate Site Boundary

[redacted]

Job No: 54963

Client: Altis Property Group

Version: R01 Rev A	Date: 18-Feb-2019
Drawn By: RF	Checked By: RH

Scale 1:7,000

0 80 160

metres

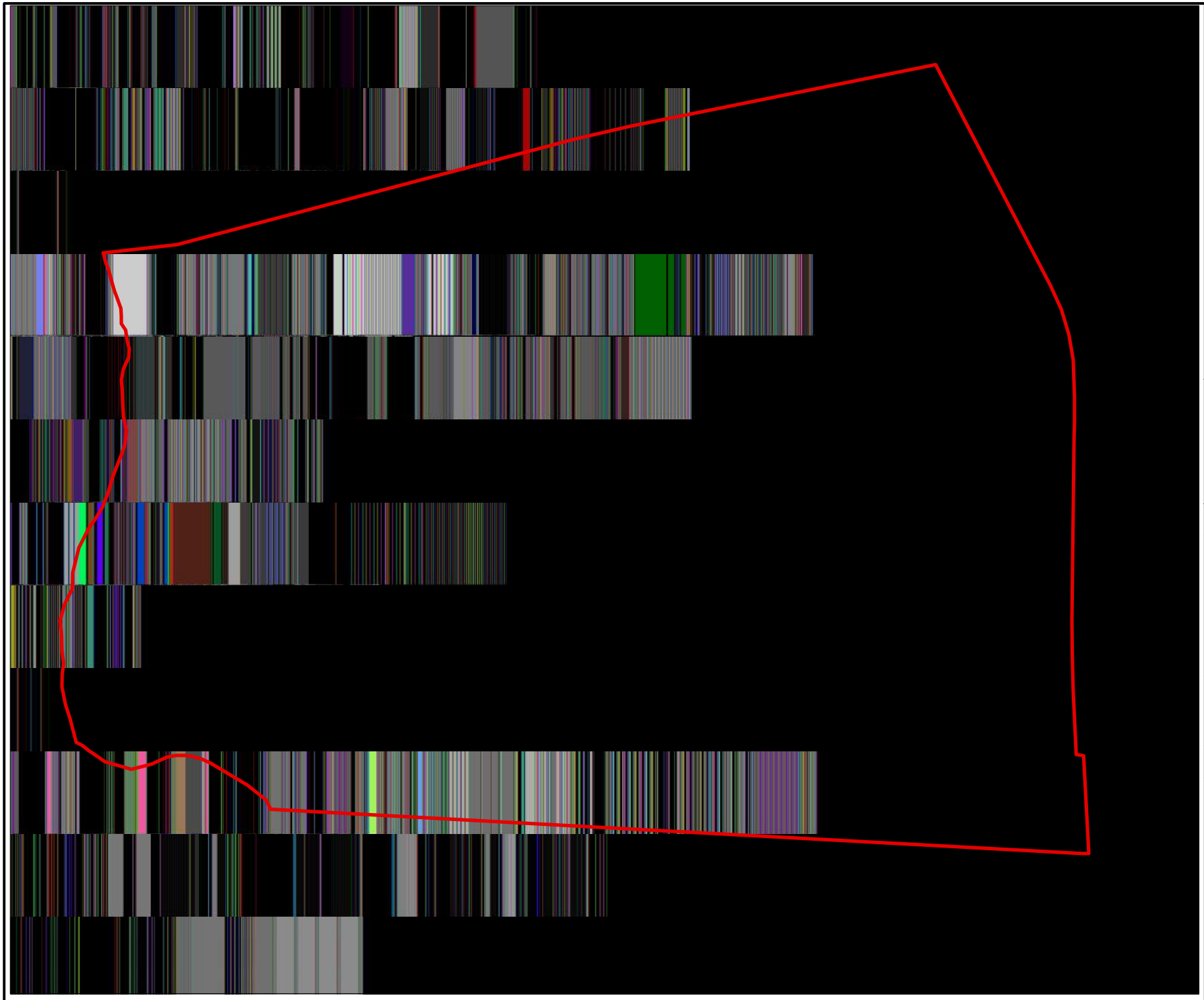
Coor. Sys. GDA 1994 MGA Zone 56

Mamre Road
Kemps Creek, NSW

HISTORICAL AERIAL PHOTOGRAPH 1994

FIGURE: 1994

File Name: 54963_1994
Reference: Land & Property Information, NSW 1994.



Legend:

Approximate Site Boundary

[redacted]

Job No: 54963

Client: Altis Property Group

Version: R01 Rev A	Date: 18-Feb-2019
Drawn By: RF	Checked By: RH

Scale 1:7,000

0 80 160

metres

Coor. Sys. GDA 1994 MGA Zone 56

Mamre Road
Kemps Creek, NSW

HISTORICAL AERIAL PHOTOGRAPH 2005

FIGURE: 2005

File Name: 54963_2005
Reference: Google Earth Pro. Imagery - 18 September 2005.



Legend:

Approximate Site Boundary

[redacted]

Job No: 54963

Client: Altis Property Group

Version: R01 Rev A	Date: 18-Feb-2019
Drawn By: RF	Checked By: RH

Scale 1:7,000

0 80 160

metres

Coor. Sys. GDA 1994 MGA Zone 56

Mamre Road
Kemps Creek, NSW

HISTORICAL AERIAL PHOTOGRAPH 2016

FIGURE: 2016

File Name: 54963_2016
Reference: Near Maps - http://www.nearmap.com.au/. Imagery 6 Nov 2016.

Appendix H EPA Searches

Section 91 Protection of the Environment Operations Act 1997

Clean-Up Notice

Dominic Tassoni
819 Mamre Road
KEMPS CREEK NSW 2178

Attention: Mr Dominico Tassone

Notice Number	1552021
File Number	I07586-2017
Date	12-May-2017

NOTICE OF CLEAN-UP ACTION

BACKGROUND

(A) The Environment Protection Authority (**EPA**) is responsible for the administration and enforcement of the *Protection of the Environment Operations Act 1997* (**POEO Act**).

(B) The POEO Act defines waste to include:

***waste** includes:*

(a) any substance (whether solid, liquid or gaseous) that is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment, or

(b) any discarded, rejected, unwanted, surplus or abandoned substance, or

(c) any otherwise discarded, rejected, unwanted, surplus or abandoned substance intended for sale or for recycling, processing, recovery or purification by a separate operation from that which produced the substance, or

(d) any processed, recycled, re-used or recovered substance produced wholly or partly from waste that is applied to land, or used as fuel, but only in the circumstances prescribed by the regulations, or

(e) any substance prescribed by the regulations to be waste.

A substance is not precluded from being waste for the purposes of this Act merely because it is or may be processed, recycled, re-used or recovered.

(C) Authorised Officers of the EPA may use powers under Chapter 7 of the POEO Act for the purpose of administering and enforcing environmental protection legislation.

(D) On 8 May 2017 EPA Authorised Officers advised the occupier of 819 and 833B Mamre Road, Kemps Creek (**the Premises**) it had reason to believe that unlawful waste activities were occurring at the Premises (see Image 1 in Appendix A) and that it intended to conduct an inspection.

(E) On 9 May 2017 EPA Authorised Officers confirmed via a telephone conversation with Dominico Tassone that an inspection would take place on this date.

(F) At 9:00am 9 May 2017, EPA Authorised Officers and an officer of Penrith City Council carried out an inspection of the Premises and observed the following:

i. The Premises naturally slopes east to west from Mamre Road down to Kemps Creek and South Creek located on the Premises (see Appendix A Image 1)

ii. A significant volume of waste material has been imported to the Premises estimated to be in excess of 13,000m^2 in area and approximately 0.3m in depth.

iii. The EPA estimates more than 2640 tonnes of material has been imported to the Premises since 22 April 2015.

iv. The waste material consists of a sandy matrix and contains a significant amount of suspected railway ballast waste and processed building and demolition waste including bricks, tiles, metal, plastic and suspected asbestos.

v. Visual comparison of the waste application areas to the surrounding natural ground level clearly showed this area to have been raised and levelled.

(G) During the inspection on 9 May 2017, EPA Authorised Officers conducted sampling for the purposes of determining the presence of asbestos. Suspected asbestos fibrous cement fragments were collected from the Premises and sent for analysis at a NATA accredited testing laboratory.

(H) The EPA believes that the material observed at the Premises on 9 May 2017 falls within the definition of “waste” as defined in the POEO Act.

(I) The volume of waste deposited at the Premises would require an Environment Protection Licence under Schedule 1 of the POEO Act (waste disposal – application to land). Section 48 of the POEO Act states that it is an offence to carry out a scheduled activity without an Environment Protection Licence. A search of the EPA public register indicates that no Environment Protection Licence has been issued for the Premises.

(J) Penrith City Council has advised that there is no consent or approval to permit landfilling activities at the Premises.

(K) The EPA is the appropriate regulatory authority for the Premises.

(L) The EPA is investigating potential breaches of the POEO Act at the Premises and is requiring clean up action to be undertaken by the land owner.

(M) The EPA reasonably suspects that pollution incidents have occurred and are occurring at the Premises in relation to the storage and deposit of waste, including:

i. The land application of over 10 tonnes of asbestos waste, being land pollution.

(N) Under section 91 of the POEO Act the EPA can issue a clean up notice to direct an owner or occupier of a property at or from which the authority reasonably suspects that a pollution incident has occurred or is occurring.

(O) A land title search reveals that:

i. Lot 27 DP 258414 is owned by Dominico Tassone and Josephine Tassone as Tenants in Common.

ii. Lot 28 DP 258414 is owned by Pegataw Pty Ltd of which Dominico Tassone and Josephine Tassone are company directors.

Clean-Up Notice

(P) On 9 May 2017 EPA Authorised Officers issued clean up directions orally to Dominico Tassone under Section 93 of the POEO Act. Comments were sought in relation to the directions, and consequently the directions were formalised in writing and signed by Dominico Tassone.

DIRECTION TO TAKE CLEAN-UP ACTION

A. The Environment Protection Authority (EPA) directs Dominic Tassoni to take the following clean-up action:

1. Immediately stop and continue to not import any fill material to the Premises.

2. Do not disturb the fill material in any way (that has been land-applied on the western and central areas). Including but not limited to:

- Slashing;
- Digging; and
- Disturbing generally

3. Do not remove or alter the material that has been land-applied, including covering with other soil or fill.

B. All of the actions set out in paragraphs 1 to 3 above are continuing obligations until written advice is received from the EPA.

FEE TO BE PAID

- You are required by law to pay a fee of $520 for the administrative costs of issuing this notice. An invoice for this amount will be posted to you.
- It is an offence not to pay this fee. However you can apply for an extension of time to pay the fee or for the fee to be waived. At the end of this notice there is information about how and when to pay the fee and how to apply for an extension or a waiver of the fee.

Ruth Owler

Unit Head

Waste & Resource Recovery

(by Delegation)

Clean-Up Notice

INFORMATION ABOUT THIS CLEAN-UP NOTICE

- This notice is issued under section 91 of the Protection of the Environment Operations Act 1997.
- It is an offence against the Act not to comply with a clean-up notice unless you have a reasonable excuse.

Penalty for not complying with this notice

- The maximum penalty for a corporation is $1,000,000 and a further $120,000 for each day the offence continues. The maximum penalty for an individual is $250,000 and a further $60,000 for each day the offence continues.

Cost recovery from the person who caused the incident

- If you comply with this clean-up notice but you are not the person who caused the pollution incident to which the notice relates, you have a right to go to court to recover your costs of complying with the notice from the person who caused the incident.

Deadline for paying the fee

- The fee must be paid by **no later than 30 days after the date of this notice**, unless the EPA extends the time to pay the fee, or waives the fee.

How to pay the fee

- Possible methods of payment are listed on the last page of the attached invoice/statement.
- Please include the payment slip from the attached invoice/statement with your payment.

How to apply for an extension of time to pay/waive the fee

- Any application for and extension of time to pay the fee or for the fee to be waived should be made in writing to the EPA. The application should set out clearly why you think your application should be granted.

Clean-Up Notice

Other costs

- The Protection of the Environment Operations Act allows the EPA to recover from you reasonable costs and expenses it incurs in monitoring action taken under this notice, ensuring the notice is complied with and associated matters. (If you are going to be required to pay these costs and expenses you will later be sent a separate notice called a "Notice Requiring Payment of Reasonable Costs and Expenses").

Continuing obligation

- Under section 319A of the Act, your obligation to comply with the requirements of this notice continues until the notice is complied with, even if the due date for compliance has passed.

Variation of this notice

- This notice may only be varied by subsequent notices issued by the EPA.

Clean-Up Notice

Appendix A

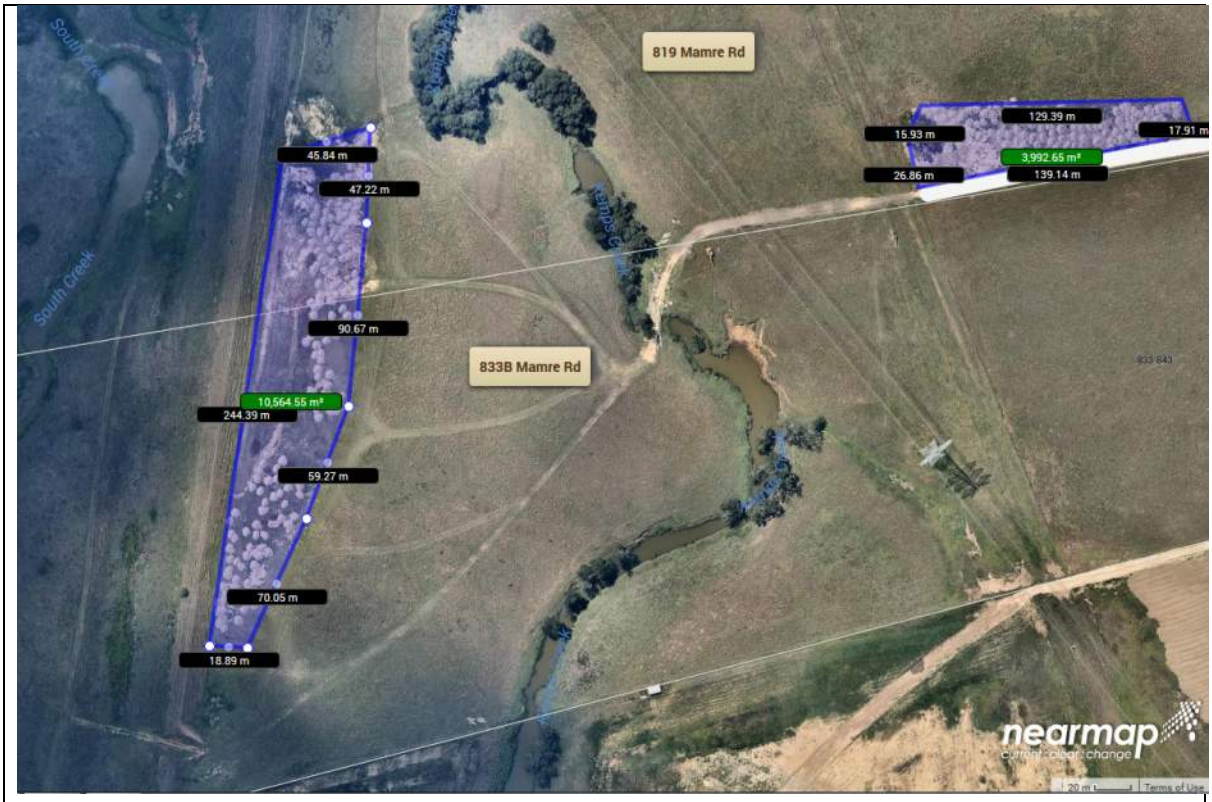


Image 1 – aerial photograph showing properties western and centrally applied waste

Search results

Your search for:Notice No. or Area No.:

Search Again
Refine Search

did not find any records in our database.

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

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

Search TIP

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

... more search tips

More information about particular sites may be available from:

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

See What's in the record and What's not in the record.

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

9 February 2019

For business and industry

For local government

Contact us

131 555 (tel:131555)

info@epa.nsw.gov.au (mailto:info@epa.nsw.gov.au)

EPA Office Locations (https://www.epa.nsw.gov.au/about-us/contact-us/locations)

Accessibility (https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/help-index)
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Find us on (https://au.linkedin.com/company/environment-protection-authority-nsw) (https://www.facebook.com/EPANSW)

Number	Name	Location	Type	Status	Issued date
5186	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	POEO licence	Issued	21-Dec-00
1024201	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	8-Oct-03
1032508	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	18-Nov-03
1043715	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	2-Jun-05
1049104	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	12-Jul-05
1050663	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	12-Aug-05
1051516	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	2-Sep-05
1053429	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	1-Dec-05
12618	BRANDOWN PTY. LIMITED	Elizabeth Drive, KEMPS CREEK, NSW 2178	POEO licence	Issued	28-Feb-07
1063385	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	28-Feb-07
1071515	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	12-Sep-07
1080254	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	16-Nov-07
1080705	BRANDOWN PTY. LIMITED	Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	25-Feb-08
1080704	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	12-Sep-08
1093240	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	31-Oct-08
1093310	BRANDOWN PTY. LIMITED	Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	31-Oct-08
1112532	BRANDOWN PTY. LIMITED	Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	19-Mar-10
1114014	BRANDOWN PTY. LIMITED	Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	11-May-10
1115874	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	28-Jun-10
1114287	BRANDOWN PTY. LIMITED	Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	14-Jul-10
1118444	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	3-Dec-10
3085764523	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	Penalty Notice	Issued	9-Jul-12
1518646	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	16-Apr-14
1548534	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	5-Feb-18
1567241	BRANDOWN PTY. LIMITED	Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Pending	14-May-18
1573711	BRANDOWN PTY. LIMITED	LOT 90 ELIZABETH DRIVE , KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	6-Feb-19
1502208	Calibre Construction Corp Pty Ltd	Elizabeth Drive, KEMPS CREEK, NSW 2178	s.91 Clean Up Notice	Issued	1-Nov-11
1552021	Dominic Tassone	819-833B Mamre Road, KEMPS CREEK, NSW 2178	s.91 Clean Up Notice	Issued	12-May-17
11736	DREAM PROPERTIES PTY LTD	50 VICTOR AVENUE, KEMPS CREEK, NSW 2171	POEO licence	Revoked	28-Jan-03
1042914	DREAM PROPERTIES PTY LTD	50 VICTOR AVENUE, KEMPS CREEK, NSW 2171	s.79 Revocation of a Licence	Issued	8-Dec-04
20593	HI-QUALITY QUARRY (NSW) PTY LTD	1503-1519 Elizabeth Drive, KEMPS CREEK, NSW 2178	POEO licence	Issued	20-Dec-16
4581	KARI & GHOSSAYN PTY LTD (C/- STEVEN NICOLS - LIQUIDATOR)	CLIFTON AVE, KEMPS CREEK, NSW 2171	POEO licence	Revoked	27-Jun-00
1015001	KARI & GHOSSAYN PTY LTD (C/- STEVEN NICOLS - LIQUIDATOR)	CLIFTON AVE, KEMPS CREEK, NSW 2171	s.58 Licence Variation	Issued	14-Feb-02
1028286	KARI & GHOSSAYN PTY LTD (C/- STEVEN NICOLS - LIQUIDATOR)	CLIFTON AVE, KEMPS CREEK, NSW 2171	s.58 Licence Variation	Issued	25-Jun-03
1040662	KARI & GHOSSAYN PTY LTD (C/- STEVEN NICOLS - LIQUIDATOR)	CLIFTON AVE, KEMPS CREEK, NSW 2171	s.58 Licence Variation	Issued	15-Oct-04
1051514	KARI & GHOSSAYN PTY LTD (C/- STEVEN NICOLS - LIQUIDATOR)	CLIFTON AVE, KEMPS CREEK, NSW 2171	s.91 Clean Up Notice	Issued	19-Sep-05

1055457	KARI & GHOSSAYN PTY LTD (C/- STEVEN NICOLS - LIQUIDATOR)	CLIFTON AVE, KEMPS CREEK, NSW 2171	s.58 Licence Variation	Issued	17-May-06
1063855	KARI & GHOSSAYN PTY LTD (C/- STEVEN NICOLS - LIQUIDATOR)	CLIFTON AVE, KEMPS CREEK, NSW 2171	s.58 Licence Variation	Issued	15-Sep-06
1065320	KARI & GHOSSAYN PTY LTD (C/- STEVEN NICOLS - LIQUIDATOR)	CLIFTON AVE, KEMPS CREEK, NSW 2171	s.58 Licence Variation	Issued	6-Nov-06
1067405	KARI & GHOSSAYN PTY LTD (C/- STEVEN NICOLS - LIQUIDATOR)	CLIFTON AVE, KEMPS CREEK, NSW 2171	s.58 Licence Variation	Issued	6-Dec-06
1069425	KARI & GHOSSAYN PTY LTD (C/- STEVEN NICOLS - LIQUIDATOR)	CLIFTON AVE, KEMPS CREEK, NSW 2171	s.79 Suspension of a Licence	Issued	15-Feb-07
1089317	KARI & GHOSSAYN PTY LTD (C/- STEVEN NICOLS - LIQUIDATOR)	CLIFTON AVE, KEMPS CREEK, NSW 2171	s.79 Revocation of a Licence	Issued	10-Jul-08
1509139	Kemps Creek Investments Pty Ltd	113 Western Rd, KEMPS CREEK, NSW 2171	s.91 Clean Up Notice	Issued	12-Nov-12
1511151	Kemps Creek Investments Pty Ltd	113 Western Rd, KEMPS CREEK, NSW 2171	s.91 Clean Up Notice	Issued	8-Jan-13
1511634	Kemps Creek Investments Pty Ltd	113 Western Rd, KEMPS CREEK, NSW 2171	s.91 Clean Up Notice	Issued	14-May-13
1516213	Kemps Creek Investments Pty Ltd	113 Western Rd, KEMPS CREEK, NSW 2171	s.91 Clean Up Notice	Issued	19-Sep-13
1523933	LIVERPOOL CITY COUNCIL	245 Devonshire Road, KEMPS CREEK, NSW 2178	s.91 Clean Up Notice	Issued	15-Sep-14
3085776091	LIVERPOOL CITY COUNCIL	245 Devonshire Road, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	17-Mar-15
1539676	Mahmoud Tellaoui	1055 Fifteenth Avenue , KEMPS CREEK, NSW 2178	s.91 Clean Up Notice	Issued	9-Apr-16
3085781106	Mahmoud Tellaoui	1055 Fifteenth Avenue , KEMPS CREEK, NSW 2178	Penalty Notice	Issued	23-Dec-16
1549534	Mahmoud Tellaoui	1055 Fifteenth Avenue , KEMPS CREEK, NSW 2178	s.91 Clean Up Notice	Issued	21-Mar-18
1562364	Mahmoud Tellaoui	1055 Fifteenth Avenue , KEMPS CREEK, NSW 2178	s.110 Revocation of Clean Up Notice	Issued	21-Mar-18
7219	NOVARTIS ANIMAL HEALTH AUSTRALASIA PTY. LIMITED	245 WESTERN ROAD, KEMPS CREEK, NSW 2171	POEO licence	No longer in force	26-Jun-00
1048306	NOVARTIS ANIMAL HEALTH AUSTRALASIA PTY. LIMITED	245 WESTERN ROAD, KEMPS CREEK, NSW 2171	s.58 Licence Variation	Issued	30-May-05
1530101	OLATHREE PTY LTD	901 - 915 Mamre Road, KEMPS CREEK, NSW 2178	s.91 Clean Up Notice	Issued	24-Jul-15
3085777815	OLATHREE PTY LTD	901 - 915 Mamre Road, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	15-Oct-15
3085780464	OLATHREE PTY LTD	901 - 915 Mamre Road, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	7-Oct-16
3173524137	PACIFIC ENVIRONMENTAL AUSTRALIA PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	Penalty Notice	Court Elected	
3173525796	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	Penalty Notice	Withdrawn	
4068	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	POEO licence	Issued	13-Sep-01
1012274	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	22-Nov-01
1025236	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.91 Clean Up Notice	Issued	24-Feb-03
1027794	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	2-Jun-03
1043730	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.110 Variation of Clean Up Notice	Issued	14-Jan-05
1052725	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	24-Jan-06
1061021	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	12-Sep-06
1065278	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	25-Oct-06
1073171	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	21-Sep-07
12889	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	POEO licence	Issued	29-Jul-08
1083456	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	13-Jan-09
1098074	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	27-Feb-09
1099620	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	8-May-09

1099619	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	8-May-09
1104883	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	15-Sep-09
1114444	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	28-May-10
1114442	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	9-Jun-10
1118752	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	25-Aug-10
1120688	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	21-Oct-10
1122735	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	21-Dec-10
1123246	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	24-Dec-10
3085764890	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	27-Jul-12
1506913	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	27-Aug-12
1511557	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	4-Feb-13
1511861	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	Compliance Audit	Complete	8-Feb-13
3085769950	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	9-Apr-13
3085771765	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	15-Jul-13
1512996	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	20-Nov-13
3085773580	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	11-Apr-14
1501920	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	17-Apr-14
1524790	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	11-Sep-14
1525953	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	28-Nov-14
1525173	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	11-Dec-14
1529767	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	14-Aug-15
1533348	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	7-Sep-15
1534998	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	20-Nov-15
3085781519	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	8-Mar-17
3085782462	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	29-May-17
3085782352	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	13-Jun-17
1551698	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	7-Jul-17
1556706	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	4-Dec-17
1562775	SUEZ RECYCLING & RECOVERY PTY LTD	1725 ELIZABETH DRIVE, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	20-Mar-18
3173525805	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	29-Jun-18
1572016	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Pending	2-Oct-18
12901	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	POEO licence	Issued	29-Jul-08
1090935	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	6-Aug-08
1096728	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	19-Jan-09
1097147	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	30-Jan-09
1098859	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	19-Mar-09

1100214	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	25-May-09
1102083	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	26-Jun-09
1103753	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	29-Jul-09
1104542	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	31-Jul-09
1110533	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	8-Jan-10
1119663	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	19-Oct-10
1122581	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	16-Dec-10
1122702	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.91 Clean Up Notice	Issued	17-Dec-10
1123904	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	10-Feb-11
1125057	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	15-Mar-11
1127795	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	6-May-11
1500848	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	2-Sep-11
1503186	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	23-Dec-11
3085765403	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	30-Aug-12
1506536	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	31-Aug-12
1509665	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	7-Nov-12
1510983	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	21-Dec-12
3085769592	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	15-Mar-13
3085772425	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	23-Oct-13
1517820	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	3-Apr-14
1521541	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	7-May-14
1527700	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	30-Apr-15
1534566	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	18-Dec-15
3085778365	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	15-Feb-16
1549817	SYDNEY RECYCLING PARK PTY LTD	16-23 Clifton Avenue, KEMPS CREEK, NSW 2178	s.58 Licence Variation	Issued	16-Nov-17
1524066	Victor Van Der Klooster	20 Victor Avenue, KEMPS CREEK, NSW 2178	s.91 Clean Up Notice	Issued	25-Aug-14
1524702	XPRESS TRANSPORT SOLUTIONS PTY LTD	50 VICTOR AVENUE, KEMPS CREEK, NSW 2178	s.91 Clean Up Notice	Issued	1-Sep-14
3085778109	XPRESS TRANSPORT SOLUTIONS PTY LTD	50 VICTOR AVENUE, KEMPS CREEK, NSW 2178	Penalty Notice	Issued	22-Dec-15

List of NSW Contaminated Sites Notified to EPA as of 9 January 2019

Background

A strategy to systematically assess, prioritise and respond to notifications under Section 60 of the *Contaminated Land Management Act 1997* (CLM Act) has been developed by the EPA. This strategy acknowledges the EPA's obligations to make information available to the public under *Government Information (Public Access) Act 2009*.

When a site is notified to the EPA, it may be accompanied by detailed site reports where the owner has been proactive in addressing the contamination and its source. However, often there is minimal information on the nature or extent of the contamination.

For some notifications, the information indicates the contamination is securely immobilised within the site, such as under a building or carpark, and is not currently causing any offsite consequences to the community or environment. Such sites would still need to be cleaned up, but this could be done in conjunction with any subsequent building or redevelopment of the land. These sites may not require intervention under the CLM Act, but could be dealt with through the planning and development consent process.

Where indications are that contamination is significant enough to warrant regulation having regard to the matters in section 12 of the CLM Act, the EPA may apply the regulatory provisions of the CLM Act to have the appropriate person (for example, the responsible polluter and/or landowner) investigate and remediate the site.

Where the EPA reasonably suspects that a pollution incident is occurring (or has occurred) at a premise, the EPA, as the appropriate regulatory authority, may choose to regulate the incident and any resulting contamination under the POEO Act by ordering the occupier or the owner to carry out certain actions.

As such, the sites notified to the EPA and presented in the following table are at various stages of the assessment and/or remediation process. Understanding the nature of the underlying contamination, its implications and implementing a remediation program where required, can take a considerable period of time. The tables provide an indication, in relation to each nominated site, as to the management status of that particular site. Further detailed information may be available from the EPA or the responsible landowner.

The following questions and answers may assist those interested in this issue:

Frequently asked questions

What is the difference between the "List of NSW Contaminated Sites Notified to the EPA" and the "Contaminated Land: Record of Notices"?

A site will be on the Contaminated Land: Record of Notices only if the EPA has issued a regulatory notice in relation to the site under the *Contaminated Land Management Act 1997*.

The sites appearing on this "List of NSW contaminated sites notified to the EPA" indicate that the notifiers consider that the sites are contaminated and warrant reporting to the EPA. However, the contamination may or may not be significant enough to warrant regulation by the EPA. The EPA needs to review and, if necessary, obtain more information before it can make a determination as to whether the site warrants regulation.

Suburb	Site Name	Site Address	Contamination Activity Type	EPA Site Management Class	Latitude	Longitude
KANAHOOKA	Former Smelter Site	Kanahooka ROAD	Metal Industry	Under assessment	-34.49406369	150.8227583
KANDOS	Cement Australia Kandos Cement Works	1 Jamison STREET	Other Industry	Regulation under CLM Act not required	-32.86399912	149.9779259
KANWAL	Former Bus and Truck Rental Yard	645-647 Pacific Highway HIGHWAY	Other Petroleum	Regulation under CLM Act not required	-33.26233802	151.4825469
KANWAL	Kanwal General Store and Fuel Supplies and Adjacent Land	68 and part of 70 Craigie AVENUE	Service Station	Contamination currently regulated under CLM Act	-33.263026	151.482125
KARIONG	Coles Express Kariong	6 Central Coast HIGHWAY	Service Station	Regulation under CLM Act not required	-33.43443192	151.2963401
KARIONG	Caltex Service Station	Lot 2 Langford DRIVE	Service Station	Regulation under CLM Act not required	-33.43934827	151.2935447
KARUAH	BP Roadhouse Karuah	403 Tarean ROAD	Service Station	Regulation under CLM Act not required	-32.65371781	151.9629963
KATOOMBA	Aldi Stores	201 Katoomba STREET	Service Station	Regulation under CLM Act not required	-33.71756625	150.3101649
KATOOMBA	Former Katoomba/Leura Gasworks	Megalong STREET	Gasworks	Contamination currently regulated under CLM Act	-33.71318559	150.3187284
KELLYVILLE	BP Service Station Kellyville	19-23 Windsor ROAD	Service Station	Regulation under CLM Act not required	-33.71280997	150.9590756
KELLYVILLE	Caltex Service Station	3-5 Windsor ROAD	Service Station	Regulation under CLM Act not required	-33.71436125	150.9602175
KELSO	Caltex Service Station Kelso	19 Sydney ROAD	Service Station	Regulation under CLM Act not required	-33.41904247	149.6023985
KELSO	BP Service Station (Reliance Petroleum)	63 Sydney ROAD	Service Station	Regulation under CLM Act not required	-33.41925328	149.6076677
KEMBLA GRANGE	ShawCor Australia	66 West Dapto ROAD	Other Petroleum	Regulation under CLM Act not required	-34.46875328	150.8106326
KEMBLAWARRA	Griffins Bay, Lake Illawarra	Shellharbour ROAD	Landfill	Regulation under CLM Act not required	-34.49653984	150.8943776
KEMPS CREEK	Caltex-branded Service Station	1163 Mamre ROAD	Service Station	Regulation under CLM Act not required	-33.86972102	150.7966074
KEMPSEY	Liberty (Former Mobil) Service Station	108-112 Smith STREET	Service Station	Regulation under CLM Act not required	-31.07492508	152.8431945
KEMPSEY	Former Mobil Depot	14 Hopetoun STREET	Other Petroleum	Regulation under CLM Act not required	-31.07603107	152.8350132
KEMPSEY	Mobil Depot	154 Belgrave STREET	Service Station	Regulation under CLM Act not required	-31.07965043	152.8326303
KEMPSEY	Shell Coles Express Service Station Kempsey	165 Smith STREET	Service Station	Regulation under CLM Act not required	-31.07036743	152.8461571
KEMPSEY	Kempsey Showground	19 Sea STREET	Unclassified	Contamination being managed via the planning process (EP&A Act)	-31.07334836	152.8308795
KEMPSEY	Former Shell Depot	43-51 Gladstone STREET	Other Petroleum	Regulation under CLM Act not required	-31.07500944	152.8346699
KENSINGTON	Footpath adjacent to 10-20 Anzac Parade	10-20 Anzac PARADE	Service Station	Regulation under CLM Act not required	-33.9032124	151.2237836
KENSINGTON	7-Eleven Kensington	135 Anzac PARADE	Service Station	Regulation under CLM Act not required	-33.91035885	151.2228537
KENSINGTON	Caltex Service Station	211-213 Anzac PARADE	Service Station	Regulation under CLM Act not required	-33.91460752	151.2251266
KENSINGTON	Former Ampol Service Station	76-82 Anzac PARADE	Service Station	Regulation under CLM Act not required	-33.9059246	151.2242891

Australian Government
Department of Defence

Defence Environmental Remediation Program

New South Wales

Property Identification Number	Property Name
0026	HMAS Albatross
0027	Beecroft Air Weapons Range
0030	HMAS Penguin
0034	NFI Chowder Bay
0042	Spectacle Island
0056	HMAS Watson
0058	HMAS Waterhen
0290	Cootamdundra Reserve Depot
0315	Blamey Barracks Kapooka
0329	Marrangarroo Army Depot
0336	Muswellbrook GRES Depot
0340	Adamstown MUD
0356	Singleton Military Area
0367	Moorebank Area
0375	Timor Barracks - Dundas
0382	Holsworthy Barracks
0396	Banksmeadow Depot
0402	Victoria Barracks - Paddington
0404	Lancer Barracks - Parramatta
0407	Randwick Barracks
0417	Tamworth GRES Depot
0884	Evans Head Air Weapons Range
0892	Orange AAFC
0895	Londonderry Parachute Drop Zone
0899	Defence Establishment Orchard Hills

0902	RAAF Base Richmond
0906	RAAF Base Wagga
0908	RAAF Base Williamtown
0909	Salt Ash Air Weapons Range
1022	Garden Island Precinct
1278	Myambat Ammunition/Explosives Depot
1319	Duckhole Hill
1404	Fleet Headquarters
1408	Defence Mulwala Facility Mulwala Project Website
1521	Point Perpendicular Lighthouse
3001	DNSDC Moorebank

Site	Address
Albion Park Fire and Rescue NSW	Airport Road, Albion Park, 2527
Alexandria Fire and Rescue NSW	189 Wyndham Street Alexandria
Argenton: Mines Rescue	533 lake Road, Argenton NSW 2284
Armidale Fire and Rescue NSW	10 Mann Street, Armidale, 2350
Bathurst Airport	P J Moodie Memorial Dr, Raglan NS
Blamey Barracks Kapooka	Kapooka Dr, Kapooka NSW 2661
Botany Bay area	
Botany Industrial Park	Dent Street, Botany, 2019
Currambene Creek	Currambene Creek
Deniliquin Fire and Rescue NSW	Cobb Highway, Deniliquin, 2710
Gold Coast Airport	Eastern Avenue, Coolangatta, QLD
Greenacre Fire and Rescue	1 and 1A Amarina Avenue
Hawkesbury River	
Heatherbrae: Total Fire Solutions	15 Giggins Rd, Heatherbrae NSW 23
HMAS Albatross	Nowra Hill, 2540
Holsworthy Barracks	Macarthur Drive, Holsworthy, 2173
Jervis Bay Range Facility / HMAS Creswell	Jervis Bay Territory, 2540
Kemps Creek NSW Rural Fire Service	245 Devonshire Road
Kurnell: Caltex	2 Solander St, Kurnell, 2231
Lake Macquarie	
Lake Toolooma	Heathcote National Park
Lithgow: Mines Rescue	3 Proto Ave, Lithgow NSW 2790
Londonderry TestSafe & Fire and Rescue NSW	667 The Northern Road, Londonde
Lord Howe Island	Lord Howe Island
Mulwala - Thales	Bayly St, Mulwala NSW 2647
Munmorah and Colongra Power Stations	Station Road, Colongra NSW 2262
Quirindi Airport	Quirindi NSW 2343
Richmond RAAF Base	Middleton Avenue, Richmond, 275
Rutherford: Truegain	62 Kyle St, Rutherford NSW 2320
Shoalhaven River	Shoalhaven River, 2541
Salt Ash Weapons Range	Salt Ash NSW

Appendix I Department of Defence Searches

Australian Government
Department of Defence

Detailed Environmental Investigation & Management Sites

Northern Territory	Queensland	New South Wales
Robertson Barracks	Army Aviation Centre Oakey	RAAF Base Williamtown
RAAF Base Darwin	RAAF Base Townsville	HMAS Albatross
RAAF Base Tindal	RAAF Base Amberley	RAAF Base Richmond
	Lavarack Barracks	RAAF Base Wagga
	HMAS Cairns	Holsworthy Barracks
		Singleton Military Area
		Blamey Barracks (Kapooka)



Western Australia

- HMAS Stirling
- RAAF Base Pearce
- Gingin Satellite Airfield
- Naval Communication Station Harold E Holt A & B
- RAAF Base Learmonth

South Australia

- RAAF Base Edinburgh

Victoria

- RAAF Base East Sale
- HMAS Cerberus
- Bandiana Military Area
- RAAF Williams (Laverton)

Jervis Bay Territory

- Jervis Bay Range Facility

Legend

Investigation sites are light grey

Management sites are orange

Preliminary Site Investigations

Where required, Defence conducts preliminary investigations to review the historical use and storage of legacy firefighting foams at Defence sites. The findings of preliminary investigations are used to determine if further, more detailed, environmental investigations into PFAS are necessary. Current and past Preliminary Site Investigations are listed below. Click on an investigation for further information.

Salt Ash Air Weapons Range - Complete

The Department of Defence has completed a Preliminary Site Investigation (PSI) on the Salt Ash Air Weapons Range, as part of a national environmental program to investigate and manage the presence of per- and poly- fluoroalkyl substances (PFAS), across the Defence estate.

The PSI involved a review of potential historical use, storage and disposal of legacy firefighting foam at the Range and included sampling of groundwater, surface water, soil and sediment. Sampling was primarily undertaken on the Range, with limited sampling undertaken in the surrounding area.

PFAS was only found in low concentrations and no exposure risks were identified. Based on the findings of the PSI, no further environmental investigations are required.

The full PSI report is available below as well as a Conceptual Site Mode, Sampling and Analysis Quality Plan and a factsheet that summarise the findings.

For further information contact the information line on 1800 714 139 or SaltAsh.Defence@aecom.com, or view the factsheet below.

Preliminary Site Investigation Report

Salt Ash Preliminary Site Investigation Report - Executive Summary - November 2018
AECOM - Report - PDF - 50KB

Salt Ash Preliminary Site Investigation Report - Report Body - November 2018
AECOM - Report - PDF - 80.2MB

Salt Ash Sampling and Analysis Quality Plan - November 2018
AECOM - Report - PDF - 15.8MB

Appendix J Heritage Data Base Searches

Search Results

1 result found.

Kemps Creek Natural Area Exeter Rd	Cecil Park, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Report Produced: Sat Feb 9 09:19:36 2019

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Search for NSW heritage

Return to search page where you can refine/broaden your search.

Statutory listed items

Information and items listed in the State Heritage Inventory come from a number of sources. This means that there may be several entries for the same heritage item in the database. For clarity, the search results have been divided into three sections.

- **Section 1** - contains Aboriginal Places declared by the **Minister for the Environment** under the National Parks and Wildlife Act. This information is provided by the Heritage Division.
- **Section 2** - contains heritage items listed by the **Heritage Council of NSW** under the NSW Heritage Act. This includes listing on the State Heritage Register, an Interim Heritage Order or protected under section 136 of the NSW Heritage Act. This information is provided by the Heritage Division.
- **Section 3** - contains items listed by **local councils** on Local Environmental Plans under the Environmental Planning and Assessment Act, 1979 and **State government agencies** under s.170 of the Heritage Act. This information is provided by local councils and State government agencies.

Section 1. Aboriginal Places listed under the National Parks and Wildlife Act.

Your search did not return any matching results.

Section 2. Items listed under the NSW Heritage Act.

Your search did not return any matching results.

Section 3. Items listed by Local Government and State Agencies.

Your search returned 4 records.

Item name	Address	Suburb	LGA	Information source
Bayley Park - House	919-929 Mamre Road	Kemps Creek	Penrith	LGOV
Brick Farmhouse	282 Aldington Road	Kemps Creek	Penrith	LGOV
Gateposts to Colesbrook	269-285 Mamre Road	Kemps Creek	Penrith	LGOV
The Fleurs Radio Telescope Site	885(a) Mamre Road	Kemps Creek	Penrith	LGOV

There was a total of 4 records matching your search criteria.

Key:
LGA = Local Government Area
GAZ= NSW Government Gazette (statutory listings prior to 1997), HGA = Heritage Grant Application, HS = Heritage Study, LGOV = Local Government, SGOV = State Government Agency.
Note: While the Heritage Division seeks to keep the Inventory up to date, it is reliant on State agencies and local councils to provide their data. Always check with the relevant State agency or local council for the most up-to-date information.

Appendix K Laboratory Analytical Reports

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

CERTIFICATE OF ANALYSIS 210739

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	Rohan Hammond, M Noujaim
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**54963, Mamre Road Kemps Creek**
Number of Samples	4 Soil
Date samples received	05/02/2019
Date completed instructions received	05/02/2019

Analysis Details

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

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

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

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

Report Details

Date results requested by	11/02/2019
Date of Issue	11/02/2019

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

Asbestos Approved By
Analysed by Asbestos Approved Identifier: Matt Tang
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Giovanni Agosti, Group Technical Manager
Jeremy Faircloth, Organics Supervisor
Lucy Zhu, Asbestos Analyst
Priya Samarawickrama, Senior Chemist
Steven Luong, Senior Chemist

Authorised By



Jacinta Hurst, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil				
Our Reference		210739-1	210739-3	210739-4
Your Reference	UNITS	QC20190130MN_01	QC20190130MN_03	QC20190130MN_04
Type of sample		Soil	Soil	Soil
Date extracted	-	06/02/2019	06/02/2019	06/02/2019
Date analysed	-	07/02/2019	07/02/2019	07/02/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	89	107	104

svTRH (C10-C40) in Soil				
Our Reference		210739-1	210739-3	210739-4
Your Reference	UNITS	QC20190130MN_01	QC20190130MN_03	QC20190130MN_04
Type of sample		Soil	Soil	Soil
Date extracted	-	06/02/2019	06/02/2019	06/02/2019
Date analysed	-	07/02/2019	07/02/2019	07/02/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	170	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	210	<100
TRH >C_{34} -C_{40}	mg/kg	<100	170	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	380	<50
Surrogate o-Terphenyl	%	88	84	91

PAHs in Soil		
Our Reference		210739-3
Your Reference	UNITS	QC20190130MN_03
Type of sample		Soil
Date extracted	-	06/02/2019
Date analysed	-	07/02/2019
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	0.1
Pyrene	mg/kg	0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
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	<0.1
Total +ve PAH's	mg/kg	0.2
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 p-Terphenyl-d14	%	87

Organochlorine Pesticides in soil			
Our Reference		210739-3	210739-4
Your Reference	UNITS	QC20190130MN_03	QC20190130MN_04
Type of sample		Soil	Soil
Date extracted	-	06/02/2019	06/02/2019
Date analysed	-	07/02/2019	07/02/2019
HCB	mg/kg	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1
Surrogate TCMX	%	88	88

PCBs in Soil		
Our Reference		210739-3
Your Reference	UNITS	QC20190130MN_03
Type of sample		Soil
Date extracted	-	06/02/2019
Date analysed	-	07/02/2019
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 TCLMX	%	88

Acid Extractable metals in soil				
Our Reference		210739-1	210739-3	210739-4
Your Reference	UNITS	QC20190130MN_01	QC20190130MN_03	QC20190130MN_04
Type of sample		Soil	Soil	Soil
Date prepared	-	06/02/2019	06/02/2019	06/02/2019
Date analysed	-	06/02/2019	06/02/2019	06/02/2019
Arsenic	mg/kg	10	7	<4
Cadmium	mg/kg	0.6	<0.4	<0.4
Chromium	mg/kg	23	18	14
Copper	mg/kg	27	45	14
Lead	mg/kg	74	36	12
Mercury	mg/kg	<0.1	0.1	<0.1
Nickel	mg/kg	14	13	5
Zinc	mg/kg	91	85	13

Misc Soil - Inorg		
Our Reference		210739-3
Your Reference	UNITS	QC20190130MN_03
Type of sample		Soil
Date prepared	-	06/02/2019
Date analysed	-	06/02/2019
Total Phenolics (as Phenol)	mg/kg	<5

Moisture				
Our Reference		210739-1	210739-3	210739-4
Your Reference	UNITS	QC20190130MN_01	QC20190130MN_03	QC20190130MN_04
Type of sample		Soil	Soil	Soil
Date prepared	-	06/02/2019	06/02/2019	06/02/2019
Date analysed	-	07/02/2019	07/02/2019	07/02/2019
Moisture	%	9.7	10	16

Asbestos ID - soils NEPM - ASB-001		
Our Reference		210739-3
Your Reference	UNITS	QC20190130MN_03
Type of sample		Soil
Date analysed	-	06/02/2019
Sample mass tested	g	742.36
Sample Description	-	Brown coarse-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	–
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.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	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.

Method ID	Methodology Summary
Org-003	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-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. 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-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	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-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-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-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	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)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	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)-BTEX 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-6	[NT]
Date extracted	-			06/02/2019	[NT]	[NT]	[NT]	[NT]	06/02/2019	[NT]
Date analysed	-			07/02/2019	[NT]	[NT]	[NT]	[NT]	07/02/2019	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	98	[NT]
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	[NT]	[NT]	96	[NT]
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	[NT]	[NT]	96	[NT]
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	100	[NT]
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	80	[NT]	[NT]	[NT]	[NT]	115	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			06/02/2019	[NT]	[NT]	[NT]	[NT]	06/02/2019	[NT]
Date analysed	-			07/02/2019	[NT]	[NT]	[NT]	[NT]	07/02/2019	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	103	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	93	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	103	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	93	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
Surrogate o-Terphenyl	%		Org-003	83	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date extracted	-			06/02/2019	[NT]	[NT]	[NT]	[NT]	06/02/2019	[NT]
Date analysed	-			07/02/2019	[NT]	[NT]	[NT]	[NT]	07/02/2019	[NT]
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	[NT]	[NT]	[NT]	[NT]	109	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	90	[NT]	[NT]	[NT]	[NT]	85	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date extracted	-			06/02/2019	[NT]	[NT]	[NT]	[NT]	06/02/2019	[NT]
Date analysed	-			07/02/2019	[NT]	[NT]	[NT]	[NT]	07/02/2019	[NT]
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	87	[NT]
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-005	87	[NT]	[NT]	[NT]	[NT]	104	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date extracted	-			06/02/2019	[NT]	[NT]	[NT]	[NT]	06/02/2019	[NT]
Date analysed	-			07/02/2019	[NT]	[NT]	[NT]	[NT]	07/02/2019	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCLMX	%		Org-006	87	[NT]	[NT]	[NT]	[NT]	94	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date prepared	-			06/02/2019	[NT]	[NT]	[NT]	[NT]	06/02/2019	[NT]
Date analysed	-			06/02/2019	[NT]	[NT]	[NT]	[NT]	06/02/2019	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	110	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	106	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			06/02/2019	[NT]	[NT]	[NT]	[NT]	06/02/2019	[NT]
Date analysed	-			06/02/2019	[NT]	[NT]	[NT]	[NT]	06/02/2019	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	[NT]	[NT]	[NT]	[NT]	100	[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.

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; 60-140% for organics (+/-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.

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.

210739 RS

Enviro Sample NSW

To: Nibha Vaidya; COC NSW
Cc: Charl Du Preez
Subject: RE: 5 DAY TAT - FW: Schedule of Analysis - Mamre Road 54963

From: Rohan Hammond [mailto:RHammond@jbsg.com.au]
Sent: Friday, 1 February 2019 9:59 AM
To: Nibha Vaidya
Cc: sample_syd_1@eurofins.com.au; Milad Noujaim
Subject: FW: Schedule of Analysis - Mamre Road 54963

EXTERNAL EMAIL*

Hi Nibha,

Just following up. There is also a potential ACM frag from TP01 which was missed on the COC. Can you please analyse for presence/absence of ACM.

Additionally, please forward on to Envirolab (Sydney):

1. QC20190130MN_01
2. QC20190130MN_02
3. QC20190130MN_03
4. QC20190130MN_04

With note to contact me upon receipt.
Rohan.

From: Rohan Hammond
Sent: Friday, 1 February 2019 9:53 AM
To: 'Nibha Vaidya' <NibhaVaidya@eurofins.com>
Cc: 'Sample Receipt 1 Syd' <sample_syd_1@eurofins.com.au>; Milad Noujaim <mnoujaim@jbsg.com.au>
Subject: Schedule of Analysis - Mamre Road 54963

Hi Nibha,

Please see attached COC and schedule of analysis for samples received on 29 and 31 January, job number 54963.

Please feel free to have sample receipt call Milda (0401230032) to discuss any discrepancies with sample jars/COCs. For any queries regarding analysis, please contact me.

Regards,

Rohan Hammond | 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: 0430 379 445 | E: rhammond@jbsg.com.au | W: www.jbsg.com.au
Contaminated Land | Groundwater Remediation | Auditing and Compliance | Assessments and Approvals | Occupational Hygiene and Monitoring

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

Job No: 210739

Date Received: 4/2/19
Time Received: 14:25
Received by: RS
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Sampled by: Milad Noujaim

Received by: Luca D.
Eurofins MGT
01-02-19 11:21 AM

638491

JBS&G Australia Pty Ltd
Project: 54983
Project Name: Moreno Road Kemps Creek
Turn around: Standard

Contact: mnoujaim@jbsg.com.au
mnoujaim@jbsg.com.au

Sample Name	Depth	Matrix	Date	Containers				Analysis											
				250 mL Jar	500 mL Jar	250 mL Jar													
TP02	0-0.15	Soil	30/01/2019	1	1			1		1		1		1				1	1
TP07	0.2-0.3	Soil	30/01/2019	1	1														
TP02	1.0-1.1	Soil	30/01/2019	1	1			1											1
TP01	0.2-0.3	Soil	30/01/2019	1	1			1		1		1		1		1			1
TP01	0.4-0.5	Soil	30/01/2019	1	1			1		1		1		1					
TP01	1-1.1	Soil	30/01/2019	1	1														1
TP03	0-0.15	Soil	30/01/2019	1	1			1		1		1		1		1		1	1
TP03	1-1.1	Soil	30/01/2019	1	1														
TP05	0-0.1	Soil	30/01/2019	1	1			1											
TP05	0.2-0.3	Soil	30/01/2019	1	1			1		1		1		1					
TP05	1.0-1.1	Soil	30/01/2019	1	1														
TP05	1.5-1.6	Soil	30/01/2019	1														1	1
TP11	0-0.1	Soil	30/01/2019	1	1			1		1				1					1
TP11	0.3-0.4	Soil	30/01/2019	1	1														
TP11	1.1-1.2	Soil	30/01/2019	1	1			1											
TP11	1.7-1.8	Soil	30/01/2019	2															
TP12	0-0.1	Soil	30/01/2019	1	1			1		1				1		1			
TP12	1.0-1.1	Soil	30/01/2019	1	1			1											
TP12	1.8-1.9	Soil	30/01/2019	1															1
TP13	0-0.1	Soil	30/01/2019	1	1			1		1		1		1				1	1
TP13	1.0-1.1	Soil	30/01/2019	1	1			1											
TP13	1.8-1.9	Soil	30/01/2019	1															
TP09	0-0.1	Soil	30/01/2019	1	1			1		1									
TP09	1.0-1.1	Soil	30/01/2019	1	1														
TP09	1.7-1.8	Soil	30/01/2019	1				1											
TP18	0-0.1	Soil	30/01/2019	1	1			1		2		1		1				1	1
TP18	1.0-1.1	Soil	30/01/2019	1	1			1											
TP18	1.7-1.8	Soil	30/01/2019	1															1
TP17	0-0.1	Soil	30/01/2019	1	1														
TP17	0.3-0.4	Soil	30/01/2019	1	1			1		1		1		1					
TP17	1.0-1.1	Soil	30/01/2019	1	1														
TP17	1.7-1.8	Soil	30/01/2019	1				1											
TP16	0-0.1	Soil	30/01/2019	1	1			1						1					
TP16	1.0-1.1	Soil	30/01/2019	1	1			1											
TP16	1.7-1.8	Soil	30/01/2019	1															
TP20	0-0.1	Soil	31/01/2019	1	1			1											
TP20	0.4-0.5	Soil	31/01/2019	1	1			1		1									
TP20	1.0-1.1	Soil	31/01/2019	1	1														
TP20	1.7-1.8	Soil	31/01/2019	1															1
TP21	0-0.1	Soil	31/01/2019	1	1			1										1	1
TP21	0.4-0.5	Soil	31/01/2019	1	1			1		1									
TP21	1.0-1.1	Soil	31/01/2019	1	1														
TP21	1.7-1.8	Soil	31/01/2019	2															
TP22	0-0.1	Soil	31/01/2019	1	1			1		1		1		1					
TP22	0.6-0.7	Soil	31/01/2019	1	1			1											
TP22	1.5-1.6	Soil	31/01/2019	1														1	1
TP24	0-0.1	Soil	31/01/2019	1	1			1											1
TP24	0.2-0.3	Soil	31/01/2019	1	1			1		1		1							
TP24	1.0-1.1	Soil	31/01/2019	1	1														
TP24	1.7-1.8	Soil	31/01/2019	1															
TP28	0-0.1	Soil	31/01/2019	1	1			1				1							
TP28	0.4-0.5	Soil	31/01/2019	1	1			1		1				1					
TP28	1.0-1.1	Soil	31/01/2019	1															
TP28	1.7-1.8	Soil	31/01/2019	1															
TP32	0-0.1	Soil	31/01/2019	1	1			1		1		1							
TP32	0.7-0.8	Soil	31/01/2019	1	1														1
TP32	1.7-1.8	Soil	31/01/2019	1				1										1	1
TP34	0-0.1	Soil	31/01/2019	1	1			1											1
TP34	0.4-0.5	Soil	31/01/2019	1	1			1		1									
TP34	1-1.1	Soil	31/01/2019	1															
TP34	1.7-1.8	Soil	31/01/2019	1															
TP30	0-0.1	Soil	31/01/2019	1	1			1		1		1		1					
TP30	1.0-1.1	Soil	31/01/2019	1	1			1										1	1
TP30	1.7-1.8	Soil	31/01/2019	1															
TP26	0-0.1	Soil	31/01/2019	1	1			1				1							
TP26	0.4-0.5	Soil	31/01/2019	1	1			1		1									
TP26	1.5-1.6	Soil	31/01/2019	1															
TP31	0-0.1	Soil	31/01/2019	1	1			1		1									
TP31	0.4-0.5	Soil	31/01/2019	1	1													1	1
TP31	1.5-1.6	Soil	31/01/2019	1				1											
TP33	0-0.1	Soil	31/01/2019	1	1			1		1									
TP33	0.8-0.9	Soil	31/01/2019	1	1			1											
TP33	1.7-1.8	Soil	31/01/2019	1															
1 * QA20190130MN_01	-	Soil	30/01/2019	1	1			1		1									
2 * QA20190130MN_02	-	Soil	30/01/2019	1	1														
3 * QA20190130MN_03	-	Soil	30/01/2019	1	1			1		1		1		1		1			
TP00	0-0.15	Soil	30/01/2019	1								1		1					
TP00	0.2-0.3	Soil	30/01/2019	1															
TP00	0.4-0.5	Soil	30/01/2019	1															1
TP00	1-1.1	Soil	30/01/2019	1														1	1
TP04	0-0.1	Soil	30/01/2019	1				1		1		1							1
TP04	0.2-0.3	Soil	30/01/2019	1				1		1		1		1		1			
TP04	1.0-1.1	Soil	30/01/2019	1															
TP05	0-0.2	Soil	29/01/2019	1	1			1		2		1		1		1			1
TP06	0.8-0.9	Soil	29/01/2019	1	1														
TP07	0-0.1	Soil	29/01/2019	1	1			1		1		1		1				1	1
TP07	0.4-0.5	Soil	29/01/2019	1	1														
TP07	1.3-1.4	Soil	29/01/2019	1															
TP15	0-0.1	Soil	30/01/2019	1	1														
TP15	0.3-0.4	Soil	30/01/2019	1	1													1	1
TP15	1.0-1.1	Soil	30/01/2019	1															1
TP15	1.7-1.8	Soil	30/01/2019	1															
MW01	0-0.2	Soil	29/01/2019	1	1							1							1
MW01	0.4-0.5	Soil	29/01/2019	1	1														
MW01	1-1.1	Soil	29/01/2019	1	1											1			1
MW01	1.5-1.6	Soil	29/01/2019	1	1													1	1
MW01	2-2.1	Soil	29/01/2019	1	1														1
MW01	5.5-5.6	Soil	29/01/2019	1															
MW02	0-0.1	Soil	29/01/2019	1	1													1	1
MW02	0.4-0.5	Soil	29/01/2019	1	1													1	1
MW02	1.2-1.3	Soil	29/01/2019	1	1			1		1									
MW02	1.9-2.0	Soil	29/01/2019	1	1														1
MW02	3.0-3.1	Soil	29/01/2019	1	1													1	1
MW02	6.0-6.1	Soil	29/01/2019	1	1														1
MW03	0-0.2	Soil	29/01/2019	1	1													1	1
MW03	0.4-0.5	Soil	29/01/2019	1	1														1
MW03	1.5-1.6	Soil	29/01/2019	1	1													1	1
MW03	2.9-3.0	Soil	29/01/2019	1	1													1	1
4 * QA20190130MN_04	-	Soil	30/01/2019	1	1			1		1		1							
Trip Spike/Blank (29-1)	-	Soil	29/01/2019	1		1		1											
Trip Spike/Blank (31-1)	-	Soil	31/01/2019	1		1		1											
Rinsate (29-1)	-	Soil	29/01/2019	1		1		1		1		1		1					
Rinsate (30-1)	-	Soil	30/01/2019	1		1		1		1		1		1					
Rinsate (31-1)	-	Soil	31/01/2019	1		1		1		1		1		1					

210739

	Bore/Pit	Depth	Matrix	Date Sampled	250 mL Jar	500 mL Base	Bottles/Vials	Metals	BTEX	TRH/BTEX	OCP	PAH/Phenols	Asbestos	PCBs	VOCs	ASLP/TCLP	B20	L2	SH&CEC
1	QC20150130MN_01	-	Soil	30/01/2019	1	1		1		1									
2	QC20150130MN_02	-	Soil	30/01/2019	1	1													
3	QC20150130MN_03	-	Soil	30/01/2019	1	1		1		1	1	1	1	1					
4	QC20150130MN_04	-	Soil	30/01/2019	1	1		1		1	1								

Jessica Hie 210739

From: Rohan Hammond <RHammond@jbsg.com.au>
Sent: Tuesday, 5 February 2019 8:34 AM
To: Jessica Hie
Subject: RE: Mamre Rd Kemps Creek

Hi Jessica,

Thanks for that, analysis is as follows:

Hole	Depth	Matrix	Date	250 mL Jar	500 mL Bag	Bottles/vials	Metals	BTEX	TRH/BTEX	OCPs	PAH/Phenols
QC20190130MN_01	-	Soil	30/01/2019	1	1		1		1		
QC20190130MN_02	-	Soil	30/01/2019	1	1						
QC20190130MN_03	-	Soil	30/01/2019	1	1		1		1	1	1
QC20190130MN_04	-	Soil	30/01/2019	1	1		1		1	1	

From: Jessica Hie <JHie@envirolab.com.au>
Sent: Monday, 4 February 2019 6:38 PM
To: Rohan Hammond <RHammond@jbsg.com.au>
Cc: Milad Noujaim <mnoujaim@jbsg.com.au>
Subject: Mamre Rd Kemps Creek

Hi Rohan,

We have received instructions in the attached email to contact you upon sample receipt of this job.
But can we just proceed with the testing marked on the 2nd page?

Regards,

Jessica Hie | Customer Service / Asbestos Analyst | Envirolab Services Pty Ltd
(Monday to Friday 11am to 7pm)

Great Science. Great Service.

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

SAMPLE RECEIPT ADVICE

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	Rohan Hammond, M Noujaim

Sample Login Details

Your reference	54963, Mamre Road Kemps Creek
Envirolab Reference	210739
Date Sample Received	05/02/2019
Date Instructions Received	05/02/2019
Date Results Expected to be Reported	11/02/2019

Sample Condition

Samples received in appropriate condition for analysis	YES
No. of Samples Provided	4 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	19.7
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

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

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticidesin soil	PCBsin Soil	Acid Extractable metalsin soil	Misc Soil - Inorg	Asbestos ID - soils NEPM - ASB-001	On Hold
QC20190130MN_01	✓	✓				✓			
QC20190130MN_02									✓
QC20190130MN_03	✓	✓	✓	✓	✓	✓	✓	✓	
QC20190130MN_04	✓	✓		✓		✓			

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.

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

CERTIFICATE OF ANALYSIS 210811

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	Rohan Hammond, M Noujaim
Address	Level 1, 50 Margaret St, Sydney, NSW, 2000

Sample Details

Your Reference	**54963, Mamre Road Kemps Creek**
Number of Samples	1 Water
Date samples received	05/02/2019
Date completed instructions received	05/02/2019

Analysis Details

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

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

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

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

Report Details

Date results requested by	12/02/2019
Date of Issue	12/02/2019

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

Results Approved By
Giovanni Agosti, Group Technical Manager
Jeremy Faircloth, Organics Supervisor
Priya Samarawickrama, Senior Chemist
Steven Luong, Senior Chemist

Authorised By

Jacinta Hurst, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water		
Our Reference		210811-1
Your Reference	UNITS	QA20190201
Date Sampled		01/02/2019
Type of sample		Water
Date extracted	-	06/02/2019
Date analysed	-	07/02/2019
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	95
Surrogate toluene-d8	%	98
Surrogate 4-BFB	%	93

svTRH (C10-C40) in Water		
Our Reference	UNITS	210811-1
Your Reference		QA20190201
Date Sampled		01/02/2019
Type of sample		Water
Date extracted	-	06/02/2019
Date analysed	-	06/02/2019
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
TRH >C_{10} - C_{16}	µg/L	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50
TRH >C_{16} - C_{34}	µg/L	<100
TRH >C_{34} - C_{40}	µg/L	<100
Surrogate o-Terphenyl	%	84

PAHs in Water - Low Level		
Our Reference	UNITS	210811-1
Your Reference		QA20190201
Date Sampled		01/02/2019
Type of sample		Water
Date extracted	-	06/02/2019
Date analysed	-	07/02/2019
Naphthalene	µg/L	<0.2
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	87

Total Phenolics in Water		
Our Reference		210811-1
Your Reference	UNITS	QA20190201
Date Sampled		01/02/2019
Type of sample		Water
Date extracted	-	08/02/2019
Date analysed	-	08/02/2019
Total Phenolics (as Phenol)	mg/L	<0.05

HM in water - dissolved		
Our Reference	UNITS	210811-1
Your Reference		QA20190201
Date Sampled		01/02/2019
Type of sample		Water
Date prepared	-	06/02/2019
Date analysed	-	06/02/2019
Arsenic-Dissolved	µg/L	3
Cadmium-Dissolved	µg/L	0.3
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	1
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	7
Zinc-Dissolved	µg/L	26

Miscellaneous Inorganics		
Our Reference	UNITS	210811-1
Your Reference		QA20190201
Date Sampled		01/02/2019
Type of sample		Water
Date prepared	-	11/02/2019
Date analysed	-	11/02/2019
pH	pH Units	6.6
Electrical Conductivity	µS/cm	23,000
Chloride, Cl	mg/L	8,300
Sulphate, SO4	mg/L	930
Bicarbonate Alkalinity as $CaCO_3$	mg/L	1,200
Total Alkalinity as $CaCO_3$	mg/L	1,200

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-006	Alkalinity - determined titrimetrically in accordance with APHA latest edition, 2320-B.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Alternatively determined by colourimetry/turbidity using Discrete Analyer.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS.
Org-003	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-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-013	Water samples are analysed directly by purge and trap GC-MS.
Org-016	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)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			06/02/2019	[NT]	[NT]	[NT]	[NT]	06/02/2019	[NT]
Date analysed	-			07/02/2019	[NT]	[NT]	[NT]	[NT]	07/02/2019	[NT]
TRH C_6 - C_9	µg/L	10	Org-016	<10	[NT]	[NT]	[NT]	[NT]	96	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	[NT]	[NT]	[NT]	[NT]	96	[NT]
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	93	[NT]
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-016	95	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate toluene-d8	%		Org-016	99	[NT]	[NT]	[NT]	[NT]	88	[NT]
Surrogate 4-BFB	%		Org-016	89	[NT]	[NT]	[NT]	[NT]	94	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			06/02/2019	[NT]	[NT]	[NT]	[NT]	06/02/2019	[NT]
Date analysed	-			06/02/2019	[NT]	[NT]	[NT]	[NT]	06/02/2019	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	87	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	70	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	87	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	70	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	94	[NT]
Surrogate o-Terphenyl	%		Org-003	126	[NT]	[NT]	[NT]	[NT]	105	[NT]

QUALITY CONTROL: PAHs in Water - Low Level					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			06/02/2019	[NT]	[NT]	[NT]	[NT]	06/02/2019	[NT]
Date analysed	-			07/02/2019	[NT]	[NT]	[NT]	[NT]	07/02/2019	[NT]
Naphthalene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	71	[NT]
Acenaphthylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	83	[NT]
Phenanthrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	79	[NT]
Anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	88	[NT]	[NT]	[NT]	[NT]	78	[NT]

QUALITY CONTROL: Total Phenolics in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			08/02/2019	[NT]	[NT]	[NT]	[NT]	08/02/2019	[NT]
Date analysed	-			08/02/2019	[NT]	[NT]	[NT]	[NT]	08/02/2019	[NT]
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	<0.05	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			06/02/2019	[NT]	[NT]	[NT]	[NT]	06/02/2019	[NT]
Date analysed	-			06/02/2019	[NT]	[NT]	[NT]	[NT]	06/02/2019	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	[NT]	[NT]	83	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			11/02/2019	[NT]	[NT]	[NT]	[NT]	11/02/2019	[NT]
Date analysed	-			11/02/2019	[NT]	[NT]	[NT]	[NT]	11/02/2019	[NT]
pH	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	102	[NT]
Electrical Conductivity	µS/cm	1	Inorg-002	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Chloride, Cl	mg/L	1	Inorg-081	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Bicarbonate Alkalinity as $CaCO_3$	mg/L	5	Inorg-006	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Total Alkalinity as $CaCO_3$	mg/L	5	Inorg-006	<5	[NT]	[NT]	[NT]	[NT]	115	[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.

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; 60-140% for organics (+/-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.

Report Comments

PH: sample analysed out holding time as client's request.

JBS&G Australia Pty Ltd
Project: 54963
Project Name: Mamre Road Kemps Creek
Turn around Standard

Contact: rhammond@jbsg.com.au
mnoujaim@jbsg.com.au

Sampled by: Milad Noujaim

#638673

Sample Name				Containers			Analysis													
Hole	Depth	Matrix	Date	250 mL Jar	500 mL Bag	Bottles/vials	Metals	BTEX	TRH/BTEX	OCPs	PAH (LL)/Phenols	Asbestos	PCBs	% Clay	ASLP/TCLP	B20	L2	Alkalinity (total and bicarbonate)	pH & EC
TP10	0-0.1	Soil	1/02/2019	1	1		1	1		1	1								
TP10	0.4-0.5	Soil	1/02/2019	1	1		1												
TP14	0-0.1	Soil	1/02/2019	1	1		1	1	1	1									
TP14	0.4-0.5	Soil	1/02/2019	1	1														
TP19	0-0.1	Soil	1/02/2019	1	1		1	1			1								
TP19	0.4-0.5	Soil	1/02/2019	1	1														
TP23	0-0.1	Soil	1/02/2019	1	1		1		1	1	1								
TP23	0.4-0.5	Soil	1/02/2019	1	1														
TP25	0-0.1	Soil	1/02/2019	1	1		1												
TP25	0.4-0.5	Soil	1/02/2019	1	1														
TP27	0-0.1	Soil	1/02/2019	1	1		1	1											
TP27	0.4-0.5	Soil	1/02/2019	1	1														
TP24	0-0.1	Soil	1/02/2019	1	1		1												
TP24	0.4-0.5	Soil	1/02/2019	1	1			1											
TP08	0-0.1	Soil	1/02/2019	1	1		1	1											
TP08	0.4-0.5	Soil	1/02/2019	1	1														
MW01	-	Water	1/02/2019			1	1		1		1							1	1
MW02	-	Water	1/02/2019			1	1		1		1							1	1
MW03	-	Water	1/02/2019			1	1		1		1							1	1
QA20190201	-	Water	1/02/2019			1	1		1		1							1	1
QC20190201	-	Soil	1/02/2019			1													
Trip Spike/Blank (1-2)	-	Soil	1/02/2019			1		1											
Rinsate (1-2)	-	Soil	1/02/2019			1	1		1	1	1								

* Please forward QC20190201 to Envirolab

Ulong 2/2 11.32am Eurofins Mgt 2.23°C

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

Job No: 210811

Date Received: 5.2.19
Time Received: 12:17
Received by: ID
Temp: Cool/Ambient 10.7°C
Cooling: Ice/Icepack
Security: Intact/Broken/None

Received: Tanya Duffy

Andrew Fitzsimons

From: Rohan Hammond <RHammond@jbsg.com.au>
Sent: Wednesday, 6 February 2019 8:56 AM
To: Andrew Fitzsimons
Subject: RE: Sample Receipt for 210811 54963, Mamre Road Kemps Creek

Thanks Andrew,

Can we please add the following analytes to that sample:

- pH, Chloride and Sulphate

From: Andrew Fitzsimons <AFitzsimons@envirolab.com.au>
Sent: Tuesday, 5 February 2019 7:17 PM
To: AdminNSW <adminNSW@jbsg.com.au>; Rohan Hammond <RHammond@jbsg.com.au>; Milad Noujaim <mnoujaim@jbsg.com.au>
Subject: Sample Receipt for 210811 54963, Mamre Road Kemps Creek

Please refer to attached for:
a copy of the COC/paperwork received from you
a copy of our Sample Receipt Advice (SRA)
Please open and read the SRA as it contains important information.
Please let the lab know immediately if there are any issues.

Results will be available by 6.30pm on the date indicated.

PLEASE NOTE COMBO PRICES WILL ONLY APPLY IF COMBOS ARE SELECTED ON COC.

We have a new reporting format and would welcome your feedback. Sydney@envirolab.com.au

Please note that subcontracted testing or non routine testing may take significantly longer than just the standard 5 day TAT, contact the lab to get an approximate due date.

Enquiries should be made directly to:
customerservice@envirolab.com.au

Regards

Envirolab Services
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Regards,

Andrew Fitzsimons | Customer Service & Chemist | Envirolab Services Pty Ltd

Great Science, Great Service.

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

SAMPLE RECEIPT ADVICE

Client Details

Client	JBS & G (NSW & WA) Pty Ltd
Attention	Rohan Hammond, M Noujaim

Sample Login Details

Your reference	54963, Mamre Road Kemps Creek
Envirolab Reference	210811
Date Sample Received	05/02/2019
Date Instructions Received	05/02/2019
Date Results Expected to be Reported	12/02/2019

Sample Condition

Samples received in appropriate condition for analysis	YES
No. of Samples Provided	1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10.7
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

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

Sample ID	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water - Low Level	Total Phenolicsin Water	HM in water - dissolved	pH	Electrical Conductivity	Chloride, Cl	Sulphate, SO4	Bicarbonate Alkalinity as CaCO3	Total Alkalinity as CaCO3
QA20190201	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.

JBS&G Australia Pty Ltd
Project: **54963**
Project Name: **Mamre Road Kemps Creek**
Turn around **Standard**

Contact: rhammond@jbsg.com.au
mnoujaim@jbsg.com.au

Sampled by: Milad Noujaim

Received by: Luca D.
Eurofins mat
01-02-19 11:21 AM # 638491

Sample Name				Containers			Analysis												
Hole	Depth	Matrix	Date	250 mL Jar	500 mL Bag	Bottles/vials	Metals	BTEX	TRH/BTEX	OCPs	PAH/Phenols	Asbestos	PCBs	% Clay	ASLP/TCLP	B20	L2	pH & EC
TP02	0-0.15	Soil	30/01/2019	1	1		1		1	1	1	1				1	1	
TP02	0.2-0.3	Soil	30/01/2019	1	1													1
TP02	1.0-1.1	Soil	30/01/2019	1	1		1											1
TP01	0.2-0.3	Soil	30/01/2019	1	1		1		1	1	1	1	1					
TP01	0.4-0.5	Soil	30/01/2019	1	1		1											1
TP01	1-1.1	Soil	30/01/2019	1	1									1		1	1	
TP03	0-0.15	Soil	30/01/2019	1	1		1		1	1	1	1	1					
TP03	1-1.1	Soil	30/01/2019	1	1													
TP05	0-0.1	Soil	30/01/2019	1	1		1					1						
TP05	0.2-0.3	Soil	30/01/2019	1	1		1		1	1	1	1						
TP05	1.0-1.1	Soil	30/01/2019	1	1											1	1	
TP05	1.5-1.6	Soil	30/01/2019	1														1
TP11	0-0.1	Soil	30/01/2019	1	1		1		1		1	1						
TP11	0.3-0.4	Soil	30/01/2019	1	1													
TP11	1.1-1.2	Soil	30/01/2019	1	1		1											
TP11	1.7-1.8	Soil	30/01/2019	1														
TP12	0-0.1	Soil	30/01/2019	1	1		1		1			1		1				
TP12	1.0-1.1	Soil	30/01/2019	1	1		1											
TP12	1.8-1.9	Soil	30/01/2019	1														1
TP13	0-0.1	Soil	30/01/2019	1	1		1		1		1	1				1	1	
TP13	1.0-1.1	Soil	30/01/2019	1	1		1											
TP13	1.8-1.9	Soil	30/01/2019	1														
TP09	0-0.1	Soil	30/01/2019	1	1		1		1									
TP09	1.0-1.1	Soil	30/01/2019	1	1													
TP09	1.7-1.8	Soil	30/01/2019	1			1											
TP18	0-0.1	Soil	30/01/2019	1	1		1		1	1	1	1				1	1	
TP18	1.0-1.1	Soil	30/01/2019	1	1		1											
TP18	1.7-1.8	Soil	30/01/2019	1														1
TP17	0-0.1	Soil	30/01/2019	1	1		1											
TP17	0.3-0.4	Soil	30/01/2019	1	1		1		1	1	1	1						
TP17	1.0-1.1	Soil	30/01/2019	1	1													
TP17	1.7-1.8	Soil	30/01/2019	1			1											
TP16	0-0.1	Soil	30/01/2019	1	1		1		1			1						
TP16	1.0-1.1	Soil	30/01/2019	1	1		1											
TP16	1.7-1.8	Soil	30/01/2019	1														
TP20	0-0.1	Soil	31/01/2019	1	1		1											
TP20	0.4-0.5	Soil	31/01/2019	1	1		1		1									
TP20	1.0-1.1	Soil	31/01/2019	1	1													
TP20	1.7-1.8	Soil	31/01/2019	1														1
TP21	0-0.1	Soil	31/01/2019	1	1		1									1	1	
TP21	0.4-0.5	Soil	31/01/2019	1	1		1		1									
TP21	1.0-1.1	Soil	31/01/2019	1	1													
TP21	1.7-1.8	Soil	31/01/2019	1														
TP22	0-0.1	Soil	31/01/2019	1	1		1		1	1	1							
TP22	0.6-0.7	Soil	31/01/2019	1	1		1											
TP22	1.5-1.6	Soil	31/01/2019	1												1	1	
TP24	0-0.1	Soil	31/01/2019	1	1		1											1
TP24	0.2-0.3	Soil	31/01/2019	1	1		1		1	1								
TP24	1.0-1.1	Soil	31/01/2019	1	1													
TP24	1.7-1.8	Soil	31/01/2019	1														
TP28	0-0.1	Soil	31/01/2019	1	1		1			1								
TP28	0.4-0.5	Soil	31/01/2019	1	1		1		1		1							
TP28	1.0-1.1	Soil	31/01/2019	1														
TP28	1.7-1.8	Soil	31/01/2019	1														
TP32	0-0.1	Soil	31/01/2019	1	1		1		1	1								1
TP32	0.7-0.8	Soil	31/01/2019	1	1											1	1	
TP32	1.7-1.8	Soil	31/01/2019	1			1											1
TP34	0-0.1	Soil	31/01/2019	1	1		1											
TP34	0.4-0.5	Soil	31/01/2019	1	1		1		1									
TP34	1-1.1	Soil	31/01/2019	1														
TP34	1.7-1.8	Soil	31/01/2019	1														
TP30	0-0.1	Soil	31/01/2019	1	1		1		1	1	1					1	1	
TP30	1.0-1.1	Soil	31/01/2019	1	1		1											
TP30	1.7-1.8	Soil	31/01/2019	1														
TP26	0-0.1	Soil	31/01/2019	1	1		1			1								
TP26	0.4-0.5	Soil	31/01/2019	1	1		1		1									
TP26	1.5-1.6	Soil	31/01/2019	1														
TP31	0-0.1	Soil	31/01/2019	1	1		1		1									
TP31	0.4-0.5	Soil	31/01/2019	1	1											1	1	
TP31	1.5-1.6	Soil	31/01/2019	1			1											
TP33	0-0.1	Soil	31/01/2019	1	1		1		1									
TP33	0.8-0.9	Soil	31/01/2019	1	1		1											
TP33	1.7-1.8	Soil	31/01/2019	1														
QA20190130MN_01	-	Soil	30/01/2019	1	1		1		1									
QA20190130MN_02	-	Soil	30/01/2019	1	1													
QA20190130MN_03	-	Soil	30/01/2019	1	1		1		1	1	1	1	1					
TP00	0-0.15	Soil	30/01/2019	1						1		1	1					
TP00	0.2-0.3	Soil	30/01/2019	1														1
TP00	0.4-0.5	Soil	30/01/2019	1												1	1	
TP00	1-1.1	Soil	30/01/2019	1														1
TP04	0-0.1	Soil	30/01/2019	1			1		1	1								
TP04	0.2-0.3	Soil	30/01/2019	1			1		1	1	1	1	1					
TP04	1.0-1.1	Soil	30/01/2019	1														
TP06	0-0.2	Soil	29/01/2019	1	1		1		1	1		1		1				1
TP06	0.8-0.9	Soil	29/01/2019	1	1											1	1	
TP07	0-0.1	Soil	29/01/2019	1	1		1		1	1		1						
TP07	0.4-0.5	Soil	29/01/2019	1	1													
TP07	1.3-1.4	Soil	29/01/2019	1														
TP15	0-0.1	Soil	30/01/2019	1	1											1	1	
TP15	0.3-0.4	Soil	30/01/2019	1	1													1
TP15	1.0-1.1	Soil	30/01/2019	1														
TP15	1.7-1.8	Soil	30/01/2019	1														1
MW01	0-0.2	Soil	29/01/2019	1	1					1								
MW01	0.4-0.5	Soil	29/01/2019	1	1													1
MW01	1-1.1	Soil	29/01/2019	1	1									1		1	1	
MW01	1.5-1.6	Soil	29/01/2019	1	1													1
MW01	2-2.1	Soil	29/01/2019	1	1													
MW01	5.5-5.6	Soil	29/01/2019	1												1	1	
MW02	0-0.2	Soil	29/01/2019	1	1													
MW02	0.4-0.5	Soil	29/01/2019	1	1											1	1	
MW02	1.2-1.3	Soil	29/01/2019	1	1		1		1									
MW02	1.9-2.0	Soil	29/01/2019	1	1													1
MW02	3.0-3.1	Soil	29/01/2019	1	1											1	1	
MW02	6.0-6.1	Soil	29/01/2019	1	1													1
MW03	0-0.2	Soil	29/01/2019	1	1											1	1	
MW03	0.4-0.5	Soil	29/01/2019	1	1													1
MW03	1.5-1.6	Soil	29/01/2019	1	1											1	1	
MW03	2.9-3.0	Soil	29/01/2019	1	1											1	1	
QA20190130MN_04	-	Soil	30/01/2019	1	1		1		1	1								
Trip Spike/Blank (29-1)	-	Soil	29/01/2019	1		1		1										
Trip Spike/Blank (31-1)	-	Soil	31/01/2019	1		1		1										
Rinsate (29-1)	-	Soil	29/01/2019	1		1	1		1	1	1	1						
Rinsate (30-1)	-	Soil	30/01/2019	1		1	1		1	1	1	1						
Rinsate (31-1)	-	Soil	31/01/2019	1		1	1		1	1	1	1						

Enviro Sample NSW

From: Nibha Vaidya
Sent: Friday, 1 February 2019 11:31 AM
To: Enviro Sample NSW; COC NSW
Cc: Charl Du Preez
Subject: 5 DAY TAT - FW: Schedule of Analysis - Mamre Road 54963
Attachments: Lab Schedule Sheet 02-01.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Massive COC, guys.

Just following up. There is also a potential ACM frag from TP01 which was missed on the COC. Can you please analyse for presence/absence of ACM.

Additionally, please forward on to Envirolab (Sydney):

- QC20190130MN_01;
- QC20190130MN_02;
- QC20190130MN_03;
- QC20190130MN_04;

With note to contact me upon receipt.

Kind Regards,

Nibha Vaidya
Phone : +61 2 9900 8415
Mobile : +61 499 900 805
Email : NibhaVaidya@eurofins.com

From: Rohan Hammond [mailto:RHammond@jbsg.com.au]
Sent: Friday, 1 February 2019 11:21 AM
To: Nibha Vaidya
Subject: RE: Schedule of Analysis - Mamre Road 54963

EXTERNAL EMAIL*

Sorry Nibha, should be more legible now.

Rohan.

From: Nibha Vaidya <NibhaVaidya@eurofins.com>
Sent: Friday, 1 February 2019 11:08 AM
To: Rohan Hammond <RHammond@jbsg.com.au>
Cc: Milad Noujaim <mnoujaim@jbsg.com.au>
Subject: RE: Schedule of Analysis - Mamre Road 54963

Thanks Rohan,

It is not quite clear on the COC as to which lines '1's belong. Would you be able to adjust the COC and resend?

Enviro Sample NSW

From: Rohan Hammond <RHammond@jbsg.com.au>
Sent: Saturday, 2 February 2019 11:14 AM
To: Enviro Sample NSW
Cc: Milad Noujaim
Subject: RE: Eurofins | mgt Sample Receipt Advice - Report 638491 : Site MAMRE ROAD KEMPS CREEK (54963)

Follow Up Flag: Follow up
Flag Status: Flagged

Hi EnviroSample,

Cancelled Analysis:
Please move all analyses of samples per the following:

- TP01 0.4-0.5 to TP01 0.2-0.3;
- TP05 0.2-0.3 to TP05 0-0.1 (cancel additional asbestos and metals analysis);
- Confirm no additional rinsate samples were received (other than 31-1). If additional rinsate samples were received please move analysis of 29-1 and 30-1 to those samples. If no additional rinsate, cancel analysis.

Asbestos bags
Acknowledged bags not received. Given no analysis scheduled, no problem at this stage.

Extra Bags
Place all extra bags on hold, identify additional containers on SRA.

Trip Spike and Trip Blank
Please analyse both sets of TS/TBs. Are you able to identify which TS/TB set was received on 29-1 and which was received on 31-1? IF so, please note on SRA.

Samples Received
Confirm to move any anaylsis scheduled on the samples received with alternate naming per the final statement of your email.

Any further issues, please call to discuss.

Rohan.

From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: Friday, 1 February 2019 9:04 PM
To: Rohan Hammond <RHammond@jbsg.com.au>
Cc: Milad Noujaim <mnoujaim@jbsg.com.au>
Subject: Eurofins | mgt Sample Receipt Advice - Report 638491 : Site MAMRE ROAD KEMPS CREEK (54963)

Dear Valued Client,

Samples TP01 0.4-0.5, TP05 0.2-0.3, RINSATE 29-1, RINSATE 30-1 not received, analysis cancelled.

Asbestos bags not received for samples TP24 1.0-1.1, TP31 0.4-0.5, TP33 0.8-0.9. Extra sample received TP01 0-0.1 (Jar + Bag) placed on hold.

Extra Asbestos bags received for samples TP00 0-0.15, TP00 0.2-0.3, TP00 0.4-0.5, TP04 0-0.1, TP04 1.0-1.1, TP05 1.5-1.6.

eurofins | mgt

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

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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

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

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

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Rohan Hammond
Project name: MAMRE ROAD KEMPS CREEK
Project ID: 54963
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Feb 1, 2019 11:21 AM
Eurofins | mgt reference: **638491**

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 | mgt Sample Receipt : 3.4 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

Asbestos bags not received for samples TP24 1.0-1.1, TP31 0.4-0.5, TP33 0.8-0.9. Extra sample received TP01 0-0.1 (Jar + Bag) placed on hold. Extra Asbestos bags received for samples TP00 0-0.15, TP00 0.2-0.3, TP00 0.4-0.5, TP04 0-0.1, TP04 1.0-1.1, TP05 1.5-1.6. Samples QC20190130MN_01, QC20190130MN_02, QC20190130MN_03, QC20190130MN_04 forwarded to Envirolab.

Contact notes

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

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Rohan Hammond - rhammond@jbsg.com.au.

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

eurofins | mgt

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

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

Sydney
Unit F3, Building F
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Address: Level 1, 50 Margaret St
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Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
Report #: 638491
Phone: 02 8245 0300
Fax:

Received: Feb 1, 2019 11:21 AM
Due: Feb 8, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	CANCELLED	Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7A
Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X														
Brisbane Laboratory - NATA Site # 20794						X																	
Perth Laboratory - NATA Site # 23736																							
External Laboratory																							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																		
1	TP02 0-0.15	Jan 30, 2019		Soil	S19-Fe01404		X							X					X	X	X		X
2	TP02 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01405					X		X									X		
3	TP02 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01406					X		X				X					X		
4	TP01 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01407		X			X		X		X	X						X		X
5	TP01 0.4-0.5	Jan 30, 2019		Soil	S19-Fe01408				X														
6	TP01 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01409	X													X	X	X		
7	TP03 0-0.15	Jan 30, 2019		Soil	S19-Fe01410		X							X	X						X		X
8	TP05 0-0.1	Jan 30, 2019		Soil	S19-Fe01411		X						X	X		X	X	X			X	X	
9	TP05 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01412				X														

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X														
Brisbane Laboratory - NATA Site # 20794						X																	
Perth Laboratory - NATA Site # 23736																							
10	TP05 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01413														X	X	X		
11	TP05 1.5-1.6	Jan 30, 2019		Soil	S19-Fe01414					X		X									X		
12	TP11 0-0.1	Jan 30, 2019		Soil	S19-Fe01415		X														X		X
13	TP11 1.1-1.2	Jan 30, 2019		Soil	S19-Fe01416											X					X		
14	TP12 0-0.1	Jan 30, 2019		Soil	S19-Fe01417	X	X									X		X			X	X	
15	TP12 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01418					X		X				X					X		
16	TP12 1.8-1.9	Jan 30, 2019		Soil	S19-Fe01419														X	X	X		
17	TP13 0-0.1	Jan 30, 2019		Soil	S19-Fe01420		X														X		X
18	TP13 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01421											X					X		
19	TP09 0.0-0.1	Jan 30, 2019		Soil	S19-Fe01422											X		X			X	X	
20	TP09 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01423											X					X		
21	TP18 0-0.1	Jan 30, 2019		Soil	S19-Fe01424		X							X					X	X	X		X

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X														
Brisbane Laboratory - NATA Site # 20794						X																	
Perth Laboratory - NATA Site # 23736																							
22	TP18 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01425					X		X				X					X		
23	TP17 0-0.1	Jan 30, 2019		Soil	S19-Fe01426											X					X		
24	TP17 0.3-0.4	Jan 30, 2019		Soil	S19-Fe01427		X							X							X		X
25	TP17 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01428											X					X		
26	TP16 0-0.1	Jan 30, 2019		Soil	S19-Fe01429		X									X		X			X	X	
27	TP16 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01430											X					X		
28	TP20 0-0.1	Jan 31, 2019		Soil	S19-Fe01431											X					X		
29	TP20 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01432											X		X			X	X	
30	TP20 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01433					X		X									X		
31	TP20 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01434														X	X	X		
32	TP21 0.0-0.1	Jan 31, 2019		Soil	S19-Fe01435											X					X		
33	TP21 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01436											X		X			X	X	

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X														
Brisbane Laboratory - NATA Site # 20794						X																	
Perth Laboratory - NATA Site # 23736																							
34	TP22 0-0.1	Jan 31, 2019		Soil	S19-Fe01437									X							X		X
35	TP22 0.6-0.7	Jan 31, 2019		Soil	S19-Fe01438											X			X	X	X		
36	TP22 1.5-1.6	Jan 31, 2019		Soil	S19-Fe01439					X		X									X		
37	TP24 0-0.1	Jan 31, 2019		Soil	S19-Fe01440											X					X		
38	TP24 0.2-0.3	Jan 31, 2019		Soil	S19-Fe01441									X		X		X			X	X	
39	TP28 0-0.1	Jan 31, 2019		Soil	S19-Fe01442									X		X					X		
40	TP28 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01443																X		X
41	TP32 0-0.1	Jan 31, 2019		Soil	S19-Fe01444					X		X		X		X		X			X	X	
42	TP32 0.7-0.8	Jan 31, 2019		Soil	S19-Fe01445														X	X	X		
43	TP32 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01446					X		X				X					X		
44	TP34 0-0.1	Jan 31, 2019		Soil	S19-Fe01447											X					X		
45	TP34 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01448											X		X			X	X	

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X														
Brisbane Laboratory - NATA Site # 20794						X																	
Perth Laboratory - NATA Site # 23736																							
46	TP30 0-0.1	Jan 31, 2019		Soil	S19-Fe01449									X					X	X	X		X
47	TP30 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01450											X					X		
48	TP26 0-0.1	Jan 31, 2019		Soil	S19-Fe01451									X		X					X		
49	TP26 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01452											X		X			X	X	
50	TP31 0-0.1	Jan 31, 2019		Soil	S19-Fe01453											X		X			X	X	
51	TP31 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01454														X	X	X		
52	TP31 1.5-1.6	Jan 31, 2019		Soil	S19-Fe01455											X					X		
53	TP33 0-0.1	Jan 31, 2019		Soil	S19-Fe01456											X		X			X	X	
54	TP33 0.8-0.9	Jan 31, 2019		Soil	S19-Fe01457											X					X		
55	QA20190130MN_01	Jan 30, 2019		Soil	S19-Fe01458											X		X			X	X	
56	QA20190130MN_03	Jan 30, 2019		Soil	S19-Fe01459		X							X	X						X		X

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X														
Brisbane Laboratory - NATA Site # 20794						X																	
Perth Laboratory - NATA Site # 23736																							
57	TP00 0-0.15	Jan 30, 2019		Soil	S19-Fe01460		X							X	X						X		
58	TP00 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01461					X		X									X		
59	TP00 0.4-0.5	Jan 30, 2019		Soil	S19-Fe01462														X	X	X		
60	TP00 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01463					X		X									X		
61	TP04 0-0.1	Jan 30, 2019		Soil	S19-Fe01464									X		X		X			X	X	
62	TP04 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01465		X							X	X						X		X
63	TP06 0-0.2	Jan 29, 2019		Soil	S19-Fe01466	X	X							X		X		X			X	X	
64	TP06 0.8-0.9	Jan 29, 2019		Soil	S19-Fe01467														X	X	X		
65	TP07 0-0.1	Jan 29, 2019		Soil	S19-Fe01468		X							X		X		X			X	X	
66	TP15 0-0.1	Jan 30, 2019		Soil	S19-Fe01469														X	X	X		
67	TP15 0.3-0.4	Jan 30, 2019		Soil	S19-Fe01470					X		X									X		
68	TP15 1.7-1.8	Jan 29, 2019		Soil	S19-Fe01471					X		X									X		

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X														
Brisbane Laboratory - NATA Site # 20794						X																	
Perth Laboratory - NATA Site # 23736																							
69	MW01 0-0.2	Jan 29, 2019		Soil	S19-Fe01472									X							X		
70	MW01 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01473					X		X									X		
71	MW01 1.0-1.1	Jan 29, 2019		Soil	S19-Fe01474	X													X	X	X		
72	MW01 1.5-1.6	Jan 29, 2019		Soil	S19-Fe01475					X		X									X		
73	MW01 5.5-5.6	Jan 29, 2019		Soil	S19-Fe01476														X	X	X		
74	MW02 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01477														X	X	X		
75	MW02 1.2-1.3	Jan 29, 2019		Soil	S19-Fe01478											X		X			X	X	
76	MW02 1.9-2.0	Jan 29, 2019		Soil	S19-Fe01479					X		X									X		
77	MW02 3.0-3.1	Jan 29, 2019		Soil	S19-Fe01480														X	X	X		
78	MW02 6.0-6.1	Jan 29, 2019		Soil	S19-Fe01481					X		X									X		
79	MW03 0-0.2	Jan 29, 2019		Soil	S19-Fe01482														X	X	X		
80	MW03 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01483					X		X									X		

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X														
Brisbane Laboratory - NATA Site # 20794						X																	
Perth Laboratory - NATA Site # 23736																							
81	MW03 1.5-1.6	Jan 29, 2019		Soil	S19-Fe01484														X	X	X		
82	MW03 2.9-3.0	Jan 29, 2019		Soil	S19-Fe01485														X	X	X		
83	QA20190130MN_04	Jan 30, 2019		Soil	S19-Fe01486									X		X		X			X	X	
84	TRIP BLANK 29-1	Jan 29, 2019		Water	S19-Fe01487													X					
85	TRIP SPIKE 29-1	Jan 29, 2019		Water	S19-Fe01488													X					
86	TRIP BLANK 31-1	Jan 31, 2019		Water	S19-Fe01489													X					
87	TRIP SPIKE 31-1	Jan 31, 2019		Water	S19-Fe01490													X					
88	RINSATE 29-1	Jan 29, 2019		Water	S19-Fe01491				X														
89	RINSATE 30-1	Jan 30, 2019		Water	S19-Fe01492				X														

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Company Name: JBS & G Australia (NSW) P/L
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NSW 2000

Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
Report #: 638491
Phone: 02 8245 0300
Fax:

Received: Feb 1, 2019 11:21 AM
Due: Feb 8, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	CANCELLED	Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7A
Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X														
Brisbane Laboratory - NATA Site # 20794						X																	
Perth Laboratory - NATA Site # 23736																							
90	RINSATE 31-1	Jan 31, 2019		Water	S19-Fe01493									X	X								X
91	TP03 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01541						X												
92	TP11 0.3-0.4	Jan 30, 2019		Soil	S19-Fe01542						X												
93	TP11 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01543						X												
94	TP13 1.8-1.9	Jan 30, 2019		Soil	S19-Fe01544						X												
95	TP09 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01545						X												
96	TP18 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01546						X												
97	TP17 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01547						X												
98	TP16 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01548						X												
99	TP21 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01549						X												
100	TP21 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01550						X												
101	TP24 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01551						X												

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X														
Brisbane Laboratory - NATA Site # 20794						X																	
Perth Laboratory - NATA Site # 23736																							
102	TP24 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01552						X												
103	TP28 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01553						X												
104	TP28 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01554						X												
105	TP34 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01555						X												
106	TP34 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01556						X												
107	TP30 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01557						X												
108	TP26 1.5-1.6	Jan 31, 2019		Soil	S19-Fe01558						X												
109	TP33 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01559						X												
110	QA2019013MN_02	Jan 30, 2019		Soil	S19-Fe01560						X												
111	TP04 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01561						X												
112	TP07 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01562						X												

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X														
Brisbane Laboratory - NATA Site # 20794						X																	
Perth Laboratory - NATA Site # 23736																							
113	TP07 1.3-1.4	Jan 29, 2019		Soil	S19-Fe01563						X												
114	TP15 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01564						X												
115	MW01 2.0-2.1	Jan 29, 2019		Soil	S19-Fe01565						X												
116	MW02 0-0.2	Jan 29, 2019		Soil	S19-Fe01566						X												
117	TP01	Jan 30, 2019		Building Materials	S19-Fe01567			X															
118	TP01 0-0.1	Jan 30, 2019		Soil	S19-Fe01594						X												
Test Counts						4	15	1	4	19	27	19	1	21	6	38	1	22	20	20	81	18	13

Certificate of Analysis

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NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention:	Rohan Hammond
Report	638491-AID
Project Name	MAMRE ROAD KEMPS CREEK
Project ID	54963
Received Date	Feb 01, 2019
Date Reported	Feb 08, 2019

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name MAMRE ROAD KEMPS CREEK
Project ID 54963
Date Sampled Jan 29, 2019 to Jan 30, 2019
Report 638491-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
TP02 0-0.15	19-Fe01404	Jan 30, 2019	Approximate Sample 586g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP01 0.2-0.3	19-Fe01407	Jan 30, 2019	Approximate Sample 479g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP03 0-0.15	19-Fe01410	Jan 30, 2019	Approximate Sample 805g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP05 0-0.1	19-Fe01411	Jan 30, 2019	Approximate Sample 742g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP11 0-0.1	19-Fe01415	Jan 30, 2019	Approximate Sample 475g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP12 0-0.1	19-Fe01417	Jan 30, 2019	Approximate Sample 570g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP13 0-0.1	19-Fe01420	Jan 30, 2019	Approximate Sample 714g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP18 0-0.1	19-Fe01424	Jan 30, 2019	Approximate Sample 585g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
TP17 0.3-0.4	19-Fe01427	Jan 30, 2019	Approximate Sample 513g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP16 0-0.1	19-Fe01429	Jan 30, 2019	Approximate Sample 707g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
QA20190130MN_03	19-Fe01459	Jan 30, 2019	Approximate Sample 855g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP00 0-0.15	19-Fe01460	Jan 30, 2019	Approximate Sample 655g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP04 0.2-0.3	19-Fe01465	Jan 30, 2019	Approximate Sample 548g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP06 0-0.2	19-Fe01466	Jan 29, 2019	Approximate Sample 445g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP07 0-0.1	19-Fe01468	Jan 29, 2019	Approximate Sample 396g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP01	19-Fe01567	Jan 30, 2019	Approximate Sample 60g / 111x66x4mm Sample consisted of: Grey compressed fibre cement sheet	Chrysotile, amosite and crocidolite 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 (regarding both quality and NATA accreditation).

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	Feb 01, 2019	Indefinite
Asbestos - LTM-ASB-8020	Sydney	Feb 01, 2019	Indefinite

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Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	CANCELLED	Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7A
Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																	
1	TP02 0-0.15	Jan 30, 2019		Soil	S19-Fe01404		X						X					X	X	X		X
2	TP02 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01405					X		X								X		
3	TP02 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01406					X		X			X					X		
4	TP01 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01407		X			X		X	X	X						X		X
5	TP01 0.4-0.5	Jan 30, 2019		Soil	S19-Fe01408				X													
6	TP01 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01409	X												X	X	X		
7	TP03 0-0.15	Jan 30, 2019		Soil	S19-Fe01410		X						X	X						X		X
8	TP05 0-0.1	Jan 30, 2019		Soil	S19-Fe01411		X						X			X				X	X	X
9	TP05 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01412				X													

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
10	TP05 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01413													X	X	X		
11	TP05 1.5-1.6	Jan 30, 2019		Soil	S19-Fe01414					X		X								X		
12	TP11 0-0.1	Jan 30, 2019		Soil	S19-Fe01415		X													X		X
13	TP11 1.1-1.2	Jan 30, 2019		Soil	S19-Fe01416										X					X		
14	TP12 0-0.1	Jan 30, 2019		Soil	S19-Fe01417	X	X								X		X			X	X	
15	TP12 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01418					X		X			X					X		
16	TP12 1.8-1.9	Jan 30, 2019		Soil	S19-Fe01419													X	X	X		
17	TP13 0-0.1	Jan 30, 2019		Soil	S19-Fe01420		X													X		X
18	TP13 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01421										X					X		
19	TP09 0.0-0.1	Jan 30, 2019		Soil	S19-Fe01422										X		X			X	X	
20	TP09 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01423										X					X		
21	TP18 0-0.1	Jan 30, 2019		Soil	S19-Fe01424		X						X					X	X	X		X

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
22	TP18 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01425					X		X			X					X		
23	TP17 0-0.1	Jan 30, 2019		Soil	S19-Fe01426										X					X		
24	TP17 0.3-0.4	Jan 30, 2019		Soil	S19-Fe01427		X						X							X		X
25	TP17 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01428										X					X		
26	TP16 0-0.1	Jan 30, 2019		Soil	S19-Fe01429		X								X		X			X	X	
27	TP16 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01430										X					X		
28	TP20 0-0.1	Jan 31, 2019		Soil	S19-Fe01431										X					X		
29	TP20 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01432										X		X			X	X	
30	TP20 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01433					X		X								X		
31	TP20 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01434													X	X	X		
32	TP21 0.0-0.1	Jan 31, 2019		Soil	S19-Fe01435										X					X		
33	TP21 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01436										X		X			X	X	

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Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
Report #: 638491
Phone: 02 8245 0300
Fax:

Received: Feb 1, 2019 11:21 AM
Due: Feb 8, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	CANCELLED	Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7A
Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
34	TP22 0-0.1	Jan 31, 2019		Soil	S19-Fe01437								X							X		X
35	TP22 0.6-0.7	Jan 31, 2019		Soil	S19-Fe01438										X			X	X	X		
36	TP22 1.5-1.6	Jan 31, 2019		Soil	S19-Fe01439					X		X								X		
37	TP24 0-0.1	Jan 31, 2019		Soil	S19-Fe01440										X					X		
38	TP24 0.2-0.3	Jan 31, 2019		Soil	S19-Fe01441								X		X		X			X	X	
39	TP28 0-0.1	Jan 31, 2019		Soil	S19-Fe01442								X		X					X		
40	TP28 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01443															X		X
41	TP32 0-0.1	Jan 31, 2019		Soil	S19-Fe01444					X		X	X		X		X			X	X	
42	TP32 0.7-0.8	Jan 31, 2019		Soil	S19-Fe01445													X	X	X		
43	TP32 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01446					X		X			X					X		
44	TP34 0-0.1	Jan 31, 2019		Soil	S19-Fe01447										X					X		
45	TP34 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01448										X		X			X	X	

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
46	TP30 0-0.1	Jan 31, 2019		Soil	S19-Fe01449								X					X	X	X		X
47	TP30 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01450										X					X		
48	TP26 0-0.1	Jan 31, 2019		Soil	S19-Fe01451								X		X					X		
49	TP26 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01452										X		X			X	X	
50	TP31 0-0.1	Jan 31, 2019		Soil	S19-Fe01453										X		X			X	X	
51	TP31 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01454													X	X	X		
52	TP31 1.5-1.6	Jan 31, 2019		Soil	S19-Fe01455										X					X		
53	TP33 0-0.1	Jan 31, 2019		Soil	S19-Fe01456										X		X			X	X	
54	TP33 0.8-0.9	Jan 31, 2019		Soil	S19-Fe01457										X					X		
55	QA20190130MN_01	Jan 30, 2019		Soil	S19-Fe01458										X		X			X	X	
56	QA20190130MN_03	Jan 30, 2019		Soil	S19-Fe01459		X						X	X						X		X

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
57	TP00 0-0.15	Jan 30, 2019		Soil	S19-Fe01460		X						X	X						X		
58	TP00 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01461					X		X								X		
59	TP00 0.4-0.5	Jan 30, 2019		Soil	S19-Fe01462													X	X	X		
60	TP00 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01463					X		X								X		
61	TP04 0-0.1	Jan 30, 2019		Soil	S19-Fe01464								X		X		X			X	X	
62	TP04 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01465		X						X	X						X		X
63	TP06 0-0.2	Jan 29, 2019		Soil	S19-Fe01466	X	X						X		X		X			X	X	
64	TP06 0.8-0.9	Jan 29, 2019		Soil	S19-Fe01467													X	X	X		
65	TP07 0-0.1	Jan 29, 2019		Soil	S19-Fe01468		X						X		X		X			X	X	
66	TP15 0-0.1	Jan 30, 2019		Soil	S19-Fe01469													X	X	X		
67	TP15 0.3-0.4	Jan 30, 2019		Soil	S19-Fe01470					X		X								X		
68	TP15 1.7-1.8	Jan 29, 2019		Soil	S19-Fe01471					X		X								X		

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
69	MW01 0-0.2	Jan 29, 2019		Soil	S19-Fe01472								X							X		
70	MW01 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01473					X		X								X		
71	MW01 1.0-1.1	Jan 29, 2019		Soil	S19-Fe01474	X												X	X	X		
72	MW01 1.5-1.6	Jan 29, 2019		Soil	S19-Fe01475					X		X								X		
73	MW01 5.5-5.6	Jan 29, 2019		Soil	S19-Fe01476													X	X	X		
74	MW02 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01477													X	X	X		
75	MW02 1.2-1.3	Jan 29, 2019		Soil	S19-Fe01478										X		X			X	X	
76	MW02 1.9-2.0	Jan 29, 2019		Soil	S19-Fe01479					X		X								X		
77	MW02 3.0-3.1	Jan 29, 2019		Soil	S19-Fe01480													X	X	X		
78	MW02 6.0-6.1	Jan 29, 2019		Soil	S19-Fe01481					X		X								X		
79	MW03 0-0.2	Jan 29, 2019		Soil	S19-Fe01482													X	X	X		
80	MW03 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01483					X		X								X		

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
81	MW03 1.5-1.6	Jan 29, 2019		Soil	S19-Fe01484													X	X	X		
82	MW03 2.9-3.0	Jan 29, 2019		Soil	S19-Fe01485													X	X	X		
83	QA20190130MN_04	Jan 30, 2019		Soil	S19-Fe01486								X		X		X			X	X	
84	TRIP BLANK 29-1	Jan 29, 2019		Water	S19-Fe01487												X					
85	TRIP SPIKE 29-1	Jan 29, 2019		Water	S19-Fe01488												X					
86	TRIP BLANK 31-1	Jan 31, 2019		Water	S19-Fe01489												X					
87	TRIP SPIKE 31-1	Jan 31, 2019		Water	S19-Fe01490												X					
88	RINSATE 29-1	Jan 29, 2019		Water	S19-Fe01491				X													
89	RINSATE 30-1	Jan 30, 2019		Water	S19-Fe01492				X													

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
90	RINSATE 31-1	Jan 31, 2019		Water	S19-Fe01493								X	X								X
91	TP03 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01541						X											
92	TP11 0.3-0.4	Jan 30, 2019		Soil	S19-Fe01542						X											
93	TP11 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01543						X											
94	TP13 1.8-1.9	Jan 30, 2019		Soil	S19-Fe01544						X											
95	TP09 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01545						X											
96	TP18 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01546						X											
97	TP17 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01547						X											
98	TP16 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01548						X											
99	TP21 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01549						X											
100	TP21 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01550						X											
101	TP24 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01551						X											

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
102	TP24 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01552						X											
103	TP28 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01553						X											
104	TP28 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01554						X											
105	TP34 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01555						X											
106	TP34 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01556						X											
107	TP30 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01557						X											
108	TP26 1.5-1.6	Jan 31, 2019		Soil	S19-Fe01558						X											
109	TP33 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01559						X											
110	QA2019013MN_02	Jan 30, 2019		Soil	S19-Fe01560						X											
111	TP04 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01561						X											
112	TP07 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01562						X											

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Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	CANCELLED	Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7A
Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
113	TP07 1.3-1.4	Jan 29, 2019		Soil	S19-Fe01563						X											
114	TP15 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01564						X											
115	MW01 2.0-2.1	Jan 29, 2019		Soil	S19-Fe01565						X											
116	MW02 0-0.2	Jan 29, 2019		Soil	S19-Fe01566						X											
117	TP01	Jan 30, 2019		Building Materials	S19-Fe01567			X														
118	TP01 0-0.1	Jan 30, 2019		Soil	S19-Fe01594						X											
Test Counts						4	15	1	4	19	27	19	21	6	37	1	21	20	20	81	18	14

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. 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

Fe01407, Fe01415 , Fe01466 and Fe01468: 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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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
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Rohan Hammond**

Report **638491-S**
Project name MAMRE ROAD KEMPS CREEK
Project ID 54963
Received Date Feb 01, 2019

Client Sample ID			**TP02 0-0.15**	**TP02 0.2-0.3**	**TP02 1.0-1.1**	**TP01 0.2-0.3**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01404**	**S19-Fe01405**	**S19-Fe01406**	**S19-Fe01407**
Date Sampled			**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	-	< 20
TRH C10-C14	20	mg/kg	< 20	-	-	< 20
TRH C15-C28	50	mg/kg	100	-	-	< 50
TRH C29-C36	50	mg/kg	150	-	-	< 50
TRH C10-36 (Total)	50	mg/kg	250	-	-	< 50
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	%	66	-	-	67
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	200	-	-	< 100
TRH >C34-C40	100	mg/kg	130	-	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	330	-	-	< 100
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

Client Sample ID			TP02 0-0.15	TP02 0.2-0.3	TP02 1.0-1.1	TP01 0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01404	S19-Fe01405	S19-Fe01406	S19-Fe01407
Date Sampled			Jan 30, 2019	Jan 30, 2019	Jan 30, 2019	Jan 30, 2019
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	58	-	-	92
p-Terphenyl-d14 (surr.)	1	%	60	-	-	95
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-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
d-BHC	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-BHC (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	1	mg/kg	< 1	-	-	< 1
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
Dibutylchlorendate (surr.)	1	%	51	-	-	113
Tetrachloro-m-xylene (surr.)	1	%	65	-	-	102
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
Dibutylchlorendate (surr.)	1	%	-	-	-	113
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	102

Client Sample ID			TP02 0-0.15	TP02 0.2-0.3	TP02 1.0-1.1	TP01 0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01404	S19-Fe01405	S19-Fe01406	S19-Fe01407
Date Sampled			Jan 30, 2019	Jan 30, 2019	Jan 30, 2019	Jan 30, 2019
Test/Reference	LOR	Unit				
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	-	-	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	-	-	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	-	-	< 1
Pentachlorophenol	1	mg/kg	< 1	-	-	< 1
Tetrachlorophenols - Total	1	mg/kg	< 1	-	-	< 1
Total Halogenated Phenol*	1	mg/kg	< 1	-	-	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	-	-	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	-	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	-	-	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	-	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-	< 0.4
4-Nitrophenol	5	mg/kg	< 5	-	-	< 5
Dinoseb	20	mg/kg	< 20	-	-	< 20
Phenol	0.5	mg/kg	< 0.5	-	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	-	< 20
Phenol-d6 (surr.)	1	%	74	-	-	66
Chloride	5	mg/kg	21	-	-	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	100	94	280	140
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.9	8.4	5.7	6.4
Resistivity*	0.5	ohm.m	98	-	-	-
Sulphate (as SO4)	30	mg/kg	< 30	-	-	-
Exchangeable Sodium Percentage (ESP)	0.1	%	1.0	-	-	-
Magnesium (exchangeable)	0.1	meq/100g	1.7	-	-	-
Potassium (exchangeable)	0.1	meq/100g	0.5	-	-	-
Sodium (exchangeable)	0.1	meq/100g	0.4	-	-	-
% Moisture	1	%	21	11	13	10
Heavy Metals						
Arsenic	2	mg/kg	26	-	7.5	15
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	1.3
Chromium	5	mg/kg	41	-	21	49
Copper	5	mg/kg	67	-	18	83
Lead	5	mg/kg	47	-	15	150
Mercury	0.1	mg/kg	0.2	-	< 0.1	< 0.1
Nickel	5	mg/kg	26	-	7.4	38
Zinc	5	mg/kg	360	-	24	240
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	36	-	-	-
Cation Exchange Capacity	0.05	meq/100g	38	-	-	-

Client Sample ID			TP01 1.0-1.1	TP03 0-0.15	TP05 0-0.1	TP05 1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01409	S19-Fe01410	S19-Fe01411	S19-Fe01413
Date Sampled			Jan 30, 2019	Jan 30, 2019	Jan 30, 2019	Jan 30, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	-
TRH C10-C14	20	mg/kg	-	< 20	< 20	-
TRH C15-C28	50	mg/kg	-	120	170	-
TRH C29-C36	50	mg/kg	-	150	220	-
TRH C10-36 (Total)	50	mg/kg	-	270	390	-
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	%	-	76	67	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	-	210	310	-
TRH >C34-C40	100	mg/kg	-	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	-	210	310	-
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	%	-	89	88	-
p-Terphenyl-d14 (surr.)	1	%	-	101	73	-

Client Sample ID			TP01 1.0-1.1	TP03 0-0.15	TP05 0-0.1	TP05 1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01409	S19-Fe01410	S19-Fe01411	S19-Fe01413
Date Sampled			Jan 30, 2019	Jan 30, 2019	Jan 30, 2019	Jan 30, 2019
Test/Reference	LOR	Unit				
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-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
d-BHC	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-BHC (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	1	mg/kg	-	< 1	< 1	-
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	-
Dibutylchlorendate (surr.)	1	%	-	82	117	-
Tetrachloro-m-xylene (surr.)	1	%	-	106	119	-
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	-	-
Dibutylchlorendate (surr.)	1	%	-	82	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	106	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	< 0.5	< 0.5	-
2.4-Dichlorophenol	0.5	mg/kg	-	< 0.5	< 0.5	-
2.4.5-Trichlorophenol	1	mg/kg	-	< 1	< 1	-
2.4.6-Trichlorophenol	1	mg/kg	-	< 1	< 1	-
2.6-Dichlorophenol	0.5	mg/kg	-	< 0.5	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	-	< 1	< 1	-
Pentachlorophenol	1	mg/kg	-	< 1	< 1	-
Tetrachlorophenols - Total	1	mg/kg	-	< 1	< 1	-
Total Halogenated Phenol*	1	mg/kg	-	< 1	< 1	-

Client Sample ID			TP01 1.0-1.1	TP03 0-0.15	TP05 0-0.1	TP05 1.0-1.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01409**	**S19-Fe01410**	**S19-Fe01411**	**S19-Fe01413**
Date Sampled			**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	< 20	< 20	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	< 5	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	< 0.2	-
2-Nitrophenol	1.0	mg/kg	-	< 1	< 1	-
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	< 0.5	-
2.4-Dinitrophenol	5	mg/kg	-	< 5	< 5	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	< 0.4	-
4-Nitrophenol	5	mg/kg	-	< 5	< 5	-
Dinoseb	20	mg/kg	-	< 20	< 20	-
Phenol	0.5	mg/kg	-	< 0.5	< 0.5	-
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	< 20	-
Phenol-d6 (surr.)	1	%	-	78	27	-
% Clay	1	%	27	-	-	-
Chloride	5	mg/kg	910	-	-	580
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	700	-	-	450
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	5.0	-	-	5.2
Resistivity*	0.5	ohm.m	14	-	-	22
Sulphate (as SO4)	30	mg/kg	310	-	-	90
Exchangeable Sodium Percentage (ESP)	0.1	%	26	-	-	23
Magnesium (exchangeable)	0.1	meq/100g	9.3	-	-	2.8
Potassium (exchangeable)	0.1	meq/100g	0.2	-	-	< 0.1
Sodium (exchangeable)	0.1	meq/100g	3.4	-	-	1.0
% Moisture	1	%	10	12	12	12
Heavy Metals						
Arsenic	2	mg/kg	-	8.1	7.1	-
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	-
Chromium	5	mg/kg	-	24	16	-
Copper	5	mg/kg	-	27	25	-
Lead	5	mg/kg	-	41	26	-
Mercury	0.1	mg/kg	-	< 0.1	< 0.1	-
Nickel	5	mg/kg	-	17	9.0	-
Zinc	5	mg/kg	-	100	57	-
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	0.3	-	-	0.3
Cation Exchange Capacity	0.05	meq/100g	13	-	-	4.1

Client Sample ID			TP05 1.5-1.6	TP11 0-0.1	TP11 1.1-1.2	TP12 0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01414**	**S19-Fe01415**	**S19-Fe01416**	**S19-Fe01417**
Date Sampled			**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	-	< 20
TRH C10-C14	20	mg/kg	-	< 20	-	< 20
TRH C15-C28	50	mg/kg	-	< 50	-	63
TRH C29-C36	50	mg/kg	-	180	-	120
TRH C10-36 (Total)	50	mg/kg	-	180	-	183

Client Sample ID			TP05 1.5-1.6	TP11 0-0.1	TP11 1.1-1.2	TP12 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01414	S19-Fe01415	S19-Fe01416	S19-Fe01417
Date Sampled			Jan 30, 2019	Jan 30, 2019	Jan 30, 2019	Jan 30, 2019
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	%	-	67	-	68
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	-	170	-	150
TRH >C34-C40	100	mg/kg	-	< 100	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	170	-	150
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	-	-
Acenaphthene	0.5	mg/kg	-	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	-
Anthracene	0.5	mg/kg	-	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Chrysene	0.5	mg/kg	-	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	-
Fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Fluorene	0.5	mg/kg	-	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	-
Naphthalene	0.5	mg/kg	-	< 0.5	-	-
Phenanthrene	0.5	mg/kg	-	< 0.5	-	-
Pyrene	0.5	mg/kg	-	< 0.5	-	-
Total PAH*	0.5	mg/kg	-	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	-	67	-	-
p-Terphenyl-d14 (surr.)	1	%	-	64	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4.5-Trichlorophenol	1	mg/kg	-	< 1	-	-
2.4.6-Trichlorophenol	1	mg/kg	-	< 1	-	-
2.6-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
4-Chloro-3-methylphenol	1	mg/kg	-	< 1	-	-
Pentachlorophenol	1	mg/kg	-	< 1	-	-
Tetrachlorophenols - Total	1	mg/kg	-	< 1	-	-
Total Halogenated Phenol*	1	mg/kg	-	< 1	-	-

Client Sample ID			TP05 1.5-1.6	TP11 0-0.1	TP11 1.1-1.2	TP12 0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01414**	**S19-Fe01415**	**S19-Fe01416**	**S19-Fe01417**
Date Sampled			**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	< 20	-	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	< 5	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	-
2-Nitrophenol	1.0	mg/kg	-	< 1	-	-
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dinitrophenol	5	mg/kg	-	< 5	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	-
4-Nitrophenol	5	mg/kg	-	< 5	-	-
Dinoseb	20	mg/kg	-	< 20	-	-
Phenol	0.5	mg/kg	-	< 0.5	-	-
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	-
Phenol-d6 (surr.)	1	%	-	79	-	-
% Clay	1	%	-	-	-	8.4
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	880	-	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	5.4	-	-	-
% Moisture	1	%	19	20	18	17
Heavy Metals						
Arsenic	2	mg/kg	-	4.1	4.5	5.1
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	-	14	14	14
Copper	5	mg/kg	-	15	15	27
Lead	5	mg/kg	-	14	11	42
Mercury	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	-	7.3	5.5	13
Zinc	5	mg/kg	-	40	16	220

Client Sample ID			TP12 1.0-1.1	TP12 1.8-1.9	TP13 0-0.1	TP13 1.0-1.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01418**	**S19-Fe01419**	**S19-Fe01420**	**S19-Fe01421**
Date Sampled			**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	-	-	< 50	-
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	%	-	-	73	-

Client Sample ID			TP12 1.0-1.1	TP12 1.8-1.9	TP13 0-0.1	TP13 1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01418	S19-Fe01419	S19-Fe01420	S19-Fe01421
Date Sampled			Jan 30, 2019	Jan 30, 2019	Jan 30, 2019	Jan 30, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	1.2	-
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Chrysene	0.5	mg/kg	-	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH*	0.5	mg/kg	-	-	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	-	-	73	-
p-Terphenyl-d14 (surr.)	1	%	-	-	65	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	-	< 0.5	-
2.4-Dichlorophenol	0.5	mg/kg	-	-	< 0.5	-
2.4.5-Trichlorophenol	1	mg/kg	-	-	< 1	-
2.4.6-Trichlorophenol	1	mg/kg	-	-	< 1	-
2.6-Dichlorophenol	0.5	mg/kg	-	-	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	-	-	< 1	-
Pentachlorophenol	1	mg/kg	-	-	< 1	-
Tetrachlorophenols - Total	1	mg/kg	-	-	< 1	-
Total Halogenated Phenol*	1	mg/kg	-	-	< 1	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	-	< 20	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	-	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	< 0.2	-
2-Nitrophenol	1.0	mg/kg	-	-	< 1	-
2.4-Dimethylphenol	0.5	mg/kg	-	-	< 0.5	-
2.4-Dinitrophenol	5	mg/kg	-	-	< 5	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	< 0.4	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TP12 1.0-1.1 Soil S19-Fe01418 Jan 30, 2019	TP12 1.8-1.9 Soil S19-Fe01419 Jan 30, 2019	TP13 0-0.1 Soil S19-Fe01420 Jan 30, 2019	TP13 1.0-1.1 Soil S19-Fe01421 Jan 30, 2019
Phenols (non-Halogenated)						
4-Nitrophenol	5	mg/kg	-	-	< 5	-
Dinoseb	20	mg/kg	-	-	< 20	-
Phenol	0.5	mg/kg	-	-	< 0.5	-
Total Non-Halogenated Phenol*	20	mg/kg	-	-	< 20	-
Phenol-d6 (surr.)	1	%	-	-	87	-
Chloride	5	mg/kg	-	210	-	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	200	160	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	5.7	6.2	-	-
Resistivity*	0.5	ohm.m	-	63	-	-
Sulphate (as SO4)	30	mg/kg	-	43	-	-
Exchangeable Sodium Percentage (ESP)	0.1	%	-	29	-	-
Magnesium (exchangeable)	0.1	meq/100g	-	11	-	-
Potassium (exchangeable)	0.1	meq/100g	-	0.3	-	-
Sodium (exchangeable)	0.1	meq/100g	-	5.6	-	-
% Moisture	1	%	17	13	7.3	13
Heavy Metals						
Arsenic	2	mg/kg	4.7	-	5.9	4.5
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	< 0.4
Chromium	5	mg/kg	14	-	19	13
Copper	5	mg/kg	16	-	7.1	12
Lead	5	mg/kg	11	-	15	6.9
Mercury	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Nickel	5	mg/kg	5.2	-	< 5	5.7
Zinc	5	mg/kg	18	-	9.5	17
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	-	2.0	-	-
Cation Exchange Capacity	0.05	meq/100g	-	19	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TP09 0.0-0.1 Soil S19-Fe01422 Jan 30, 2019	TP09 1.7-1.8 Soil S19-Fe01423 Jan 30, 2019	TP18 0-0.1 Soil S19-Fe01424 Jan 30, 2019	TP18 1.0-1.1 Soil S19-Fe01425 Jan 30, 2019
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	< 50	-	< 50	-
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	%	110	-	59	-

Client Sample ID			TP09 0.0-0.1	TP09 1.7-1.8	TP18 0-0.1	TP18 1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01422	S19-Fe01423	S19-Fe01424	S19-Fe01425
Date Sampled			Jan 30, 2019	Jan 30, 2019	Jan 30, 2019	Jan 30, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	1.2	-
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Chrysene	0.5	mg/kg	-	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH*	0.5	mg/kg	-	-	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	-	-	109	-
p-Terphenyl-d14 (surr.)	1	%	-	-	74	-
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	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-

Client Sample ID			TP09 0.0-0.1	TP09 1.7-1.8	TP18 0-0.1	TP18 1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01422	S19-Fe01423	S19-Fe01424	S19-Fe01425
Date Sampled			Jan 30, 2019	Jan 30, 2019	Jan 30, 2019	Jan 30, 2019
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.05	mg/kg	-	-	< 0.05	-
Toxaphene	1	mg/kg	-	-	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchlorendate (surr.)	1	%	-	-	114	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	131	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	-	< 0.5	-
2.4-Dichlorophenol	0.5	mg/kg	-	-	< 0.5	-
2.4.5-Trichlorophenol	1	mg/kg	-	-	< 1	-
2.4.6-Trichlorophenol	1	mg/kg	-	-	< 1	-
2.6-Dichlorophenol	0.5	mg/kg	-	-	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	-	-	< 1	-
Pentachlorophenol	1	mg/kg	-	-	< 1	-
Tetrachlorophenols - Total	1	mg/kg	-	-	< 1	-
Total Halogenated Phenol*	1	mg/kg	-	-	< 1	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	-	< 20	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	-	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	< 0.2	-
2-Nitrophenol	1.0	mg/kg	-	-	< 1	-
2.4-Dimethylphenol	0.5	mg/kg	-	-	< 0.5	-
2.4-Dinitrophenol	5	mg/kg	-	-	< 5	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	< 0.4	-
4-Nitrophenol	5	mg/kg	-	-	< 5	-
Dinoseb	20	mg/kg	-	-	< 20	-
Phenol	0.5	mg/kg	-	-	< 0.5	-
Total Non-Halogenated Phenol*	20	mg/kg	-	-	< 20	-
Phenol-d6 (surr.)	1	%	-	-	66	-
Chloride	5	mg/kg	-	-	42	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	83	130
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	5.4	5.8
Resistivity*	0.5	ohm.m	-	-	120	-
Sulphate (as SO4)	30	mg/kg	-	-	99	-
Exchangeable Sodium Percentage (ESP)	0.1	%	-	-	16	-
Magnesium (exchangeable)	0.1	meq/100g	-	-	10	-
Potassium (exchangeable)	0.1	meq/100g	-	-	0.3	-
Sodium (exchangeable)	0.1	meq/100g	-	-	2.3	-
% Moisture	1	%	12	16	13	14
Heavy Metals						
Arsenic	2	mg/kg	11	< 2	6.5	4.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	45	5.5	15	9.0
Copper	5	mg/kg	8.9	6.5	18	16

Client Sample ID			TP09 0.0-0.1	TP09 1.7-1.8	TP18 0-0.1	TP18 1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01422	S19-Fe01423	S19-Fe01424	S19-Fe01425
Date Sampled			Jan 30, 2019	Jan 30, 2019	Jan 30, 2019	Jan 30, 2019
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	23	5.4	11	12
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	7.4	9.3
Zinc	5	mg/kg	9.3	9.5	27	31
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	-	-	1.3	-
Cation Exchange Capacity	0.05	meq/100g	-	-	14	-

Client Sample ID			TP17 0-0.1	TP17 0.3-0.4	TP17 1.7-1.8	TP16 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01426	S19-Fe01427	S19-Fe01428	S19-Fe01429
Date Sampled			Jan 30, 2019	Jan 30, 2019	Jan 30, 2019	Jan 30, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	-	< 50	-	< 50
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	%	-	68	-	62
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	-	-
Acenaphthene	0.5	mg/kg	-	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	-
Anthracene	0.5	mg/kg	-	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	-

Client Sample ID			TP17 0-0.1	TP17 0.3-0.4	TP17 1.7-1.8	TP16 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01426	S19-Fe01427	S19-Fe01428	S19-Fe01429
Date Sampled			Jan 30, 2019	Jan 30, 2019	Jan 30, 2019	Jan 30, 2019
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Chrysene	0.5	mg/kg	-	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	-
Fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Fluorene	0.5	mg/kg	-	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	-
Naphthalene	0.5	mg/kg	-	< 0.5	-	-
Phenanthrene	0.5	mg/kg	-	< 0.5	-	-
Pyrene	0.5	mg/kg	-	< 0.5	-	-
Total PAH*	0.5	mg/kg	-	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	-	68	-	-
p-Terphenyl-d14 (surr.)	1	%	-	65	-	-
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	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	-	89	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	81	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4.5-Trichlorophenol	1	mg/kg	-	< 1	-	-
2.4.6-Trichlorophenol	1	mg/kg	-	< 1	-	-
2.6-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
4-Chloro-3-methylphenol	1	mg/kg	-	< 1	-	-
Pentachlorophenol	1	mg/kg	-	< 1	-	-
Tetrachlorophenols - Total	1	mg/kg	-	< 1	-	-
Total Halogenated Phenol*	1	mg/kg	-	< 1	-	-

Client Sample ID			TP17 0-0.1	TP17 0.3-0.4	TP17 1.7-1.8	TP16 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01426	S19-Fe01427	S19-Fe01428	S19-Fe01429
Date Sampled			Jan 30, 2019	Jan 30, 2019	Jan 30, 2019	Jan 30, 2019
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	< 20	-	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	< 5	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	-
2-Nitrophenol	1.0	mg/kg	-	< 1	-	-
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dinitrophenol	5	mg/kg	-	< 5	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	-
4-Nitrophenol	5	mg/kg	-	< 5	-	-
Dinoseb	20	mg/kg	-	< 20	-	-
Phenol	0.5	mg/kg	-	< 0.5	-	-
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	-
Phenol-d6 (surr.)	1	%	-	30	-	-
% Moisture	1	%	12	9.0	16	12
Heavy Metals						
Arsenic	2	mg/kg	4.1	3.0	12	7.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	17	13	20	16
Copper	5	mg/kg	7.4	5.9	24	9.8
Lead	5	mg/kg	11	9.0	24	9.5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	5.3	< 5	6.3	5.4
Zinc	5	mg/kg	11	7.8	25	11

Client Sample ID			TP16 1.0-1.1	TP20 0-0.1	TP20 0.4-0.5	TP20 1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01430	S19-Fe01431	S19-Fe01432	S19-Fe01433
Date Sampled			Jan 30, 2019	Jan 31, 2019	Jan 31, 2019	Jan 31, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	-	-	< 50	-
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	%	-	-	65	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	-

Client Sample ID			TP16 1.0-1.1	TP20 0-0.1	TP20 0.4-0.5	TP20 1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01430	S19-Fe01431	S19-Fe01432	S19-Fe01433
Date Sampled			Jan 30, 2019	Jan 31, 2019	Jan 31, 2019	Jan 31, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	-	330
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	-	5.1
% Moisture	1	%	19	10	15	11
Heavy Metals						
Arsenic	2	mg/kg	5.2	5.1	5.6	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	15	22	18	-
Copper	5	mg/kg	15	38	17	-
Lead	5	mg/kg	11	12	11	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	6.2	8.2	5.5	-
Zinc	5	mg/kg	23	35	15	-

Client Sample ID			TP20 1.7-1.8	TP21 0.0-0.1	TP21 0.4-0.5	TP22 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01434	S19-Fe01435	S19-Fe01436	S19-Fe01437
Date Sampled			Jan 31, 2019	Jan 31, 2019	Jan 31, 2019	Jan 31, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	-	-	< 50	< 50
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	%	-	-	64	70
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TP20 1.7-1.8 Soil S19-Fe01434 Jan 31, 2019	TP21 0.0-0.1 Soil S19-Fe01435 Jan 31, 2019	TP21 0.4-0.5 Soil S19-Fe01436 Jan 31, 2019	TP22 0-0.1 Soil S19-Fe01437 Jan 31, 2019
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	-	1.2
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	-	< 0.5
Total PAH*	0.5	mg/kg	-	-	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	-	-	109
p-Terphenyl-d14 (surr.)	1	%	-	-	-	79
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
a-BHC	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-BHC	0.05	mg/kg	-	-	-	< 0.05
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.05	mg/kg	-	-	-	< 0.05
Toxaphene	1	mg/kg	-	-	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	-	136
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	148

Client Sample ID			TP20 1.7-1.8	TP21 0.0-0.1	TP21 0.4-0.5	TP22 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01434	S19-Fe01435	S19-Fe01436	S19-Fe01437
Date Sampled			Jan 31, 2019	Jan 31, 2019	Jan 31, 2019	Jan 31, 2019
Test/Reference	LOR	Unit				
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	-	-	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	-	-	-	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	-	-	-	< 1
2.4.6-Trichlorophenol	1	mg/kg	-	-	-	< 1
2.6-Dichlorophenol	0.5	mg/kg	-	-	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	-	-	-	< 1
Pentachlorophenol	1	mg/kg	-	-	-	< 1
Tetrachlorophenols - Total	1	mg/kg	-	-	-	< 1
Total Halogenated Phenol*	1	mg/kg	-	-	-	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	-	-	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	-	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	-	< 0.2
2-Nitrophenol	1.0	mg/kg	-	-	-	< 1
2.4-Dimethylphenol	0.5	mg/kg	-	-	-	< 0.5
2.4-Dinitrophenol	5	mg/kg	-	-	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	-	< 0.4
4-Nitrophenol	5	mg/kg	-	-	-	< 5
Dinoseb	20	mg/kg	-	-	-	< 20
Phenol	0.5	mg/kg	-	-	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	-	-	-	< 20
Phenol-d6 (surr.)	1	%	-	-	-	65
Chloride	5	mg/kg	530	-	-	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	350	-	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	5.3	-	-	-
Resistivity*	0.5	ohm.m	28	-	-	-
Sulphate (as SO4)	30	mg/kg	81	-	-	-
Exchangeable Sodium Percentage (ESP)	0.1	%	28	-	-	-
Magnesium (exchangeable)	0.1	meq/100g	5.0	-	-	-
Potassium (exchangeable)	0.1	meq/100g	0.1	-	-	-
Sodium (exchangeable)	0.1	meq/100g	2.3	-	-	-
% Moisture	1	%	11	8.6	8.1	12
Heavy Metals						
Arsenic	2	mg/kg	-	3.0	2.7	2.9
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	-	10.0	12	13
Copper	5	mg/kg	-	8.7	< 5	< 5
Lead	5	mg/kg	-	11	7.2	11
Mercury	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	-	5.2	< 5	< 5
Zinc	5	mg/kg	-	17	< 5	7.1
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	0.6	-	-	-
Cation Exchange Capacity	0.05	meq/100g	8.1	-	-	-

Client Sample ID			TP22 0.6-0.7	TP22 1.5-1.6	TP24 0-0.1	TP24 0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01438	S19-Fe01439	S19-Fe01440	S19-Fe01441
Date Sampled			Jan 31, 2019	Jan 31, 2019	Jan 31, 2019	Jan 31, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	-	-	-	< 50
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	%	-	-	-	72
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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
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
a-BHC	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-BHC	0.05	mg/kg	-	-	-	< 0.05
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.05	mg/kg	-	-	-	< 0.05
Toxaphene	1	mg/kg	-	-	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	-	97
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	115

Client Sample ID			TP22 0.6-0.7	TP22 1.5-1.6	TP24 0-0.1	TP24 0.2-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01438**	**S19-Fe01439**	**S19-Fe01440**	**S19-Fe01441**
Date Sampled			**Jan 31, 2019**	**Jan 31, 2019**	**Jan 31, 2019**	**Jan 31, 2019**
Test/Reference	LOR	Unit				
Chloride	5	mg/kg	49	-	-	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	92	84	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	5.2	5.1	-	-
Resistivity*	0.5	ohm.m	110	-	-	-
Sulphate (as SO4)	30	mg/kg	82	-	-	-
Exchangeable Sodium Percentage (ESP)	0.1	%	25	-	-	-
Magnesium (exchangeable)	0.1	meq/100g	5.2	-	-	-
Potassium (exchangeable)	0.1	meq/100g	0.2	-	-	-
Sodium (exchangeable)	0.1	meq/100g	2.2	-	-	-
% Moisture	1	%	14	15	7.0	15
Heavy Metals						
Arsenic	2	mg/kg	< 2	-	6.3	5.3
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	< 0.4
Chromium	5	mg/kg	9.5	-	26	17
Copper	5	mg/kg	6.4	-	6.8	13
Lead	5	mg/kg	8.1	-	17	10
Mercury	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	-	< 5	< 5
Zinc	5	mg/kg	8.3	-	11	14
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	1.3	-	-	-
Cation Exchange Capacity	0.05	meq/100g	8.8	-	-	-

Client Sample ID			TP28 0-0.1	TP28 0.4-0.5	TP32 0-0.1	TP32 0.7-0.8
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01442**	**S19-Fe01443**	**S19-Fe01444**	**S19-Fe01445**
Date Sampled			**Jan 31, 2019**	**Jan 31, 2019**	**Jan 31, 2019**	**Jan 31, 2019**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	-	< 50	< 50	-
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	%	-	78	77	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TP28 0-0.1 Soil S19-Fe01442 Jan 31, 2019	TP28 0.4-0.5 Soil S19-Fe01443 Jan 31, 2019	TP32 0-0.1 Soil S19-Fe01444 Jan 31, 2019	TP32 0.7-0.8 Soil S19-Fe01445 Jan 31, 2019
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	-	-
Acenaphthene	0.5	mg/kg	-	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	-
Anthracene	0.5	mg/kg	-	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Chrysene	0.5	mg/kg	-	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	-
Fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Fluorene	0.5	mg/kg	-	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	-
Naphthalene	0.5	mg/kg	-	< 0.5	-	-
Phenanthrene	0.5	mg/kg	-	< 0.5	-	-
Pyrene	0.5	mg/kg	-	< 0.5	-	-
Total PAH*	0.5	mg/kg	-	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	-	75	-	-
p-Terphenyl-d14 (surr.)	1	%	-	74	-	-
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-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
d-BHC	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-BHC (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	1	mg/kg	< 1	-	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	-

Client Sample ID			TP28 0-0.1	TP28 0.4-0.5	TP32 0-0.1	TP32 0.7-0.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01442	S19-Fe01443	S19-Fe01444	S19-Fe01445
Date Sampled			Jan 31, 2019	Jan 31, 2019	Jan 31, 2019	Jan 31, 2019
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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	-
Dibutylchlorendate (surr.)	1	%	65	-	73	-
Tetrachloro-m-xylene (surr.)	1	%	97	-	99	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4.5-Trichlorophenol	1	mg/kg	-	< 1	-	-
2.4.6-Trichlorophenol	1	mg/kg	-	< 1	-	-
2.6-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
4-Chloro-3-methylphenol	1	mg/kg	-	< 1	-	-
Pentachlorophenol	1	mg/kg	-	< 1	-	-
Tetrachlorophenols - Total	1	mg/kg	-	< 1	-	-
Total Halogenated Phenol*	1	mg/kg	-	< 1	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	< 20	-	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	< 5	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	-
2-Nitrophenol	1.0	mg/kg	-	< 1	-	-
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dinitrophenol	5	mg/kg	-	< 5	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	-
4-Nitrophenol	5	mg/kg	-	< 5	-	-
Dinoseb	20	mg/kg	-	< 20	-	-
Phenol	0.5	mg/kg	-	< 0.5	-	-
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	-
Phenol-d6 (surr.)	1	%	-	63	-	-
Chloride	5	mg/kg	-	-	-	1600
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	210	1100
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	5.2	4.7
Resistivity*	0.5	ohm.m	-	-	-	8.9
Sulphate (as SO4)	30	mg/kg	-	-	-	180
Exchangeable Sodium Percentage (ESP)	0.1	%	-	-	-	39
Magnesium (exchangeable)	0.1	meq/100g	-	-	-	8.9
Potassium (exchangeable)	0.1	meq/100g	-	-	-	0.2
Sodium (exchangeable)	0.1	meq/100g	-	-	-	5.9
% Moisture	1	%	7.1	16	6.1	14
Heavy Metals						
Arsenic	2	mg/kg	9.4	5.5	4.1	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	31	16	11	-
Copper	5	mg/kg	6.5	15	7.6	-
Lead	5	mg/kg	20	12	15	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	7.0	< 5	< 5	-
Zinc	5	mg/kg	10	11	15	-

Client Sample ID			TP28 0-0.1	TP28 0.4-0.5	TP32 0-0.1	TP32 0.7-0.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01442	S19-Fe01443	S19-Fe01444	S19-Fe01445
Date Sampled			Jan 31, 2019	Jan 31, 2019	Jan 31, 2019	Jan 31, 2019
Test/Reference	LOR	Unit				
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	-	-	-	0.2
Cation Exchange Capacity	0.05	meq/100g	-	-	-	15

Client Sample ID			TP32 1.7-1.8	TP34 0-0.1	TP34 0.4-0.5	TP30 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01446	S19-Fe01447	S19-Fe01448	S19-Fe01449
Date Sampled			Jan 31, 2019	Jan 31, 2019	Jan 31, 2019	Jan 31, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	-	-	< 50	< 50
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	%	-	-	74	80
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	-	1.2
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TP32 1.7-1.8 Soil S19-Fe01446 Jan 31, 2019	TP34 0-0.1 Soil S19-Fe01447 Jan 31, 2019	TP34 0.4-0.5 Soil S19-Fe01448 Jan 31, 2019	TP30 0-0.1 Soil S19-Fe01449 Jan 31, 2019
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.5	mg/kg	-	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	-	< 0.5
Total PAH*	0.5	mg/kg	-	-	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	-	-	50
p-Terphenyl-d14 (surr.)	1	%	-	-	-	55
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
a-BHC	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-BHC	0.05	mg/kg	-	-	-	< 0.05
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.05	mg/kg	-	-	-	< 0.05
Toxaphene	1	mg/kg	-	-	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	-	70
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	65
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	-	-	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	-	-	-	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	-	-	-	< 1
2.4.6-Trichlorophenol	1	mg/kg	-	-	-	< 1
2.6-Dichlorophenol	0.5	mg/kg	-	-	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	-	-	-	< 1
Pentachlorophenol	1	mg/kg	-	-	-	< 1
Tetrachlorophenols - Total	1	mg/kg	-	-	-	< 1
Total Halogenated Phenol*	1	mg/kg	-	-	-	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	-	-	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	-	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	-	< 0.2
2-Nitrophenol	1.0	mg/kg	-	-	-	< 1

Client Sample ID			TP32 1.7-1.8	TP34 0-0.1	TP34 0.4-0.5	TP30 0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01446**	**S19-Fe01447**	**S19-Fe01448**	**S19-Fe01449**
Date Sampled			**Jan 31, 2019**	**Jan 31, 2019**	**Jan 31, 2019**	**Jan 31, 2019**
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2.4-Dimethylphenol	0.5	mg/kg	-	-	-	< 0.5
2.4-Dinitrophenol	5	mg/kg	-	-	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	-	< 0.4
4-Nitrophenol	5	mg/kg	-	-	-	< 5
Dinoseb	20	mg/kg	-	-	-	< 20
Phenol	0.5	mg/kg	-	-	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	-	-	-	< 20
Phenol-d6 (surr.)	1	%	-	-	-	106
Chloride	5	mg/kg	-	-	-	41
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	1200	-	-	120
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	5.2	-	-	6.1
Resistivity*	0.5	ohm.m	-	-	-	83
Sulphate (as SO4)	30	mg/kg	-	-	-	65
Exchangeable Sodium Percentage (ESP)	0.1	%	-	-	-	12
Magnesium (exchangeable)	0.1	meq/100g	-	-	-	6.3
Potassium (exchangeable)	0.1	meq/100g	-	-	-	0.2
Sodium (exchangeable)	0.1	meq/100g	-	-	-	1.5
% Moisture	1	%	14	9.9	15	14
Heavy Metals						
Arsenic	2	mg/kg	3.1	6.1	8.2	8.5
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	8.9	24	14	24
Copper	5	mg/kg	11	8.9	18	15
Lead	5	mg/kg	6.1	16	11	13
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	6.9	< 5	7.8
Zinc	5	mg/kg	8.6	22	15	15
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	-	-	-	4.2
Cation Exchange Capacity	0.05	meq/100g	-	-	-	12

Client Sample ID			TP30 1.0-1.1	TP26 0-0.1	TP26 0.4-0.5	TP31 0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01450**	**S19-Fe01451**	**S19-Fe01452**	**S19-Fe01453**
Date Sampled			**Jan 31, 2019**	**Jan 31, 2019**	**Jan 31, 2019**	**Jan 31, 2019**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	-	-	< 50	< 50
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

Client Sample ID			TP30 1.0-1.1	TP26 0-0.1	TP26 0.4-0.5	TP31 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01450	S19-Fe01451	S19-Fe01452	S19-Fe01453
Date Sampled			Jan 31, 2019	Jan 31, 2019	Jan 31, 2019	Jan 31, 2019
Test/Reference	LOR	Unit				
BTEX						
o-Xylene	0.1	mg/kg	-	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	76	66
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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
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	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	-	85	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	119	-	-
% Moisture	1	%	13	13	15	6.7
Heavy Metals						
Arsenic	2	mg/kg	8.1	4.6	3.5	8.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	15	28	15	34
Copper	5	mg/kg	20	12	9.6	< 5
Lead	5	mg/kg	12	15	12	19
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			TP30 1.0-1.1	TP26 0-0.1	TP26 0.4-0.5	TP31 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01450	S19-Fe01451	S19-Fe01452	S19-Fe01453
Date Sampled			Jan 31, 2019	Jan 31, 2019	Jan 31, 2019	Jan 31, 2019
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel	5	mg/kg	7.1	11	< 5	5.7
Zinc	5	mg/kg	24	17	6.2	12

Client Sample ID			TP31 0.4-0.5	TP31 1.5-1.6	TP33 0-0.1	TP33 0.8-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01454	S19-Fe01455	S19-Fe01456	S19-Fe01457
Date Sampled			Jan 31, 2019	Jan 31, 2019	Jan 31, 2019	Jan 31, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	-	-	< 50	-
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	%	-	-	66	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	-
Chloride	5	mg/kg	83	-	-	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	120	-	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.0	-	-	-
Resistivity*	0.5	ohm.m	80	-	-	-
Sulphate (as SO4)	30	mg/kg	< 30	-	-	-
Exchangeable Sodium Percentage (ESP)	0.1	%	30	-	-	-
Magnesium (exchangeable)	0.1	meq/100g	12	-	-	-
Potassium (exchangeable)	0.1	meq/100g	0.3	-	-	-
Sodium (exchangeable)	0.1	meq/100g	5.4	-	-	-
% Moisture	1	%	15	13	5.8	13
Heavy Metals						
Arsenic	2	mg/kg	-	2.4	15	4.3
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	-	8.8	53	16
Copper	5	mg/kg	-	13	6.3	11
Lead	5	mg/kg	-	8.1	31	8.5

Client Sample ID			TP31 0.4-0.5	TP31 1.5-1.6	TP33 0-0.1	TP33 0.8-0.9
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01454**	**S19-Fe01455**	**S19-Fe01456**	**S19-Fe01457**
Date Sampled			**Jan 31, 2019**	**Jan 31, 2019**	**Jan 31, 2019**	**Jan 31, 2019**
Test/Reference	LOR	Unit				
Heavy Metals						
Mercury	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	-	< 5	5.5	5.7
Zinc	5	mg/kg	-	20	12	14
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	0.2	-	-	-
Cation Exchange Capacity	0.05	meq/100g	18	-	-	-

Client Sample ID			QA20190130MN_01	QA20190130MN_03	TP00 0-0.15	TP00 0.2-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01458**	**S19-Fe01459**	**S19-Fe01460**	**S19-Fe01461**
Date Sampled			**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	< 50	< 50	-	-
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	%	66	67	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	-	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	-	-
Acenaphthene	0.5	mg/kg	-	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	-
Anthracene	0.5	mg/kg	-	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	-

Client Sample ID			QA20190130MN_01	QA20190130MN_03	TP00 0-0.15	TP00 0.2-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01458**	**S19-Fe01459**	**S19-Fe01460**	**S19-Fe01461**
Date Sampled			**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Chrysene	0.5	mg/kg	-	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	-
Fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Fluorene	0.5	mg/kg	-	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	-
Naphthalene	0.5	mg/kg	-	< 0.5	-	-
Phenanthrene	0.5	mg/kg	-	< 0.5	-	-
Pyrene	0.5	mg/kg	-	< 0.5	-	-
Total PAH*	0.5	mg/kg	-	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	-	90	-	-
p-Terphenyl-d14 (surr.)	1	%	-	73	-	-
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-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
d-BHC	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-BHC (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	1	mg/kg	-	< 1	< 1	-
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	-
Dibutylchlorendate (surr.)	1	%	-	104	96	-
Tetrachloro-m-xylene (surr.)	1	%	-	102	89	-
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	%	-	104	96	-
Tetrachloro-m-xylene (surr.)	1	%	-	102	89	-

Client Sample ID			QA20190130MN_01	QA20190130MN_03	TP00 0-0.15	TP00 0.2-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01458**	**S19-Fe01459**	**S19-Fe01460**	**S19-Fe01461**
Date Sampled			**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**
Test/Reference	LOR	Unit				
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4.5-Trichlorophenol	1	mg/kg	-	< 1	-	-
2.4.6-Trichlorophenol	1	mg/kg	-	< 1	-	-
2.6-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
4-Chloro-3-methylphenol	1	mg/kg	-	< 1	-	-
Pentachlorophenol	1	mg/kg	-	< 1	-	-
Tetrachlorophenols - Total	1	mg/kg	-	< 1	-	-
Total Halogenated Phenol*	1	mg/kg	-	< 1	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	< 20	-	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	< 5	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	-
2-Nitrophenol	1.0	mg/kg	-	< 1	-	-
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dinitrophenol	5	mg/kg	-	< 5	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	-
4-Nitrophenol	5	mg/kg	-	< 5	-	-
Dinoseb	20	mg/kg	-	< 20	-	-
Phenol	0.5	mg/kg	-	< 0.5	-	-
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	-
Phenol-d6 (surr.)	1	%	-	40	-	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	-	20
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	-	6.0
% Moisture	1	%	13	10	13	15
Heavy Metals						
Arsenic	2	mg/kg	18	10	-	-
Cadmium	0.4	mg/kg	0.9	< 0.4	-	-
Chromium	5	mg/kg	47	28	-	-
Copper	5	mg/kg	64	32	-	-
Lead	5	mg/kg	380	47	-	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	-
Nickel	5	mg/kg	30	15	-	-
Zinc	5	mg/kg	180	110	-	-

Client Sample ID			TP00 0.4-0.5	TP00 1.0-1.1	TP04 0-0.1	TP04 0.2-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01462**	**S19-Fe01463**	**S19-Fe01464**	**S19-Fe01465**
Date Sampled			**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	< 20
TRH C10-C14	20	mg/kg	-	-	< 20	< 20
TRH C15-C28	50	mg/kg	-	-	220	< 50
TRH C29-C36	50	mg/kg	-	-	230	< 50
TRH C10-36 (Total)	50	mg/kg	-	-	450	< 50

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TP00 0.4-0.5 Soil S19-Fe01462 Jan 30, 2019	TP00 1.0-1.1 Soil S19-Fe01463 Jan 30, 2019	TP04 0-0.1 Soil S19-Fe01464 Jan 30, 2019	TP04 0.2-0.3 Soil S19-Fe01465 Jan 30, 2019
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	%	-	-	70	67
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	-	-	340	< 100
TRH >C34-C40	100	mg/kg	-	-	100	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	-	440	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	-	1.2
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	-	< 0.5
Total PAH*	0.5	mg/kg	-	-	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	-	-	80
p-Terphenyl-d14 (surr.)	1	%	-	-	-	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
a-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	-	< 0.05	< 0.05

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TP00 0.4-0.5 Soil S19-Fe01462 Jan 30, 2019	TP00 1.0-1.1 Soil S19-Fe01463 Jan 30, 2019	TP04 0-0.1 Soil S19-Fe01464 Jan 30, 2019	TP04 0.2-0.3 Soil S19-Fe01465 Jan 30, 2019
Organochlorine Pesticides						
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-BHC (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	1	mg/kg	-	-	< 1	< 1
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
Dibutylchlorendate (surr.)	1	%	-	-	81	103
Tetrachloro-m-xylene (surr.)	1	%	-	-	81	94
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
Dibutylchlorendate (surr.)	1	%	-	-	-	103
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	94
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	-	-	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	-	-	-	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	-	-	-	< 1
2.4.6-Trichlorophenol	1	mg/kg	-	-	-	< 1
2.6-Dichlorophenol	0.5	mg/kg	-	-	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	-	-	-	< 1
Pentachlorophenol	1	mg/kg	-	-	-	< 1
Tetrachlorophenols - Total	1	mg/kg	-	-	-	< 1
Total Halogenated Phenol*	1	mg/kg	-	-	-	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	-	-	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	-	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	-	< 0.2
2-Nitrophenol	1.0	mg/kg	-	-	-	< 1
2.4-Dimethylphenol	0.5	mg/kg	-	-	-	< 0.5
2.4-Dinitrophenol	5	mg/kg	-	-	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	-	< 0.4
4-Nitrophenol	5	mg/kg	-	-	-	< 5
Dinoseb	20	mg/kg	-	-	-	< 20

Client Sample ID			TP00 0.4-0.5	TP00 1.0-1.1	TP04 0-0.1	TP04 0.2-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01462**	**S19-Fe01463**	**S19-Fe01464**	**S19-Fe01465**
Date Sampled			**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**	**Jan 30, 2019**
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
Phenol	0.5	mg/kg	-	-	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	-	-	-	< 20
Phenol-d6 (surr.)	1	%	-	-	-	69
Chloride	5	mg/kg	36	-	-	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	46	420	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.3	5.5	-	-
Resistivity*	0.5	ohm.m	220	-	-	-
Sulphate (as SO4)	30	mg/kg	37	-	-	-
Exchangeable Sodium Percentage (ESP)	0.1	%	14	-	-	-
Magnesium (exchangeable)	0.1	meq/100g	4.4	-	-	-
Potassium (exchangeable)	0.1	meq/100g	0.1	-	-	-
Sodium (exchangeable)	0.1	meq/100g	1.0	-	-	-
% Moisture	1	%	9.6	9.5	10	14
Heavy Metals						
Arsenic	2	mg/kg	-	-	13	4.3
Cadmium	0.4	mg/kg	-	-	< 0.4	< 0.4
Chromium	5	mg/kg	-	-	14	16
Copper	5	mg/kg	-	-	69	16
Lead	5	mg/kg	-	-	47	12
Mercury	0.1	mg/kg	-	-	0.1	< 0.1
Nickel	5	mg/kg	-	-	8.7	5.7
Zinc	5	mg/kg	-	-	270	18
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	1.9	-	-	-
Cation Exchange Capacity	0.05	meq/100g	7.4	-	-	-

Client Sample ID			TP06 0-0.2	TP06 0.8-0.9	TP07 0-0.1	TP15 0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe01466**	**S19-Fe01467**	**S19-Fe01468**	**S19-Fe01469**
Date Sampled			**Jan 29, 2019**	**Jan 29, 2019**	**Jan 29, 2019**	**Jan 30, 2019**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	-
TRH C10-C14	20	mg/kg	< 20	-	< 20	-
TRH C15-C28	50	mg/kg	62	-	< 50	-
TRH C29-C36	50	mg/kg	140	-	63	-
TRH C10-36 (Total)	50	mg/kg	202	-	63	-
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	%	72	-	74	-

Client Sample ID			TP06 0-0.2	TP06 0.8-0.9	TP07 0-0.1	TP15 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01466	S19-Fe01467	S19-Fe01468	S19-Fe01469
Date Sampled			Jan 29, 2019	Jan 29, 2019	Jan 29, 2019	Jan 30, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	180	-	< 100	-
TRH >C34-C40	100	mg/kg	120	-	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	300	-	< 100	-
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-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
d-BHC	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-BHC (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	1	mg/kg	< 1	-	< 1	-
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	-
Dibutylchlorendate (surr.)	1	%	87	-	85	-
Tetrachloro-m-xylene (surr.)	1	%	103	-	94	-
% Clay	1	%	14	-	-	-
Chloride	5	mg/kg	-	430	-	32
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	340	-	28
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	5.7	-	6.2
Resistivity*	0.5	ohm.m	-	29	-	350
Sulphate (as SO4)	30	mg/kg	-	240	-	33
Exchangeable Sodium Percentage (ESP)	0.1	%	-	26	-	11
Magnesium (exchangeable)	0.1	meq/100g	-	5.1	-	8.4
Potassium (exchangeable)	0.1	meq/100g	-	< 0.1	-	0.3
Sodium (exchangeable)	0.1	meq/100g	-	2.2	-	1.3
% Moisture	1	%	18	14	11	15

Client Sample ID			TP06 0-0.2	TP06 0.8-0.9	TP07 0-0.1	TP15 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01466	S19-Fe01467	S19-Fe01468	S19-Fe01469
Date Sampled			Jan 29, 2019	Jan 29, 2019	Jan 29, 2019	Jan 30, 2019
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	18	-	22	-
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	-
Chromium	5	mg/kg	27	-	24	-
Copper	5	mg/kg	57	-	27	-
Lead	5	mg/kg	25	-	18	-
Mercury	0.1	mg/kg	< 0.1	-	< 0.1	-
Nickel	5	mg/kg	14	-	13	-
Zinc	5	mg/kg	190	-	45	-
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	-	0.9	-	2.0
Cation Exchange Capacity	0.05	meq/100g	-	8.3	-	12

Client Sample ID			TP15 0.3-0.4	TP15 1.7-1.8	MW01 0-0.2	MW01 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01470	S19-Fe01471	S19-Fe01472	S19-Fe01473
Date Sampled			Jan 30, 2019	Jan 29, 2019	Jan 29, 2019	Jan 29, 2019
Test/Reference	LOR	Unit				
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	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.05	mg/kg	-	-	< 0.05	-
Toxaphene	1	mg/kg	-	-	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchlorendate (surr.)	1	%	-	-	87	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	103	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	30	400	-	550
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	5.9	5.9	-	5.0
% Moisture	1	%	12	12	15	17

Client Sample ID			MW01 1.0-1.1	MW01 1.5-1.6	MW01 5.5-5.6	MW02 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01474	S19-Fe01475	S19-Fe01476	S19-Fe01477
Date Sampled			Jan 29, 2019	Jan 29, 2019	Jan 29, 2019	Jan 29, 2019
Test/Reference	LOR	Unit				
% Clay	1	%	25	-	-	-
Chloride	5	mg/kg	1500	-	880	660
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	830	290	670	350
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	4.8	6.5	9.1	6.2
Resistivity*	0.5	ohm.m	12	-	15	28
Sulphate (as SO4)	30	mg/kg	300	-	110	150
Exchangeable Sodium Percentage (ESP)	0.1	%	24	-	3.3	26
Magnesium (exchangeable)	0.1	meq/100g	11	-	4.8	8.9
Potassium (exchangeable)	0.1	meq/100g	0.2	-	0.5	0.1
Sodium (exchangeable)	0.1	meq/100g	3.7	-	1.2	3.4
% Moisture	1	%	14	9.9	17	17
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	0.6	-	28	0.3
Cation Exchange Capacity	0.05	meq/100g	15	-	35	13

Client Sample ID			MW02 1.2-1.3	MW02 1.9-2.0	MW02 3.0-3.1	MW02 6.0-6.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe01478	S19-Fe01479	S19-Fe01480	S19-Fe01481
Date Sampled			Jan 29, 2019	Jan 29, 2019	Jan 29, 2019	Jan 29, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	< 50	-	-	-
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	%	70	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	-	-	-
Chloride	5	mg/kg	-	-	1100	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	610	600	730
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	5.6	5.9	8.2
Resistivity*	0.5	ohm.m	-	-	17	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	MW02 1.2-1.3 Soil S19-Fe01478 Jan 29, 2019	MW02 1.9-2.0 Soil S19-Fe01479 Jan 29, 2019	MW02 3.0-3.1 Soil S19-Fe01480 Jan 29, 2019	MW02 6.0-6.1 Soil S19-Fe01481 Jan 29, 2019
Sulphate (as SO4)	30	mg/kg	-	-	91	-
Exchangeable Sodium Percentage (ESP)	0.1	%	-	-	37	-
Magnesium (exchangeable)	0.1	meq/100g	-	-	4.0	-
Potassium (exchangeable)	0.1	meq/100g	-	-	< 0.1	-
Sodium (exchangeable)	0.1	meq/100g	-	-	2.5	-
% Moisture	1	%	15	16	14	13
Heavy Metals						
Arsenic	2	mg/kg	5.3	-	-	-
Cadmium	0.4	mg/kg	< 0.4	-	-	-
Chromium	5	mg/kg	14	-	-	-
Copper	5	mg/kg	15	-	-	-
Lead	5	mg/kg	13	-	-	-
Mercury	0.1	mg/kg	< 0.1	-	-	-
Nickel	5	mg/kg	9.9	-	-	-
Zinc	5	mg/kg	28	-	-	-
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	-	-	0.2	-
Cation Exchange Capacity	0.05	meq/100g	-	-	6.8	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	MW03 0-0.2 Soil S19-Fe01482 Jan 29, 2019	MW03 0.4-0.5 Soil S19-Fe01483 Jan 29, 2019	MW03 1.5-1.6 Soil S19-Fe01484 Jan 29, 2019	MW03 2.9-3.0 Soil S19-Fe01485 Jan 29, 2019
Chloride	5	mg/kg	230	-	1900	1900
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	190	1000	1100	1200
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.3	5.0	5.9	7.3
Resistivity*	0.5	ohm.m	52	-	9.1	8.7
Sulphate (as SO4)	30	mg/kg	45	-	230	170
Exchangeable Sodium Percentage (ESP)	0.1	%	14	-	43	44
Magnesium (exchangeable)	0.1	meq/100g	11	-	2.2	1.5
Potassium (exchangeable)	0.1	meq/100g	0.3	-	< 0.1	< 0.1
Sodium (exchangeable)	0.1	meq/100g	2.3	-	1.7	1.3
% Moisture	1	%	9.0	17	13	14
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	3.5	-	< 0.1	< 0.1
Cation Exchange Capacity	0.05	meq/100g	17	-	4.0	2.9

Client Sample ID			QA20190130MN_04
Sample Matrix			Soil
Eurofins | mgt Sample No.			S19-Fe01486
Date Sampled			Jan 30, 2019
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
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 C10-36 (Total)	50	mg/kg	< 50
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	%	67
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
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
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
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	1	mg/kg	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	109
Tetrachloro-m-xylene (surr.)	1	%	116

Client Sample ID			QA20190130MN_04
Sample Matrix			**Soil**
Eurofins | mgt Sample No.			**S19-Fe01486**
Date Sampled			**Jan 30, 2019**
Test/Reference	LOR	Unit	
% Moisture	1	%	14
Heavy Metals			
Arsenic	2	mg/kg	2.7
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	8.5
Copper	5	mg/kg	8.7
Lead	5	mg/kg	8.4
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	< 5
Zinc	5	mg/kg	10

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 (regarding both quality and NATA accreditation).

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 | mgt Suite B7A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Feb 06, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Feb 06, 2019	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 06, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 06, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Feb 06, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (Halogenated)	Melbourne	Feb 06, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Feb 06, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Melbourne	Feb 06, 2019	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Organochlorine Pesticides	Melbourne	Feb 06, 2019	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Feb 05, 2019	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Clay	Brisbane	Feb 05, 2019	6 Day
- Method: LTM-GEN-7040			
Chloride	Melbourne	Feb 06, 2019	28 Day
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Feb 06, 2019	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Sulphate (as SO4)	Melbourne	Feb 06, 2019	28 Day
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Melbourne	Feb 06, 2019	7 Day
- Method: LTM-INO-4030 Conductivity			
Magnesium (exchangeable)	Melbourne	Feb 07, 2019	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity and ESP			
Potassium (exchangeable)	Melbourne	Feb 07, 2019	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity and ESP			
Sodium (exchangeable)	Melbourne	Feb 07, 2019	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity and ESP			
Cation Exchange Capacity	Melbourne	Feb 08, 2019	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
Exchangeable Sodium Percentage (ESP)	Melbourne	Feb 07, 2019	28 Day
- Method: LTM-MET-3060 - Cation Exchange Capacity (CEC) & Exchangeable Sodium Percentage (ESP)			
% Moisture	Melbourne	Feb 01, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			

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Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
Report #: 638491
Phone: 02 8245 0300
Fax:

Received: Feb 1, 2019 11:21 AM
Due: Feb 8, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	CANCELLED	Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7A
Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																	
1	TP02 0-0.15	Jan 30, 2019		Soil	S19-Fe01404		X						X					X	X	X		X
2	TP02 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01405					X		X								X		
3	TP02 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01406					X		X			X					X		
4	TP01 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01407		X			X		X	X	X						X		X
5	TP01 0.4-0.5	Jan 30, 2019		Soil	S19-Fe01408				X													
6	TP01 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01409	X												X	X	X		
7	TP03 0-0.15	Jan 30, 2019		Soil	S19-Fe01410		X						X	X						X		X
8	TP05 0-0.1	Jan 30, 2019		Soil	S19-Fe01411		X						X			X				X	X	X
9	TP05 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01412				X													

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

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Order No.:
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Phone: 02 8245 0300
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Received: Feb 1, 2019 11:21 AM
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Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	CANCELLED	Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7A
Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
10	TP05 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01413													X	X	X		
11	TP05 1.5-1.6	Jan 30, 2019		Soil	S19-Fe01414					X		X								X		
12	TP11 0-0.1	Jan 30, 2019		Soil	S19-Fe01415		X													X		X
13	TP11 1.1-1.2	Jan 30, 2019		Soil	S19-Fe01416										X					X		
14	TP12 0-0.1	Jan 30, 2019		Soil	S19-Fe01417	X	X								X		X			X	X	
15	TP12 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01418					X		X			X					X		
16	TP12 1.8-1.9	Jan 30, 2019		Soil	S19-Fe01419													X	X	X		
17	TP13 0-0.1	Jan 30, 2019		Soil	S19-Fe01420		X													X		X
18	TP13 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01421										X					X		
19	TP09 0.0-0.1	Jan 30, 2019		Soil	S19-Fe01422										X		X			X	X	
20	TP09 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01423										X					X		
21	TP18 0-0.1	Jan 30, 2019		Soil	S19-Fe01424		X						X					X	X	X		X

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Sydney
NSW 2000

Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
Report #: 638491
Phone: 02 8245 0300
Fax:

Received: Feb 1, 2019 11:21 AM
Due: Feb 8, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	CANCELLED	Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7A
Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
22	TP18 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01425					X		X			X					X		
23	TP17 0-0.1	Jan 30, 2019		Soil	S19-Fe01426										X					X		
24	TP17 0.3-0.4	Jan 30, 2019		Soil	S19-Fe01427		X						X							X		X
25	TP17 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01428										X					X		
26	TP16 0-0.1	Jan 30, 2019		Soil	S19-Fe01429		X								X		X			X	X	
27	TP16 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01430										X					X		
28	TP20 0-0.1	Jan 31, 2019		Soil	S19-Fe01431										X					X		
29	TP20 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01432										X		X			X	X	
30	TP20 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01433					X		X								X		
31	TP20 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01434													X	X	X		
32	TP21 0.0-0.1	Jan 31, 2019		Soil	S19-Fe01435										X					X		
33	TP21 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01436										X		X			X	X	

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
34	TP22 0-0.1	Jan 31, 2019		Soil	S19-Fe01437								X							X		X
35	TP22 0.6-0.7	Jan 31, 2019		Soil	S19-Fe01438										X			X	X	X		
36	TP22 1.5-1.6	Jan 31, 2019		Soil	S19-Fe01439					X		X								X		
37	TP24 0-0.1	Jan 31, 2019		Soil	S19-Fe01440										X					X		
38	TP24 0.2-0.3	Jan 31, 2019		Soil	S19-Fe01441								X		X		X			X	X	
39	TP28 0-0.1	Jan 31, 2019		Soil	S19-Fe01442								X		X					X		
40	TP28 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01443															X		X
41	TP32 0-0.1	Jan 31, 2019		Soil	S19-Fe01444					X		X	X		X		X			X	X	
42	TP32 0.7-0.8	Jan 31, 2019		Soil	S19-Fe01445													X	X	X		
43	TP32 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01446					X		X			X					X		
44	TP34 0-0.1	Jan 31, 2019		Soil	S19-Fe01447										X					X		
45	TP34 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01448										X		X			X	X	

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
46	TP30 0-0.1	Jan 31, 2019		Soil	S19-Fe01449								X					X	X	X		X
47	TP30 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01450										X					X		
48	TP26 0-0.1	Jan 31, 2019		Soil	S19-Fe01451								X		X					X		
49	TP26 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01452										X		X			X	X	
50	TP31 0-0.1	Jan 31, 2019		Soil	S19-Fe01453										X		X			X	X	
51	TP31 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01454													X	X	X		
52	TP31 1.5-1.6	Jan 31, 2019		Soil	S19-Fe01455										X					X		
53	TP33 0-0.1	Jan 31, 2019		Soil	S19-Fe01456										X		X			X	X	
54	TP33 0.8-0.9	Jan 31, 2019		Soil	S19-Fe01457										X					X		
55	QA20190130MN_01	Jan 30, 2019		Soil	S19-Fe01458										X		X			X	X	
56	QA20190130MN_03	Jan 30, 2019		Soil	S19-Fe01459		X						X	X						X		X

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
57	TP00 0-0.15	Jan 30, 2019		Soil	S19-Fe01460		X						X	X						X		
58	TP00 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01461					X		X								X		
59	TP00 0.4-0.5	Jan 30, 2019		Soil	S19-Fe01462													X	X	X		
60	TP00 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01463					X		X								X		
61	TP04 0-0.1	Jan 30, 2019		Soil	S19-Fe01464								X		X		X			X	X	
62	TP04 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01465		X						X	X						X		X
63	TP06 0-0.2	Jan 29, 2019		Soil	S19-Fe01466	X	X						X		X		X			X	X	
64	TP06 0.8-0.9	Jan 29, 2019		Soil	S19-Fe01467													X	X	X		
65	TP07 0-0.1	Jan 29, 2019		Soil	S19-Fe01468		X						X		X		X			X	X	
66	TP15 0-0.1	Jan 30, 2019		Soil	S19-Fe01469													X	X	X		
67	TP15 0.3-0.4	Jan 30, 2019		Soil	S19-Fe01470					X		X								X		
68	TP15 1.7-1.8	Jan 29, 2019		Soil	S19-Fe01471					X		X								X		

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
69	MW01 0-0.2	Jan 29, 2019		Soil	S19-Fe01472								X							X		
70	MW01 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01473					X		X								X		
71	MW01 1.0-1.1	Jan 29, 2019		Soil	S19-Fe01474	X												X	X	X		
72	MW01 1.5-1.6	Jan 29, 2019		Soil	S19-Fe01475					X		X								X		
73	MW01 5.5-5.6	Jan 29, 2019		Soil	S19-Fe01476													X	X	X		
74	MW02 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01477													X	X	X		
75	MW02 1.2-1.3	Jan 29, 2019		Soil	S19-Fe01478										X		X			X	X	
76	MW02 1.9-2.0	Jan 29, 2019		Soil	S19-Fe01479					X		X								X		
77	MW02 3.0-3.1	Jan 29, 2019		Soil	S19-Fe01480													X	X	X		
78	MW02 6.0-6.1	Jan 29, 2019		Soil	S19-Fe01481					X		X								X		
79	MW03 0-0.2	Jan 29, 2019		Soil	S19-Fe01482													X	X	X		
80	MW03 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01483					X		X								X		

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
81	MW03 1.5-1.6	Jan 29, 2019		Soil	S19-Fe01484													X	X	X		
82	MW03 2.9-3.0	Jan 29, 2019		Soil	S19-Fe01485													X	X	X		
83	QA20190130MN_04	Jan 30, 2019		Soil	S19-Fe01486								X		X		X			X	X	
84	TRIP BLANK 29-1	Jan 29, 2019		Water	S19-Fe01487												X					
85	TRIP SPIKE 29-1	Jan 29, 2019		Water	S19-Fe01488												X					
86	TRIP BLANK 31-1	Jan 31, 2019		Water	S19-Fe01489												X					
87	TRIP SPIKE 31-1	Jan 31, 2019		Water	S19-Fe01490												X					
88	RINSATE 29-1	Jan 29, 2019		Water	S19-Fe01491				X													
89	RINSATE 30-1	Jan 30, 2019		Water	S19-Fe01492				X													

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
90	RINSATE 31-1	Jan 31, 2019		Water	S19-Fe01493								X	X								X
91	TP03 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01541						X											
92	TP11 0.3-0.4	Jan 30, 2019		Soil	S19-Fe01542						X											
93	TP11 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01543						X											
94	TP13 1.8-1.9	Jan 30, 2019		Soil	S19-Fe01544						X											
95	TP09 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01545						X											
96	TP18 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01546						X											
97	TP17 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01547						X											
98	TP16 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01548						X											
99	TP21 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01549						X											
100	TP21 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01550						X											
101	TP24 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01551						X											

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
102	TP24 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01552						X											
103	TP28 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01553						X											
104	TP28 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01554						X											
105	TP34 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01555						X											
106	TP34 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01556						X											
107	TP30 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01557						X											
108	TP26 1.5-1.6	Jan 31, 2019		Soil	S19-Fe01558						X											
109	TP33 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01559						X											
110	QA2019013MN_02	Jan 30, 2019		Soil	S19-Fe01560						X											
111	TP04 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01561						X											
112	TP07 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01562						X											

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Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
Report #: 638491
Phone: 02 8245 0300
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Received: Feb 1, 2019 11:21 AM
Due: Feb 8, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	CANCELLED	Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7A
Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
113	TP07 1.3-1.4	Jan 29, 2019		Soil	S19-Fe01563						X											
114	TP15 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01564						X											
115	MW01 2.0-2.1	Jan 29, 2019		Soil	S19-Fe01565						X											
116	MW02 0-0.2	Jan 29, 2019		Soil	S19-Fe01566						X											
117	TP01	Jan 30, 2019		Building Materials	S19-Fe01567			X														
118	TP01 0-0.1	Jan 30, 2019		Soil	S19-Fe01594						X											
Test Counts						4	15	1	4	19	27	19	21	6	37	1	21	20	20	81	18	14

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, April 2011 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. 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 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
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.
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 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 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	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	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							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
% Clay	%	< 1			1	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	100			70-130	Pass	
TRH C10-C14	%	77			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	98			70-130	Pass	
Toluene	%	101			70-130	Pass	
Ethylbenzene	%	102			70-130	Pass	
m&p-Xylenes	%	94			70-130	Pass	
Xylenes - Total	%	99			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	89			70-130	Pass	
TRH C6-C10	%	95			70-130	Pass	
TRH >C10-C16	%	90			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	82			70-130	Pass	
Acenaphthylene	%	99			70-130	Pass	
Anthracene	%	75			70-130	Pass	
Benz(a)anthracene	%	94			70-130	Pass	
Benzo(a)pyrene	%	84			70-130	Pass	
Benzo(b&j)fluoranthene	%	83			70-130	Pass	
Benzo(g.h.i)perylene	%	89			70-130	Pass	
Benzo(k)fluoranthene	%	88			70-130	Pass	
Chrysene	%	73			70-130	Pass	
Dibenz(a.h)anthracene	%	82			70-130	Pass	
Fluoranthene	%	88			70-130	Pass	
Fluorene	%	111			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	106			70-130	Pass	
Naphthalene	%	82			70-130	Pass	
Phenanthrene	%	88			70-130	Pass	
Pyrene	%	92			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	71			70-130	Pass	
4.4'-DDD	%	86			70-130	Pass	
4.4'-DDE	%	109			70-130	Pass	
4.4'-DDT	%	76			70-130	Pass	
a-BHC	%	75			70-130	Pass	
Aldrin	%	72			70-130	Pass	
b-BHC	%	87			70-130	Pass	
d-BHC	%	91			70-130	Pass	
Dieldrin	%	84			70-130	Pass	
Endosulfan I	%	87			70-130	Pass	
Endosulfan II	%	105			70-130	Pass	
Endosulfan sulphate	%	91			70-130	Pass	
Endrin	%	99			70-130	Pass	
Endrin aldehyde	%	95			70-130	Pass	
Endrin ketone	%	122			70-130	Pass	
g-BHC (Lindane)	%	86			70-130	Pass	
Heptachlor	%	84			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor epoxide	%	77			70-130	Pass	
Hexachlorobenzene	%	88			70-130	Pass	
Methoxychlor	%	104			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	101			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	83			30-130	Pass	
2.4-Dichlorophenol	%	117			30-130	Pass	
2.4.5-Trichlorophenol	%	124			30-130	Pass	
2.4.6-Trichlorophenol	%	98			30-130	Pass	
2.6-Dichlorophenol	%	94			30-130	Pass	
4-Chloro-3-methylphenol	%	123			30-130	Pass	
Pentachlorophenol	%	89			30-130	Pass	
Tetrachlorophenols - Total	%	83			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	116			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	108			30-130	Pass	
2-Methylphenol (o-Cresol)	%	66			30-130	Pass	
2-Nitrophenol	%	100			30-130	Pass	
2.4-Dimethylphenol	%	65			30-130	Pass	
2.4-Dinitrophenol	%	117			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	118			30-130	Pass	
4-Nitrophenol	%	43			30-130	Pass	
Dinoseb	%	111			30-130	Pass	
Phenol	%	91			30-130	Pass	
LCS - % Recovery							
% Clay	%	107			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	114			80-120	Pass	
Cadmium	%	109			80-120	Pass	
Chromium	%	120			80-120	Pass	
Copper	%	120			80-120	Pass	
Lead	%	98			80-120	Pass	
Mercury	%	111			75-125	Pass	
Nickel	%	120			80-120	Pass	
Zinc	%	117			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M19-Fe07985	NCP	%	79			70-130	Pass	
Acenaphthylene	M19-Fe07985	NCP	%	108			70-130	Pass	
Anthracene	M19-Fe07985	NCP	%	112			70-130	Pass	
Benz(a)anthracene	M19-Fe07985	NCP	%	91			70-130	Pass	
Benzo(a)pyrene	M19-Fe07985	NCP	%	75			70-130	Pass	
Benzo(b&j)fluoranthene	M19-Fe07985	NCP	%	77			70-130	Pass	
Benzo(g.h.i)perylene	M19-Fe07985	NCP	%	98			70-130	Pass	
Benzo(k)fluoranthene	M19-Fe07985	NCP	%	96			70-130	Pass	
Chrysene	M19-Fe07985	NCP	%	75			70-130	Pass	
Dibenz(a.h)anthracene	M19-Fe07985	NCP	%	81			70-130	Pass	
Fluoranthene	M19-Fe07985	NCP	%	122			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluorene	M19-Fe07985	NCP	%	120			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M19-Fe07985	NCP	%	122			70-130	Pass	
Naphthalene	M19-Fe07985	NCP	%	85			70-130	Pass	
Phenanthrene	M19-Fe07985	NCP	%	122			70-130	Pass	
Pyrene	M19-Fe07985	NCP	%	118			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M19-Fe07978	NCP	%	82			70-130	Pass	
4.4'-DDD	M19-Fe04821	NCP	%	89			70-130	Pass	
4.4'-DDE	M19-Fe04821	NCP	%	110			70-130	Pass	
4.4'-DDT	M19-Fe04821	NCP	%	98			70-130	Pass	
a-BHC	M19-Fe07978	NCP	%	96			70-130	Pass	
Aldrin	M19-Fe07978	NCP	%	88			70-130	Pass	
b-BHC	M19-Fe07978	NCP	%	71			70-130	Pass	
d-BHC	M19-Fe04821	NCP	%	95			70-130	Pass	
Dieldrin	M19-Fe07978	NCP	%	88			70-130	Pass	
Endosulfan I	M19-Fe07978	NCP	%	88			70-130	Pass	
Endosulfan II	M19-Fe07978	NCP	%	90			70-130	Pass	
Endosulfan sulphate	M19-Fe04821	NCP	%	118			70-130	Pass	
Endrin	M19-Fe04821	NCP	%	128			70-130	Pass	
Endrin aldehyde	M19-Fe07978	NCP	%	79			70-130	Pass	
g-BHC (Lindane)	M19-Fe07978	NCP	%	92			70-130	Pass	
Heptachlor	M19-Fe04821	NCP	%	84			70-130	Pass	
Heptachlor epoxide	M19-Fe04821	NCP	%	77			70-130	Pass	
Hexachlorobenzene	M19-Fe07978	NCP	%	114			70-130	Pass	
Methoxychlor	M19-Fe04821	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M19-Fe07985	NCP	%	60			30-130	Pass	
2.4-Dichlorophenol	M19-Fe07985	NCP	%	88			30-130	Pass	
2.4.5-Trichlorophenol	M19-Fe07985	NCP	%	85			30-130	Pass	
2.4.6-Trichlorophenol	M19-Fe07985	NCP	%	75			30-130	Pass	
2.6-Dichlorophenol	M19-Fe07985	NCP	%	84			30-130	Pass	
4-Chloro-3-methylphenol	M19-Fe07985	NCP	%	89			30-130	Pass	
Pentachlorophenol	M19-Fe03337	NCP	%	88			30-130	Pass	
Tetrachlorophenols - Total	M19-Fe07985	NCP	%	50			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	M19-Fe03337	NCP	%	72			30-130	Pass	
2-Methyl-4.6-dinitrophenol	M19-Fe03337	NCP	%	111			30-130	Pass	
2-Methylphenol (o-Cresol)	M19-Fe07985	NCP	%	93			30-130	Pass	
2-Nitrophenol	M19-Fe07985	NCP	%	74			30-130	Pass	
2.4-Dimethylphenol	M19-Fe07985	NCP	%	92			30-130	Pass	
2.4-Dinitrophenol	M19-Fe07985	NCP	%	38			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M19-Fe07985	NCP	%	87			30-130	Pass	
4-Nitrophenol	M19-Fe07985	NCP	%	61			30-130	Pass	
Dinoseb	M19-Fe03337	NCP	%	100			30-130	Pass	
Phenol	M19-Fe07985	NCP	%	72			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chloride	S19-Fe01409	CP	%	86			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S19-Fe01410	CP	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
BTEX				Result 1					
Benzene	S19-Fe01410	CP	%	95			70-130	Pass	
Toluene	S19-Fe01410	CP	%	99			70-130	Pass	
Ethylbenzene	S19-Fe01410	CP	%	102			70-130	Pass	
m&p-Xylenes	S19-Fe01410	CP	%	93			70-130	Pass	
o-Xylene	S19-Fe01410	CP	%	104			70-130	Pass	
Xylenes - Total	S19-Fe01410	CP	%	96			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S19-Fe01410	CP	%	80			70-130	Pass	
TRH C6-C10	S19-Fe01410	CP	%	97			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Endrin ketone	M19-Fe00929	NCP	%	112			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium	S19-Fe01429	CP	%	81			75-125	Pass	
Chromium	S19-Fe01429	CP	%	114			75-125	Pass	
Mercury	S19-Fe01429	CP	%	85			70-130	Pass	
Nickel	S19-Fe01429	CP	%	104			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S19-Fe01437	CP	%	100			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S19-Fe01437	CP	%	102			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S19-Fe01441	CP	%	95			75-125	Pass	
Cadmium	S19-Fe01441	CP	%	91			75-125	Pass	
Chromium	S19-Fe01441	CP	%	99			75-125	Pass	
Copper	S19-Fe01441	CP	%	98			75-125	Pass	
Lead	S19-Fe01441	CP	%	97			75-125	Pass	
Mercury	S19-Fe01441	CP	%	94			70-130	Pass	
Nickel	S19-Fe01441	CP	%	96			75-125	Pass	
Zinc	S19-Fe01441	CP	%	96			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S19-Fe01452	CP	%	109			75-125	Pass	
Cadmium	S19-Fe01452	CP	%	101			75-125	Pass	
Chromium	S19-Fe01452	CP	%	114			75-125	Pass	
Copper	S19-Fe01452	CP	%	112			75-125	Pass	
Lead	S19-Fe01452	CP	%	109			75-125	Pass	
Mercury	S19-Fe01452	CP	%	107			70-130	Pass	
Nickel	S19-Fe01452	CP	%	114			75-125	Pass	
Zinc	S19-Fe01452	CP	%	114			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S19-Fe01458	CP	%	93			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S19-Fe01458	CP	%	95			70-130	Pass	
Toluene	S19-Fe01458	CP	%	90			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	S19-Fe01458	CP	%	91			70-130	Pass	
m&p-Xylenes	S19-Fe01458	CP	%	82			70-130	Pass	
o-Xylene	S19-Fe01458	CP	%	94			70-130	Pass	
Xylenes - Total	S19-Fe01458	CP	%	86			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S19-Fe01458	CP	%	87			70-130	Pass	
TRH C6-C10	S19-Fe01458	CP	%	89			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S19-Fe01459	CP	%	80			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S19-Fe01459	CP	%	80			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	P19-Fe01569	NCP	%	78			70-130	Pass	
Aroclor-1260	P19-Fe01569	NCP	%	93			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
Exchangeable Sodium Percentage (ESP)	S19-Fe01404	CP	%	1.0	1.0	2.0	30%	Pass	
Magnesium (exchangeable)	S19-Fe01404	CP	meq/100g	1.7	1.5	15	30%	Pass	
Potassium (exchangeable)	S19-Fe01404	CP	meq/100g	0.5	0.5	16	30%	Pass	
Sodium (exchangeable)	S19-Fe01404	CP	meq/100g	0.4	0.3	8.0	30%	Pass	
% Moisture	S19-Fe01404	CP	%	21	20	1.0	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Calcium (exchangeable)	S19-Fe01404	CP	meq/100g	36	33	6.0	30%	Pass	
Cation Exchange Capacity	S19-Fe01404	CP	meq/100g	38	36	7.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S19-Fe01407	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S19-Fe01407	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S19-Fe01407	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S19-Fe01407	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S19-Fe01407	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S19-Fe01407	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S19-Fe01407	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S19-Fe01407	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Benzo(g.h.i)perylene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S19-Fe01407	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S19-Fe01407	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	S19-Fe01407	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	S19-Fe01407	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	S19-Fe01407	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	S19-Fe01407	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	S19-Fe01407	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S19-Fe01407	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S19-Fe01407	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S19-Fe01407	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	S19-Fe01407	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	S19-Fe01407	CP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S19-Fe01407	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	S19-Fe01407	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	S19-Fe01407	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	S19-Fe01407	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
% Clay	M19-Ja22661	NCP	%	6.3	6.3	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-Fe01416	CP	%	18	18	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S19-Fe01424	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S19-Fe01424	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	S19-Fe01424	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	S19-Fe01424	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	S19-Fe01424	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	S19-Fe01424	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	S19-Fe01424	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S19-Fe01424	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S19-Fe01424	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S19-Fe01424	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	S19-Fe01424	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	S19-Fe01424	CP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S19-Fe01424	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	S19-Fe01424	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	S19-Fe01424	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	S19-Fe01424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	S19-Fe01425	CP	uS/cm	130	150	18	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	S19-Fe01425	CP	pH Units	5.8	5.7	pass	30%	Pass	
Resistivity*	S19-Fe01425	CP	ohm.m	80	67	18	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-Fe01426	CP	%	12	12	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S19-Fe01429	CP	mg/kg	7.1	7.6	8.0	30%	Pass	
Cadmium	S19-Fe01429	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S19-Fe01429	CP	mg/kg	16	16	4.0	30%	Pass	
Copper	S19-Fe01429	CP	mg/kg	9.8	10	7.0	30%	Pass	
Lead	S19-Fe01429	CP	mg/kg	9.5	9.9	5.0	30%	Pass	
Mercury	S19-Fe01429	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S19-Fe01429	CP	mg/kg	5.4	5.8	6.0	30%	Pass	
Zinc	S19-Fe01429	CP	mg/kg	11	12	8.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S19-Fe01436	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S19-Fe01436	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S19-Fe01436	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S19-Fe01436	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S19-Fe01436	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S19-Fe01436	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-Fe01436	CP	%	8.1	8.5	5.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S19-Fe01441	CP	mg/kg	5.3	6.0	13	30%	Pass	
Cadmium	S19-Fe01441	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S19-Fe01441	CP	mg/kg	17	19	12	30%	Pass	
Copper	S19-Fe01441	CP	mg/kg	13	14	13	30%	Pass	
Lead	S19-Fe01441	CP	mg/kg	10	11	12	30%	Pass	
Mercury	S19-Fe01441	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S19-Fe01441	CP	mg/kg	< 5	5.0	10	30%	Pass	
Zinc	S19-Fe01441	CP	mg/kg	14	16	13	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	S19-Fe01445	CP	uS/cm	1100	1100	2.4	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	S19-Fe01445	CP	pH Units	4.7	4.7	pass	30%	Pass	
Resistivity*	S19-Fe01445	CP	ohm.m	8.9	9.1	2.4	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-Fe01446	CP	%	14	14	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S19-Fe01451	CP	mg/kg	4.6	5.0	8.0	30%	Pass	
Cadmium	S19-Fe01451	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S19-Fe01451	CP	mg/kg	28	24	15	30%	Pass	
Copper	S19-Fe01451	CP	mg/kg	12	9.9	17	30%	Pass	
Lead	S19-Fe01451	CP	mg/kg	15	15	2.0	30%	Pass	
Mercury	S19-Fe01451	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S19-Fe01451	CP	mg/kg	11	11	2.0	30%	Pass	
Zinc	S19-Fe01451	CP	mg/kg	17	15	12	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S19-Fe01452	CP	mg/kg	3.5	3.1	12	30%	Pass	
Cadmium	S19-Fe01452	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S19-Fe01452	CP	mg/kg	15	14	4.0	30%	Pass	
Copper	S19-Fe01452	CP	mg/kg	9.6	9.3	4.0	30%	Pass	
Lead	S19-Fe01452	CP	mg/kg	12	12	3.0	30%	Pass	
Mercury	S19-Fe01452	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S19-Fe01452	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S19-Fe01452	CP	mg/kg	6.2	6.0	3.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S19-Fe01456	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S19-Fe01456	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S19-Fe01456	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S19-Fe01456	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S19-Fe01456	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S19-Fe01456	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S19-Fe01456	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S19-Fe01456	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S19-Fe01456	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-Fe01456	CP	%	5.8	5.8	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Exchangeable Sodium Percentage (ESP)	S19-Fe01462	CP	%	14	14	4.0	30%	Pass	
Magnesium (exchangeable)	S19-Fe01462	CP	meq/100g	4.4	4.5	3.0	30%	Pass	
Potassium (exchangeable)	S19-Fe01462	CP	meq/100g	0.1	0.1	8.0	30%	Pass	
Sodium (exchangeable)	S19-Fe01462	CP	meq/100g	1.0	1.1	8.0	30%	Pass	

Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Calcium (exchangeable)	S19-Fe01462	CP	meq/100g	1.9	1.9	2.0	30%	Pass	
Cation Exchange Capacity	S19-Fe01462	CP	meq/100g	7.4	7.6	3.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-Fe01466	CP	%	18	17	7.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S19-Fe01466	CP	mg/kg	18	16	13	30%	Pass	
Cadmium	S19-Fe01466	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S19-Fe01466	CP	mg/kg	27	26	2.0	30%	Pass	
Copper	S19-Fe01466	CP	mg/kg	57	54	5.0	30%	Pass	
Lead	S19-Fe01466	CP	mg/kg	25	23	8.0	30%	Pass	
Mercury	S19-Fe01466	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S19-Fe01466	CP	mg/kg	14	15	7.0	30%	Pass	
Zinc	S19-Fe01466	CP	mg/kg	190	180	7.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S19-Fe01467	CP	mg/kg	430	520	19	30%	Pass	
Sulphate (as SO4)	S19-Fe01467	CP	mg/kg	240	250	5.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-Fe01476	CP	%	17	17	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	S19-Fe01482	CP	uS/cm	190	180	6.9	30%	Pass	
Resistivity*	S19-Fe01482	CP	ohm.m	52	55	6.9	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-Fe01486	CP	%	14	14	4.0	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

Authorised By

Nibha Vaidya	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)
Julie Kay	Senior Analyst-Inorganic (VIC)
Nibha Vaidya	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

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Rohan Hammond**

Report **638491-W**
Project name MAMRE ROAD KEMPS CREEK
Project ID 54963
Received Date Feb 01, 2019

Client Sample ID			**TRIP BLANK 29-1**	**R20 TRIP SPIKE 29-1**	**TRIP BLANK 31-1**	**R20 TRIP SPIKE 31-1**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S19-Fe01487**	**S19-Fe01488**	**S19-Fe01489**	**S19-Fe01490**
Date Sampled			**Jan 29, 2019**	**Jan 29, 2019**	**Jan 31, 2019**	**Jan 31, 2019**
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.001	mg/L	< 0.001	95	< 0.001	100
Toluene	0.001	mg/L	< 0.001	110	< 0.001	120
Ethylbenzene	0.001	mg/L	< 0.001	120	< 0.001	110
m&p-Xylenes	0.002	mg/L	< 0.002	110	< 0.002	110
o-Xylene	0.001	mg/L	< 0.001	120	< 0.001	120
Xylenes - Total	0.003	mg/L	< 0.003	120	< 0.003	110
4-Bromofluorobenzene (surr.)	1	%	127	124	122	112

Client Sample ID			**RINSATE 31-1**
Sample Matrix			**Water**
Eurofins | mgt Sample No.			**S19-Fe01493**
Date Sampled			**Jan 31, 2019**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	126
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene N02	0.01	mg/L	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1) N04	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2) N01	0.05	mg/L	< 0.05

Client Sample ID			RINSATE 31-1
Sample Matrix			Water
Eurofins | mgt Sample No.			S19-Fe01493
Date Sampled			Jan 31, 2019
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
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	%	68
p-Terphenyl-d14 (surr.)	1	%	89
Organochlorine Pesticides			
Chlordanes - Total	0.001	mg/L	< 0.001
4.4'-DDD	0.0001	mg/L	< 0.0001
4.4'-DDE	0.0001	mg/L	< 0.0001
4.4'-DDT	0.0001	mg/L	< 0.0001
a-BHC	0.0001	mg/L	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001
b-BHC	0.0001	mg/L	< 0.0001
d-BHC	0.0001	mg/L	< 0.0001
Dieldrin	0.0001	mg/L	< 0.0001
Endosulfan I	0.0001	mg/L	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001
Endosulfan sulphate	0.0001	mg/L	< 0.0001
Endrin	0.0001	mg/L	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001
Toxaphene	0.01	mg/L	< 0.01
Aldrin and Dieldrin (Total)*	0.0001	mg/L	< 0.0001
DDT + DDE + DDD (Total)*	0.0001	mg/L	< 0.0001
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	< 0.001
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	< 0.001

Client Sample ID			RINSATE 31-1
Sample Matrix			Water
Eurofins | mgt Sample No.			S19-Fe01493
Date Sampled			Jan 31, 2019
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
Dibutylchlorendate (surr.)	1	%	83
Tetrachloro-m-xylene (surr.)	1	%	93
Polychlorinated Biphenyls			
Aroclor-1016	0.001	mg/L	< 0.001
Aroclor-1221	0.001	mg/L	< 0.001
Aroclor-1232	0.001	mg/L	< 0.001
Aroclor-1242	0.001	mg/L	< 0.001
Aroclor-1248	0.001	mg/L	< 0.001
Aroclor-1254	0.001	mg/L	< 0.001
Aroclor-1260	0.001	mg/L	< 0.001
Total PCB*	0.001	mg/L	< 0.001
Dibutylchlorendate (surr.)	1	%	83
Tetrachloro-m-xylene (surr.)	1	%	93
Phenols (Halogenated)			
2-Chlorophenol	0.003	mg/L	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01
Phenols (non-Halogenated)			
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03
Dinoseb	0.1	mg/L	< 0.1
Phenol	0.003	mg/L	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1
Phenol-d6 (surr.)	1	%	42
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 (regarding both quality and NATA accreditation).

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 | mgt Suite B7A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Feb 06, 2019	7 Day
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Feb 05, 2019	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 05, 2019	7 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 06, 2019	7 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Feb 06, 2019	7 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (Halogenated)	Melbourne	Feb 06, 2019	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Feb 06, 2019	7 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Melbourne	Feb 05, 2019	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Organochlorine Pesticides	Melbourne	Feb 06, 2019	7 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Melbourne	Feb 06, 2019	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			

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Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
Report #: 638491
Phone: 02 8245 0300
Fax:

Received: Feb 1, 2019 11:21 AM
Due: Feb 8, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	CANCELLED	Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7A
Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																	
1	TP02 0-0.15	Jan 30, 2019		Soil	S19-Fe01404		X						X					X	X	X		X
2	TP02 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01405					X		X								X		
3	TP02 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01406					X		X			X					X		
4	TP01 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01407		X			X		X	X	X						X		X
5	TP01 0.4-0.5	Jan 30, 2019		Soil	S19-Fe01408				X													
6	TP01 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01409	X												X	X	X		
7	TP03 0-0.15	Jan 30, 2019		Soil	S19-Fe01410		X						X	X						X		X
8	TP05 0-0.1	Jan 30, 2019		Soil	S19-Fe01411		X						X			X				X	X	X
9	TP05 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01412				X													

ABN– 50 005 085 521
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Address: Level 1, 50 Margaret St
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Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
Report #: 638491
Phone: 02 8245 0300
Fax:

Received: Feb 1, 2019 11:21 AM
Due: Feb 8, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	CANCELLED	Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7A
Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
10	TP05 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01413													X	X	X		
11	TP05 1.5-1.6	Jan 30, 2019		Soil	S19-Fe01414					X		X								X		
12	TP11 0-0.1	Jan 30, 2019		Soil	S19-Fe01415		X													X		X
13	TP11 1.1-1.2	Jan 30, 2019		Soil	S19-Fe01416										X					X		
14	TP12 0-0.1	Jan 30, 2019		Soil	S19-Fe01417	X	X								X		X			X	X	
15	TP12 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01418					X		X			X					X		
16	TP12 1.8-1.9	Jan 30, 2019		Soil	S19-Fe01419													X	X	X		
17	TP13 0-0.1	Jan 30, 2019		Soil	S19-Fe01420		X													X		X
18	TP13 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01421										X					X		
19	TP09 0.0-0.1	Jan 30, 2019		Soil	S19-Fe01422										X		X			X	X	
20	TP09 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01423										X					X		
21	TP18 0-0.1	Jan 30, 2019		Soil	S19-Fe01424		X						X					X	X	X		X

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Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
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Fax:

Received: Feb 1, 2019 11:21 AM
Due: Feb 8, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
22	TP18 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01425					X		X			X					X		
23	TP17 0-0.1	Jan 30, 2019		Soil	S19-Fe01426										X					X		
24	TP17 0.3-0.4	Jan 30, 2019		Soil	S19-Fe01427		X						X							X		X
25	TP17 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01428										X					X		
26	TP16 0-0.1	Jan 30, 2019		Soil	S19-Fe01429		X								X		X			X	X	
27	TP16 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01430										X					X		
28	TP20 0-0.1	Jan 31, 2019		Soil	S19-Fe01431										X					X		
29	TP20 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01432										X		X			X	X	
30	TP20 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01433					X		X								X		
31	TP20 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01434													X	X	X		
32	TP21 0.0-0.1	Jan 31, 2019		Soil	S19-Fe01435										X					X		
33	TP21 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01436										X		X			X	X	

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
34	TP22 0-0.1	Jan 31, 2019		Soil	S19-Fe01437								X							X		X
35	TP22 0.6-0.7	Jan 31, 2019		Soil	S19-Fe01438										X			X	X	X		
36	TP22 1.5-1.6	Jan 31, 2019		Soil	S19-Fe01439					X		X								X		
37	TP24 0-0.1	Jan 31, 2019		Soil	S19-Fe01440										X					X		
38	TP24 0.2-0.3	Jan 31, 2019		Soil	S19-Fe01441								X		X		X			X	X	
39	TP28 0-0.1	Jan 31, 2019		Soil	S19-Fe01442								X		X					X		
40	TP28 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01443															X		X
41	TP32 0-0.1	Jan 31, 2019		Soil	S19-Fe01444					X		X	X		X		X			X	X	
42	TP32 0.7-0.8	Jan 31, 2019		Soil	S19-Fe01445													X	X	X		
43	TP32 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01446					X		X			X					X		
44	TP34 0-0.1	Jan 31, 2019		Soil	S19-Fe01447										X					X		
45	TP34 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01448										X		X			X	X	

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
46	TP30 0-0.1	Jan 31, 2019		Soil	S19-Fe01449								X					X	X	X		X
47	TP30 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01450										X					X		
48	TP26 0-0.1	Jan 31, 2019		Soil	S19-Fe01451								X		X					X		
49	TP26 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01452										X		X			X	X	
50	TP31 0-0.1	Jan 31, 2019		Soil	S19-Fe01453										X		X			X	X	
51	TP31 0.4-0.5	Jan 31, 2019		Soil	S19-Fe01454													X	X	X		
52	TP31 1.5-1.6	Jan 31, 2019		Soil	S19-Fe01455										X					X		
53	TP33 0-0.1	Jan 31, 2019		Soil	S19-Fe01456										X		X			X	X	
54	TP33 0.8-0.9	Jan 31, 2019		Soil	S19-Fe01457										X					X		
55	QA20190130MN_01	Jan 30, 2019		Soil	S19-Fe01458										X		X			X	X	
56	QA20190130MN_03	Jan 30, 2019		Soil	S19-Fe01459		X						X	X						X		X

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
57	TP00 0-0.15	Jan 30, 2019		Soil	S19-Fe01460		X						X	X						X		
58	TP00 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01461					X		X								X		
59	TP00 0.4-0.5	Jan 30, 2019		Soil	S19-Fe01462													X	X	X		
60	TP00 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01463					X		X								X		
61	TP04 0-0.1	Jan 30, 2019		Soil	S19-Fe01464								X		X		X			X	X	
62	TP04 0.2-0.3	Jan 30, 2019		Soil	S19-Fe01465		X						X	X						X		X
63	TP06 0-0.2	Jan 29, 2019		Soil	S19-Fe01466	X	X						X		X		X			X	X	
64	TP06 0.8-0.9	Jan 29, 2019		Soil	S19-Fe01467													X	X	X		
65	TP07 0-0.1	Jan 29, 2019		Soil	S19-Fe01468		X						X		X		X			X	X	
66	TP15 0-0.1	Jan 30, 2019		Soil	S19-Fe01469													X	X	X		
67	TP15 0.3-0.4	Jan 30, 2019		Soil	S19-Fe01470					X		X								X		
68	TP15 1.7-1.8	Jan 29, 2019		Soil	S19-Fe01471					X		X								X		

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
69	MW01 0-0.2	Jan 29, 2019		Soil	S19-Fe01472								X							X		
70	MW01 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01473					X		X								X		
71	MW01 1.0-1.1	Jan 29, 2019		Soil	S19-Fe01474	X												X	X	X		
72	MW01 1.5-1.6	Jan 29, 2019		Soil	S19-Fe01475					X		X								X		
73	MW01 5.5-5.6	Jan 29, 2019		Soil	S19-Fe01476													X	X	X		
74	MW02 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01477													X	X	X		
75	MW02 1.2-1.3	Jan 29, 2019		Soil	S19-Fe01478										X		X			X	X	
76	MW02 1.9-2.0	Jan 29, 2019		Soil	S19-Fe01479					X		X								X		
77	MW02 3.0-3.1	Jan 29, 2019		Soil	S19-Fe01480													X	X	X		
78	MW02 6.0-6.1	Jan 29, 2019		Soil	S19-Fe01481					X		X								X		
79	MW03 0-0.2	Jan 29, 2019		Soil	S19-Fe01482													X	X	X		
80	MW03 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01483					X		X								X		

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
81	MW03 1.5-1.6	Jan 29, 2019		Soil	S19-Fe01484													X	X	X		
82	MW03 2.9-3.0	Jan 29, 2019		Soil	S19-Fe01485													X	X	X		
83	QA20190130MN_04	Jan 30, 2019		Soil	S19-Fe01486								X		X		X			X	X	
84	TRIP BLANK 29-1	Jan 29, 2019		Water	S19-Fe01487												X					
85	TRIP SPIKE 29-1	Jan 29, 2019		Water	S19-Fe01488												X					
86	TRIP BLANK 31-1	Jan 31, 2019		Water	S19-Fe01489												X					
87	TRIP SPIKE 31-1	Jan 31, 2019		Water	S19-Fe01490												X					
88	RINSATE 29-1	Jan 29, 2019		Water	S19-Fe01491				X													
89	RINSATE 30-1	Jan 30, 2019		Water	S19-Fe01492				X													

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Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
90	RINSATE 31-1	Jan 31, 2019		Water	S19-Fe01493								X	X								X
91	TP03 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01541						X											
92	TP11 0.3-0.4	Jan 30, 2019		Soil	S19-Fe01542						X											
93	TP11 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01543						X											
94	TP13 1.8-1.9	Jan 30, 2019		Soil	S19-Fe01544						X											
95	TP09 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01545						X											
96	TP18 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01546						X											
97	TP17 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01547						X											
98	TP16 1.7-1.8	Jan 30, 2019		Soil	S19-Fe01548						X											
99	TP21 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01549						X											
100	TP21 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01550						X											
101	TP24 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01551						X											

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Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	CANCELLED	Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7A
Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
102	TP24 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01552						X											
103	TP28 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01553						X											
104	TP28 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01554						X											
105	TP34 1.0-1.1	Jan 31, 2019		Soil	S19-Fe01555						X											
106	TP34 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01556						X											
107	TP30 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01557						X											
108	TP26 1.5-1.6	Jan 31, 2019		Soil	S19-Fe01558						X											
109	TP33 1.7-1.8	Jan 31, 2019		Soil	S19-Fe01559						X											
110	QA2019013MN_02	Jan 30, 2019		Soil	S19-Fe01560						X											
111	TP04 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01561						X											
112	TP07 0.4-0.5	Jan 29, 2019		Soil	S19-Fe01562						X											

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Project ID: 54963

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Received: Feb 1, 2019 11:21 AM
Due: Feb 8, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

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Sample Detail						% Clay	Asbestos - WA guidelines	Asbestos Absence /Presence	CANCELLED	Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Total Recoverable Hydrocarbons	Eurofins | mgt Suite B7A
Melbourne Laboratory - NATA Site # 1254 & 14271										X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X	X	X													
Brisbane Laboratory - NATA Site # 20794						X																
Perth Laboratory - NATA Site # 23736																						
113	TP07 1.3-1.4	Jan 29, 2019		Soil	S19-Fe01563						X											
114	TP15 1.0-1.1	Jan 30, 2019		Soil	S19-Fe01564						X											
115	MW01 2.0-2.1	Jan 29, 2019		Soil	S19-Fe01565						X											
116	MW02 0-0.2	Jan 29, 2019		Soil	S19-Fe01566						X											
117	TP01	Jan 30, 2019		Building Materials	S19-Fe01567			X														
118	TP01 0-0.1	Jan 30, 2019		Soil	S19-Fe01594						X											
Test Counts						4	15	1	4	19	27	19	21	6	37	1	21	20	20	81	18	14

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, April 2011 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. 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 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
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.
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 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 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/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
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							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	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							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.001			0.001	Pass	
Aroclor-1221	mg/L	< 0.001			0.001	Pass	
Aroclor-1232	mg/L	< 0.001			0.001	Pass	
Aroclor-1242	mg/L	< 0.001			0.001	Pass	
Aroclor-1248	mg/L	< 0.001			0.001	Pass	
Aroclor-1254	mg/L	< 0.001			0.001	Pass	
Aroclor-1260	mg/L	< 0.001			0.001	Pass	
Total PCB*	mg/L	< 0.001			0.001	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	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							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C6-C9	%	110			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	76			70-130	Pass	
Toluene	%	115			70-130	Pass	
Ethylbenzene	%	118			70-130	Pass	
m&p-Xylenes	%	118			70-130	Pass	
Xylenes - Total	%	119			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	114			70-130	Pass	
TRH C6-C10	%	112			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	119			70-130	Pass	
Acenaphthylene	%	117			70-130	Pass	
Anthracene	%	103			70-130	Pass	
Benz(a)anthracene	%	98			70-130	Pass	
Benzo(a)pyrene	%	108			70-130	Pass	
Benzo(b&j)fluoranthene	%	88			70-130	Pass	
Benzo(g.h.i)perylene	%	114			70-130	Pass	
Benzo(k)fluoranthene	%	93			70-130	Pass	
Chrysene	%	125			70-130	Pass	
Dibenz(a.h)anthracene	%	124			70-130	Pass	
Fluoranthene	%	97			70-130	Pass	
Fluorene	%	122			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	84			70-130	Pass	
Naphthalene	%	115			70-130	Pass	
Phenanthrene	%	88			70-130	Pass	
Pyrene	%	103			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	97			70-130	Pass	
4.4'-DDD	%	99			70-130	Pass	
4.4'-DDE	%	101			70-130	Pass	
4.4'-DDT	%	129			70-130	Pass	
a-BHC	%	84			70-130	Pass	
Aldrin	%	83			70-130	Pass	
b-BHC	%	79			70-130	Pass	
d-BHC	%	96			70-130	Pass	
Dieldrin	%	102			70-130	Pass	
Endosulfan I	%	78			70-130	Pass	
Endosulfan II	%	88			70-130	Pass	
Endosulfan sulphate	%	90			70-130	Pass	
Endrin	%	87			70-130	Pass	
Endrin aldehyde	%	75			70-130	Pass	
Endrin ketone	%	116			70-130	Pass	
g-BHC (Lindane)	%	85			70-130	Pass	
Heptachlor	%	115			70-130	Pass	
Heptachlor epoxide	%	94			70-130	Pass	
Hexachlorobenzene	%	107			70-130	Pass	
Methoxychlor	%	118			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Chlorophenol	%	104			30-130	Pass	
2.4-Dichlorophenol	%	106			30-130	Pass	
2.4.5-Trichlorophenol	%	75			30-130	Pass	
2.4.6-Trichlorophenol	%	94			30-130	Pass	
2.6-Dichlorophenol	%	38			30-130	Pass	
4-Chloro-3-methylphenol	%	84			30-130	Pass	
Pentachlorophenol	%	33			30-130	Pass	
Tetrachlorophenols - Total	%	54			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	87			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	79			30-130	Pass	
2-Methylphenol (o-Cresol)	%	116			30-130	Pass	
2-Nitrophenol	%	110			30-130	Pass	
2.4-Dimethylphenol	%	82			30-130	Pass	
2.4-Dinitrophenol	%	78			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	107			30-130	Pass	
4-Nitrophenol	%	36			30-130	Pass	
Dinoseb	%	117			30-130	Pass	
Phenol	%	58			30-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	98			80-120	Pass	
Cadmium	%	103			80-120	Pass	
Chromium	%	102			80-120	Pass	
Copper	%	101			80-120	Pass	
Lead	%	105			80-120	Pass	
Mercury	%	98			75-125	Pass	
Nickel	%	102			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									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M19-Fe00060	NCP	%	99			70-130	Pass	
Acenaphthylene	M19-Fe00060	NCP	%	97			70-130	Pass	
Anthracene	M19-Fe00060	NCP	%	90			70-130	Pass	
Benz(a)anthracene	M19-Fe00060	NCP	%	85			70-130	Pass	
Benzo(a)pyrene	M19-Fe00060	NCP	%	94			70-130	Pass	
Benzo(b&j)fluoranthene	M19-Fe00060	NCP	%	60			70-130	Fail	Q08
Benzo(g.h.i)perylene	M19-Fe00060	NCP	%	67			70-130	Fail	Q08
Benzo(k)fluoranthene	M19-Fe00060	NCP	%	85			70-130	Pass	
Chrysene	M19-Fe00060	NCP	%	112			70-130	Pass	
Dibenz(a.h)anthracene	M19-Fe00060	NCP	%	62			70-130	Fail	Q08
Fluoranthene	M19-Fe00060	NCP	%	123			70-130	Pass	
Fluorene	M19-Fe00060	NCP	%	103			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M19-Fe00060	NCP	%	71			70-130	Pass	
Naphthalene	M19-Fe00060	NCP	%	99			70-130	Pass	
Phenanthrene	M19-Fe00060	NCP	%	113			70-130	Pass	
Pyrene	M19-Fe00060	NCP	%	131			70-130	Fail	Q08
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S19-Ja23947	NCP	%	98			70-130	Pass	
4.4'-DDD	M19-Ja23029	NCP	%	89			70-130	Pass	
4.4'-DDE	S19-Ja23947	NCP	%	99			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDT	S19-Ja23947	NCP	%	80			70-130	Pass	
a-BHC	S19-Ja23947	NCP	%	85			70-130	Pass	
Aldrin	S19-Ja23947	NCP	%	94			70-130	Pass	
b-BHC	S19-Ja23947	NCP	%	84			70-130	Pass	
d-BHC	S19-Ja23947	NCP	%	91			70-130	Pass	
Dieldrin	S19-Ja23947	NCP	%	78			70-130	Pass	
Endosulfan I	M19-Ja23029	NCP	%	78			70-130	Pass	
Endosulfan II	M19-Ja23029	NCP	%	95			70-130	Pass	
Endosulfan sulphate	M19-Ja23029	NCP	%	77			70-130	Pass	
Endrin	S19-Ja23947	NCP	%	82			70-130	Pass	
Endrin aldehyde	M19-Fe01757	NCP	%	105			70-130	Pass	
Endrin ketone	M19-Ja23029	NCP	%	79			70-130	Pass	
g-BHC (Lindane)	S19-Ja23947	NCP	%	83			70-130	Pass	
Heptachlor	S19-Ja23947	NCP	%	81			70-130	Pass	
Heptachlor epoxide	S19-Ja23947	NCP	%	79			70-130	Pass	
Hexachlorobenzene	S19-Ja23947	NCP	%	90			70-130	Pass	
Methoxychlor	M19-Ja23029	NCP	%	120			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M19-Fe00060	NCP	%	97			30-130	Pass	
2.4-Dichlorophenol	M19-Fe00060	NCP	%	102			30-130	Pass	
2.4.5-Trichlorophenol	M19-Fe00060	NCP	%	110			30-130	Pass	
2.4.6-Trichlorophenol	M19-Fe00060	NCP	%	77			30-130	Pass	
2.6-Dichlorophenol	M19-Fe00060	NCP	%	102			30-130	Pass	
4-Chloro-3-methylphenol	M19-Fe00060	NCP	%	97			30-130	Pass	
Pentachlorophenol	M19-Fe00060	NCP	%	83			30-130	Pass	
Tetrachlorophenols - Total	M19-Fe00060	NCP	%	91			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	M19-Fe00060	NCP	%	120			30-130	Pass	
2-Methyl-4.6-dinitrophenol	M19-Fe00060	NCP	%	79			30-130	Pass	
2-Methylphenol (o-Cresol)	M19-Fe00060	NCP	%	83			30-130	Pass	
2-Nitrophenol	M19-Fe00060	NCP	%	116			30-130	Pass	
2.4-Dimethylphenol	M19-Fe00060	NCP	%	66			30-130	Pass	
2.4-Dinitrophenol	M19-Fe00060	NCP	%	110			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M19-Fe00060	NCP	%	77			30-130	Pass	
4-Nitrophenol	M19-Fe00060	NCP	%	57			30-130	Pass	
Dinoseb	M19-Fe00060	NCP	%	100			30-130	Pass	
Phenol	M19-Fe00060	NCP	%	37			30-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M19-Fe04668	NCP	%	97			75-125	Pass	
Cadmium	M19-Fe04668	NCP	%	103			75-125	Pass	
Chromium	M19-Fe04668	NCP	%	101			75-125	Pass	
Copper	M19-Fe04668	NCP	%	100			75-125	Pass	
Lead	M19-Fe04668	NCP	%	105			75-125	Pass	
Mercury	M19-Fe04668	NCP	%	94			70-130	Pass	
Nickel	M19-Fe04668	NCP	%	100			75-125	Pass	
Zinc	M19-Fe04668	NCP	%	101			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	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S19-Ja24391	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M19-Ja23028	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4.4'-DDD	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDE	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDT	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
a-BHC	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Aldrin	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
b-BHC	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
d-BHC	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Dieldrin	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan I	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan II	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan sulphate	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin aldehyde	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin ketone	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
g-BHC (Lindane)	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor epoxide	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Hexachlorobenzene	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Methoxychlor	M19-Ja23028	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S19-Ja24391	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dichlorophenol	S19-Ja24391	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4.5-Trichlorophenol	S19-Ja24391	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	S19-Ja24391	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	S19-Ja24391	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
4-Chloro-3-methylphenol	S19-Ja24391	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Pentachlorophenol	S19-Ja24391	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Tetrachlorophenols - Total	S19-Ja24391	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	

Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S19-Ja24391	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S19-Ja24391	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S19-Ja24391	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Nitrophenol	S19-Ja24391	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dimethylphenol	S19-Ja24391	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	S19-Ja24391	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S19-Ja24391	NCP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
4-Nitrophenol	S19-Ja24391	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Dinoseb	S19-Ja24391	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Phenol	S19-Ja24391	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M19-Fe04668	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	M19-Fe04668	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M19-Fe04668	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	M19-Fe04668	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	M19-Fe04668	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	M19-Fe04668	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M19-Fe04668	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	M19-Fe04668	NCP	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
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
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Nibha Vaidya	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)



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 Pty Ltd
Project: **54963**
Project Name: **Mamre Road Kemps Creek**
Turn around **Standard**

Contact: rhammond@jbsg.com.au
mnoujaim@jbsg.com.au

Sampled by: Milad Noujaim

#638673

Sample Name				Containers			Analysis												
Hole	Depth	Matrix	Date	250 mL Jar	500 mL Bag	Bottles/vials	Metals	BTEX	TRH/BTEX	OCPs	PAH (LL)/Phenols	Asbestos	PCBs	% Clay	ASLP/TCLP	B20	L2	Alkalinity (total and bicarbonate)	pH & EC
TP10	0-0.1	Soil	1/02/2019	1	1		1	1		1	1								
TP10	0.4-0.5	Soil	1/02/2019	1	1		1												
TP14	0-0.1	Soil	1/02/2019	1	1		1	1	1	1									
TP14	0.4-0.5	Soil	1/02/2019	1	1														
TP19	0-0.1	Soil	1/02/2019	1	1		1	1			1								
TP19	0.4-0.5	Soil	1/02/2019	1	1														
TP23	0-0.1	Soil	1/02/2019	1	1		1		1	1	1								
TP23	0.4-0.5	Soil	1/02/2019	1	1														
TP25	0-0.1	Soil	1/02/2019	1	1		1												
TP25	0.4-0.5	Soil	1/02/2019	1	1														
TP27	0-0.1	Soil	1/02/2019	1	1		1	1											
TP27	0.4-0.5	Soil	1/02/2019	1	1														
TP24	0-0.1	Soil	1/02/2019	1	1		1												
TP24	0.4-0.5	Soil	1/02/2019	1	1			1											
TP08	0-0.1	Soil	1/02/2019	1	1		1	1											
TP08	0.4-0.5	Soil	1/02/2019	1	1														
MW01	-	Water	1/02/2019			1	1		1		1							1	1
MW02	-	Water	1/02/2019			1	1		1		1							1	1
MW03	-	Water	1/02/2019			1	1		1		1							1	1
QA20190201	-	Water	1/02/2019			1	1		1		1							1	1
QC20190201	-	Soil	1/02/2019			1													
Trip Spike/Blank (1-2)	-	Soil	1/02/2019			1		1											
Rinsate (1-2)	-	Soil	1/02/2019			1	1		1	1	1								

* Please forward QC20190201 to Envirolab

Chaya 2/2 11.32am Eurofins Mgt 2.23°C

Enviro Sample NSW

To: Nibha Vaidya; COC NSW
Cc: Alena Bounkeua
Subject: RE: Please add - FW: Schedule of Analysis - Mamre Road 54963

From: Rohan Hammond [mailto:RHammond@jbsg.com.au]
Sent: Wednesday, 6 February 2019 8:59 AM
To: Nibha Vaidya
Subject: FW: Schedule of Analysis - Mamre Road 54963

EXTERNAL EMAIL*

HI Nibha,

Forgot to also requested that the water samples MW01, MW02, MW03 and QA20190201 are analysed for pH, sulfate and chloride.

Rohan.

From: Rohan Hammond
Sent: Saturday, 2 February 2019 11:32 AM
To: 'Nibha Vaidya' <NibhaVaidya@eurofins.com>
Cc: 'EnviroSampleNSW@eurofins.com' <EnviroSampleNSW@eurofins.com>; Milad Noujaim <mnoujaim@jbsg.com.au>
Subject: FW: Schedule of Analysis - Mamre Road 54963

Nibha,

Please find attached schedule of analysis for sample dispatch Friday 1-2.

Please contact me to discuss any queries or discrepancies.

Rohan

From: Nibha Vaidya <NibhaVaidya@eurofins.com>
Sent: Friday, 1 February 2019 11:29 AM
To: Rohan Hammond <RHammond@jbsg.com.au>
Subject: RE: Schedule of Analysis - Mamre Road 54963

Perfect, thanks Rohan.

Kind Regards,

Nibha Vaidya
Phone : +61 2 9900 8415
Mobile : +61 499 900 805
Email : NibhaVaidya@eurofins.com

From: Rohan Hammond [mailto:RHammond@jbsg.com.au]
Sent: Friday, 1 February 2019 11:21 AM
To: Nibha Vaidya
Subject: RE: Schedule of Analysis - Mamre Road 54963

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Site # 1254 & 14271

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

Perth
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Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

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

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Rohan Hammond
Project name: MAMRE ROAD KEMPS CREEK
Project ID: 54963
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Feb 4, 2019 11:32 AM
Eurofins | mgt reference: **638673**

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 | mgt Sample Receipt : 2.2 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

QC20190201 sent to Envirolab for analysis. Samples TP24 0-0.1 & TP24 0.4-0.5 not received; analysis cancelled. Additional samples TP29 0-0.1 & TP29 0.4-0.5 received and placed on hold. Asbestos bag not received for TP14 0.4-0.5.

Contact notes

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

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Rohan Hammond - rhammond@jbsg.com.au.

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

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web : www.eurofins.com.au

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NATA # 1261 Site # 20794

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Site # 23736

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

Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
Report #: 638673
Phone: 02 8245 0300
Fax:

Received: Feb 4, 2019 11:32 AM
Due: Feb 11, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						CANCELLED	Chloride	Conductivity (at 25°C)	HOLD	pH (at 25°C)	Sulphate (as SO4)	Total Alkalinity (as CaCO3)	Organochlorine Pesticides	Metals M8	Metals M8 filtered	Phenols (IWRG 621)	BTEX	Moisture Set	Total Recoverable Hydrocarbons	Polycyclic Aromatic Hydrocarbons (Trace level)
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X														
Brisbane Laboratory - NATA Site # 20794																				
Perth Laboratory - NATA Site # 23736																				
External Laboratory																				
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**															
1	TP10 0-0.1	Feb 01, 2019		Soil	S19-Fe02489								X	X		X	X	X		X
2	TP10 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02490									X				X		
3	TP14 0-0.1	Feb 01, 2019		Soil	S19-Fe02491								X	X			X	X	X	
4	TP14 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02492				X											
5	TP19 0-0.1	Feb 01, 2019		Soil	S19-Fe02493									X		X	X	X		X
6	TP19 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02494				X											
7	TP23 0-0.1	Feb 01, 2019		Soil	S19-Fe02495								X	X		X	X	X	X	X
8	TP25 0-0.1	Feb 01, 2019		Soil	S19-Fe02496									X				X		
9	TP27 0-0.1	Feb 01, 2019		Soil	S19-Fe02497									X			X	X		

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Site # 23736

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

Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
Report #: 638673
Phone: 02 8245 0300
Fax:

Received: Feb 4, 2019 11:32 AM
Due: Feb 11, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						CANCELLED	Chloride	Conductivity (at 25°C)	HOLD	pH (at 25°C)	Sulphate (as SO4)	Total Alkalinity (as CaCO3)	Organochlorine Pesticides	Metals M8	Metals M8 filtered	Phenols (IWRG 621)	BTEX	Moisture Set	Total Recoverable Hydrocarbons	Polycyclic Aromatic Hydrocarbons (Trace level)
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X														
Brisbane Laboratory - NATA Site # 20794																				
Perth Laboratory - NATA Site # 23736																				
10	TP24 0-0.1	Feb 01, 2019		Soil	S19-Fe02498	X														
11	TP24 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02499	X														
12	TP08 0-0.1	Feb 01, 2019		Soil	S19-Fe02500									X			X	X		
13	MW01	Feb 01, 2019		Water	S19-Fe02501		X	X		X	X	X			X	X	X		X	X
14	MW02	Feb 01, 2019		Water	S19-Fe02502		X	X		X	X	X			X	X	X		X	X
15	MW03	Feb 01, 2019		Water	S19-Fe02503		X	X		X	X	X			X	X	X		X	X
16	QA20190201	Feb 01, 2019		Water	S19-Fe02504		X	X		X	X	X			X	X	X		X	X
17	TRIP SPIKE	Feb 01, 2019		Water	S19-Fe02505												X			
18	TRIP BLANK	Feb 01, 2019		Water	S19-Fe02506												X			
19	RINSATE	Feb 01, 2019		Water	S19-Fe02507								X	X		X	X		X	X
20	TP23 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02508				X											
21	TP25 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02509				X											

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NSW 2000

Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
Report #: 638673
Phone: 02 8245 0300
Fax:

Received: Feb 4, 2019 11:32 AM
Due: Feb 11, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						CANCELLED	Chloride	Conductivity (at 25°C)	HOLD	pH (at 25°C)	Sulphate (as SO4)	Total Alkalinity (as CaCO3)	Organochlorine Pesticides	Metals M8	Metals M8 filtered	Phenols (IWRG 621)	BTEX	Moisture Set	Total Recoverable Hydrocarbons	Polycyclic Aromatic Hydrocarbons (Trace level)
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X														
Brisbane Laboratory - NATA Site # 20794																				
Perth Laboratory - NATA Site # 23736																				
22	TP27 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02510				X											
23	TP08 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02511				X											
24	TP29 0-0.1	Feb 01, 2019		Soil	S19-Fe02512				X											
25	TP29 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02513				X											
Test Counts						2	4	4	8	4	4	4	4	9	4	8	13	8	7	8

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NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Rohan Hammond**

Report **638673-S**
Project name MAMRE ROAD KEMPS CREEK
Project ID 54963
Received Date Feb 04, 2019

Client Sample ID			**TP10 0-0.1**	**TP10 0.4-0.5**	**TP14 0-0.1**	**TP19 0-0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe02489**	**S19-Fe02490**	**S19-Fe02491**	**S19-Fe02493**
Date Sampled			**Feb 01, 2019**	**Feb 01, 2019**	**Feb 01, 2019**	**Feb 01, 2019**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	-	-	< 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	%	66	-	73	67
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	-
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-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
d-BHC	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	-

Client Sample ID			TP10 0-0.1	TP10 0.4-0.5	TP14 0-0.1	TP19 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe02489	S19-Fe02490	S19-Fe02491	S19-Fe02493
Date Sampled			Feb 01, 2019	Feb 01, 2019	Feb 01, 2019	Feb 01, 2019
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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-BHC (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	1	mg/kg	< 1	-	< 1	-
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	-
Dibutylchlorendate (surr.)	1	%	81	-	87	-
Tetrachloro-m-xylene (surr.)	1	%	80	-	86	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	-	-	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	-	-	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	-	-	< 1
Pentachlorophenol	1	mg/kg	< 1	-	-	< 1
Tetrachlorophenols - Total	1	mg/kg	< 1	-	-	< 1
Total Halogenated Phenol*	1	mg/kg	< 1	-	-	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	-	-	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	-	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	-	-	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	-	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-	< 0.4
4-Nitrophenol	5	mg/kg	< 5	-	-	< 5
Dinoseb	20	mg/kg	< 20	-	-	< 20
Phenol	0.5	mg/kg	< 0.5	-	-	< 0.5
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	-	< 20
Phenol-d6 (surr.)	1	%	74	-	-	72
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.005	mg/kg	< 0.005	-	-	< 0.005
Acenaphthylene	0.005	mg/kg	< 0.005	-	-	< 0.005
Anthracene	0.005	mg/kg	< 0.005	-	-	< 0.005
Benz(a)anthracene	0.005	mg/kg	< 0.005	-	-	< 0.005
Benzo(a)pyrene	0.005	mg/kg	< 0.005	-	-	< 0.005
Benzo(b&j)fluoranthene	0.005	mg/kg	< 0.005	-	-	< 0.005
Benzo(g.h.i)perylene	0.005	mg/kg	< 0.005	-	-	< 0.005
Benzo(k)fluoranthene	0.005	mg/kg	< 0.005	-	-	< 0.005
Chrysene	0.005	mg/kg	< 0.005	-	-	< 0.005
Dibenz(a.h)anthracene	0.005	mg/kg	< 0.005	-	-	< 0.005

Client Sample ID			TP10 0-0.1	TP10 0.4-0.5	TP14 0-0.1	TP19 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe02489	S19-Fe02490	S19-Fe02491	S19-Fe02493
Date Sampled			Feb 01, 2019	Feb 01, 2019	Feb 01, 2019	Feb 01, 2019
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (Trace level)						
Fluoranthene	0.005	mg/kg	< 0.005	-	-	< 0.005
Fluorene	0.005	mg/kg	< 0.005	-	-	< 0.005
Indeno(1.2.3-cd)pyrene	0.005	mg/kg	< 0.005	-	-	< 0.005
Naphthalene	0.005	mg/kg	< 0.005	-	-	< 0.005
Phenanthrene	0.005	mg/kg	< 0.005	-	-	< 0.005
Pyrene	0.005	mg/kg	< 0.005	-	-	< 0.005
Total PAH*	0.005	mg/kg	< 0.005	-	-	< 0.005
2-Fluorobiphenyl (surr.)	1	%	76	-	-	93
p-Terphenyl-d14 (surr.)	1	%	69	-	-	65
Heavy Metals						
Arsenic	2	mg/kg	3.9	12	9.2	7.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	31	26	21
Copper	5	mg/kg	11	17	9.9	9.0
Lead	5	mg/kg	15	16	23	16
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	6.2	< 5	< 5
Zinc	5	mg/kg	17	13	28	26
% Moisture	1	%	11	25	6.9	13

Client Sample ID			TP23 0-0.1	TP25 0-0.1	TP27 0-0.1	TP08 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe02495	S19-Fe02496	S19-Fe02497	S19-Fe02500
Date Sampled			Feb 01, 2019	Feb 01, 2019	Feb 01, 2019	Feb 01, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
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 C10-36 (Total)	50	mg/kg	< 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	%	66	-	73	65
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
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	-	-	-

Client Sample ID			TP23 0-0.1	TP25 0-0.1	TP27 0-0.1	TP08 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Fe02495	S19-Fe02496	S19-Fe02497	S19-Fe02500
Date Sampled			Feb 01, 2019	Feb 01, 2019	Feb 01, 2019	Feb 01, 2019
Test/Reference	LOR	Unit				
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	-	-	-
a-BHC	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-BHC	0.05	mg/kg	< 0.05	-	-	-
d-BHC	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.05	mg/kg	< 0.05	-	-	-
Toxaphene	1	mg/kg	< 1	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	99	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	90	-	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	-	-	-
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	-
2.4.5-Trichlorophenol	1	mg/kg	< 1	-	-	-
2.4.6-Trichlorophenol	1	mg/kg	< 1	-	-	-
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	-	-	-
Pentachlorophenol	1	mg/kg	< 1	-	-	-
Tetrachlorophenols - Total	1	mg/kg	< 1	-	-	-
Total Halogenated Phenol*	1	mg/kg	< 1	-	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	-	-	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	-	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-	-
2-Nitrophenol	1.0	mg/kg	< 1	-	-	-
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-	-
2.4-Dinitrophenol	5	mg/kg	< 5	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-	-
4-Nitrophenol	5	mg/kg	< 5	-	-	-
Dinoseb	20	mg/kg	< 20	-	-	-
Phenol	0.5	mg/kg	< 0.5	-	-	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	-	-
Phenol-d6 (surr.)	1	%	95	-	-	-

Client Sample ID			TP23 0-0.1	TP25 0-0.1	TP27 0-0.1	TP08 0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe02495**	**S19-Fe02496**	**S19-Fe02497**	**S19-Fe02500**
Date Sampled			**Feb 01, 2019**	**Feb 01, 2019**	**Feb 01, 2019**	**Feb 01, 2019**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.005	mg/kg	< 0.005	-	-	-
Acenaphthylene	0.005	mg/kg	< 0.005	-	-	-
Anthracene	0.005	mg/kg	< 0.005	-	-	-
Benz(a)anthracene	0.005	mg/kg	< 0.005	-	-	-
Benzo(a)pyrene	0.005	mg/kg	< 0.005	-	-	-
Benzo(b&j)fluoranthene	0.005	mg/kg	< 0.005	-	-	-
Benzo(g.h.i)perylene	0.005	mg/kg	< 0.005	-	-	-
Benzo(k)fluoranthene	0.005	mg/kg	< 0.005	-	-	-
Chrysene	0.005	mg/kg	< 0.005	-	-	-
Dibenz(a.h)anthracene	0.005	mg/kg	< 0.005	-	-	-
Fluoranthene	0.005	mg/kg	< 0.005	-	-	-
Fluorene	0.005	mg/kg	< 0.005	-	-	-
Indeno(1.2.3-cd)pyrene	0.005	mg/kg	< 0.005	-	-	-
Naphthalene	0.005	mg/kg	< 0.005	-	-	-
Phenanthrene	0.005	mg/kg	< 0.005	-	-	-
Pyrene	0.005	mg/kg	< 0.005	-	-	-
Total PAH*	0.005	mg/kg	< 0.005	-	-	-
2-Fluorobiphenyl (surr.)	1	%	77	-	-	-
p-Terphenyl-d14 (surr.)	1	%	79	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	7.6	4.9	14	6.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	26	21	42	15
Copper	5	mg/kg	8.2	36	13	17
Lead	5	mg/kg	20	21	40	16
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	5.4	6.2	10	10
Zinc	5	mg/kg	15	60	40	26
% Moisture	1	%	9.0	10	5.9	17

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 (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Feb 07, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 07, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 07, 2019	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Feb 07, 2019	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Organochlorine Pesticides	Melbourne	Feb 07, 2019	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polycyclic Aromatic Hydrocarbons (Trace level)	Melbourne	Feb 07, 2019	0 Days
- Method:			
Metals M8	Melbourne	Feb 07, 2019	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Phenols (IWRG 621)			
Phenols (Halogenated)	Melbourne	Feb 07, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Feb 07, 2019	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
% Moisture	Melbourne	Feb 04, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			

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Site # 23736

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

Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
Report #: 638673
Phone: 02 8245 0300
Fax:

Received: Feb 4, 2019 11:32 AM
Due: Feb 11, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						CANCELLED	Chloride	Conductivity (at 25°C)	HOLD	pH (at 25°C)	Sulphate (as SO4)	Total Alkalinity (as CaCO3)	Organochlorine Pesticides	Metals M8	Metals M8 filtered	Phenols (IWRG 621)	BTEX	Moisture Set	Total Recoverable Hydrocarbons	Polycyclic Aromatic Hydrocarbons (Trace level)
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X														
Brisbane Laboratory - NATA Site # 20794																				
Perth Laboratory - NATA Site # 23736																				
External Laboratory																				
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**															
1	TP10 0-0.1	Feb 01, 2019		Soil	S19-Fe02489								X	X		X	X	X		X
2	TP10 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02490									X				X		
3	TP14 0-0.1	Feb 01, 2019		Soil	S19-Fe02491								X	X			X	X	X	
4	TP14 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02492				X											
5	TP19 0-0.1	Feb 01, 2019		Soil	S19-Fe02493									X		X	X	X		X
6	TP19 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02494				X											
7	TP23 0-0.1	Feb 01, 2019		Soil	S19-Fe02495								X	X		X	X	X	X	X
8	TP25 0-0.1	Feb 01, 2019		Soil	S19-Fe02496									X				X		
9	TP27 0-0.1	Feb 01, 2019		Soil	S19-Fe02497									X			X	X		

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Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X														
Brisbane Laboratory - NATA Site # 20794																				
Perth Laboratory - NATA Site # 23736																				
10	TP24 0-0.1	Feb 01, 2019		Soil	S19-Fe02498	X														
11	TP24 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02499	X														
12	TP08 0-0.1	Feb 01, 2019		Soil	S19-Fe02500									X			X	X		
13	MW01	Feb 01, 2019		Water	S19-Fe02501		X	X		X	X	X			X	X	X		X	X
14	MW02	Feb 01, 2019		Water	S19-Fe02502		X	X		X	X	X			X	X	X		X	X
15	MW03	Feb 01, 2019		Water	S19-Fe02503		X	X		X	X	X			X	X	X		X	X
16	QA20190201	Feb 01, 2019		Water	S19-Fe02504		X	X		X	X	X			X	X	X		X	X
17	TRIP SPIKE	Feb 01, 2019		Water	S19-Fe02505												X			
18	TRIP BLANK	Feb 01, 2019		Water	S19-Fe02506												X			
19	RINSATE	Feb 01, 2019		Water	S19-Fe02507								X	X		X	X		X	X
20	TP23 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02508				X											
21	TP25 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02509				X											

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Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X														
Brisbane Laboratory - NATA Site # 20794																				
Perth Laboratory - NATA Site # 23736																				
22	TP27 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02510				X											
23	TP08 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02511				X											
24	TP29 0-0.1	Feb 01, 2019		Soil	S19-Fe02512				X											
25	TP29 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02513				X											
Test Counts						2	4	4	8	4	4	4	4	9	4	8	13	8	7	8

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, April 2011 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. 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 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
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.
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 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 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							
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	
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	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Total PAH*	mg/kg	< 0			0.005	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	%	105			70-130	Pass	
TRH C10-C14	%	88			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	116			70-130	Pass	
Toluene	%	101			70-130	Pass	
Ethylbenzene	%	106			70-130	Pass	
m&p-Xylenes	%	92			70-130	Pass	
Xylenes - Total	%	97			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	102			70-130	Pass	
TRH C6-C10	%	110			70-130	Pass	
TRH >C10-C16	%	87			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	112			70-130	Pass	
4.4'-DDD	%	84			70-130	Pass	
4.4'-DDE	%	118			70-130	Pass	
a-BHC	%	101			70-130	Pass	
Aldrin	%	104			70-130	Pass	
b-BHC	%	87			70-130	Pass	
d-BHC	%	96			70-130	Pass	
Dieldrin	%	103			70-130	Pass	
Endosulfan I	%	101			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	%	110			70-130	Pass	
Endosulfan sulphate	%	77			70-130	Pass	
Endrin	%	83			70-130	Pass	
Endrin aldehyde	%	88			70-130	Pass	
Endrin ketone	%	87			70-130	Pass	
g-BHC (Lindane)	%	117			70-130	Pass	
Heptachlor	%	76			70-130	Pass	
Heptachlor epoxide	%	89			70-130	Pass	
Hexachlorobenzene	%	122			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	99			30-130	Pass	
2.4-Dichlorophenol	%	96			30-130	Pass	
2.4.5-Trichlorophenol	%	95			30-130	Pass	
2.4.6-Trichlorophenol	%	106			30-130	Pass	
2.6-Dichlorophenol	%	96			30-130	Pass	
4-Chloro-3-methylphenol	%	96			30-130	Pass	
Pentachlorophenol	%	98			30-130	Pass	
Tetrachlorophenols - Total	%	98			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	34			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	74			30-130	Pass	
2-Methylphenol (o-Cresol)	%	102			30-130	Pass	
2-Nitrophenol	%	99			30-130	Pass	
2.4-Dimethylphenol	%	120			30-130	Pass	
2.4-Dinitrophenol	%	57			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	104			30-130	Pass	
4-Nitrophenol	%	108			30-130	Pass	
Dinoseb	%	87			30-130	Pass	
Phenol	%	96			30-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	120			80-120	Pass	
Cadmium	%	107			80-120	Pass	
Chromium	%	112			80-120	Pass	
Copper	%	119			80-120	Pass	
Lead	%	118			80-120	Pass	
Mercury	%	101			75-125	Pass	
Nickel	%	116			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									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M19-Fe09278	NCP	%	111			70-130	Pass	
4.4'-DDD	M19-Fe09278	NCP	%	75			70-130	Pass	
4.4'-DDE	M19-Fe09278	NCP	%	109			70-130	Pass	
4.4'-DDT	M19-Fe05021	NCP	%	71			70-130	Pass	
a-BHC	M19-Fe09278	NCP	%	105			70-130	Pass	
Aldrin	M19-Fe09278	NCP	%	111			70-130	Pass	
b-BHC	M19-Fe09278	NCP	%	95			70-130	Pass	
d-BHC	M19-Fe09278	NCP	%	107			70-130	Pass	
Dieldrin	M19-Fe09278	NCP	%	116			70-130	Pass	
Endosulfan I	M19-Fe09278	NCP	%	89			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	M19-Fe09278	NCP	%	101			70-130	Pass	
Endosulfan sulphate	M19-Fe09278	NCP	%	80			70-130	Pass	
Endrin	M19-Fe09278	NCP	%	78			70-130	Pass	
Endrin aldehyde	M19-Fe09278	NCP	%	85			70-130	Pass	
Endrin ketone	M19-Fe09278	NCP	%	103			70-130	Pass	
g-BHC (Lindane)	M19-Fe09278	NCP	%	122			70-130	Pass	
Heptachlor	M19-Fe09278	NCP	%	82			70-130	Pass	
Heptachlor epoxide	M19-Fe09278	NCP	%	100			70-130	Pass	
Hexachlorobenzene	M19-Fe09278	NCP	%	121			70-130	Pass	
Methoxychlor	M19-Fe05021	NCP	%	106			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M19-Fe04529	NCP	%	98			30-130	Pass	
2.4-Dichlorophenol	M19-Fe04529	NCP	%	95			30-130	Pass	
2.4.5-Trichlorophenol	M19-Fe04529	NCP	%	94			30-130	Pass	
2.4.6-Trichlorophenol	M19-Fe04529	NCP	%	98			30-130	Pass	
2.6-Dichlorophenol	M19-Fe04529	NCP	%	96			30-130	Pass	
4-Chloro-3-methylphenol	M19-Fe04529	NCP	%	98			30-130	Pass	
Pentachlorophenol	M19-Fe04529	NCP	%	39			30-130	Pass	
Tetrachlorophenols - Total	M19-Fe04529	NCP	%	92			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	M19-Fe03655	NCP	%	75			30-130	Pass	
2-Methylphenol (o-Cresol)	M19-Fe04529	NCP	%	91			30-130	Pass	
2-Nitrophenol	M19-Fe04529	NCP	%	101			30-130	Pass	
2.4-Dimethylphenol	M19-Fe04529	NCP	%	72			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M19-Fe04529	NCP	%	97			30-130	Pass	
4-Nitrophenol	M19-Fe04529	NCP	%	94			30-130	Pass	
Dinoseb	M19-Fe04529	NCP	%	37			30-130	Pass	
Phenol	M19-Fe04529	NCP	%	98			30-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M19-Fe00618	NCP	%	100			75-125	Pass	
Cadmium	M19-Fe00618	NCP	%	91			75-125	Pass	
Chromium	M19-Fe00618	NCP	%	103			75-125	Pass	
Copper	M19-Fe00618	NCP	%	102			75-125	Pass	
Lead	M19-Fe00618	NCP	%	100			75-125	Pass	
Mercury	M19-Fe00618	NCP	%	92			70-130	Pass	
Nickel	M19-Fe00618	NCP	%	101			75-125	Pass	
Zinc	M19-Fe00618	NCP	%	102			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M19-Fe04529	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M19-Fe04529	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons (Trace level)				Result 1					
Acenaphthene	S19-Fe02493	CP	%	112			70-130	Pass	
Acenaphthylene	S19-Fe02493	CP	%	105			70-130	Pass	
Anthracene	S19-Fe02493	CP	%	92			70-130	Pass	
Benz(a)anthracene	S19-Fe02493	CP	%	113			70-130	Pass	
Benzo(a)pyrene	S19-Fe02493	CP	%	128			70-130	Pass	
Benzo(b&j)fluoranthene	S19-Fe02493	CP	%	74			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(g.h.i)perylene	S19-Fe02493	CP	%	93			70-130	Pass	
Benzo(k)fluoranthene	S19-Fe02493	CP	%	97			70-130	Pass	
Chrysene	S19-Fe02493	CP	%	118			70-130	Pass	
Dibenz(a.h)anthracene	S19-Fe02493	CP	%	96			70-130	Pass	
Fluoranthene	S19-Fe02493	CP	%	94			70-130	Pass	
Fluorene	S19-Fe02493	CP	%	91			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S19-Fe02493	CP	%	119			70-130	Pass	
Naphthalene	S19-Fe02493	CP	%	96			70-130	Pass	
Phenanthrene	S19-Fe02493	CP	%	103			70-130	Pass	
Pyrene	S19-Fe02493	CP	%	96			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S19-Fe02495	CP	%	87			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S19-Fe02495	CP	%	79			70-130	Pass	
Toluene	S19-Fe02495	CP	%	76			70-130	Pass	
Ethylbenzene	S19-Fe02495	CP	%	86			70-130	Pass	
m&p-Xylenes	S19-Fe02495	CP	%	71			70-130	Pass	
o-Xylene	S19-Fe02495	CP	%	86			70-130	Pass	
Xylenes - Total	S19-Fe02495	CP	%	76			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S19-Fe02495	CP	%	82			70-130	Pass	
TRH C6-C10	S19-Fe02495	CP	%	86			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M19-Fe01961	NCP	mg/kg	2.5	2.1	18	30%	Pass	
Cadmium	M19-Fe01961	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M19-Fe01961	NCP	mg/kg	97	89	9.0	30%	Pass	
Copper	M19-Fe01961	NCP	mg/kg	180	160	7.0	30%	Pass	
Lead	M19-Fe01961	NCP	mg/kg	63	56	13	30%	Pass	
Mercury	M19-Fe01961	NCP	mg/kg	0.7	0.6	11	30%	Pass	
Nickel	M19-Fe01961	NCP	mg/kg	28	24	15	30%	Pass	
Zinc	M19-Fe01961	NCP	mg/kg	200	180	12	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M19-Fe06335	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M19-Fe06335	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M19-Fe06335	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M19-Fe06335	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M19-Fe06335	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M19-Fe06335	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-Fe02491	CP	%	6.9	6.4	7.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S19-Fe02493	CP	mg/kg	< 20	< 20	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S19-Fe02493	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S19-Fe02493	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S19-Fe02493	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S19-Fe02493	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S19-Fe02493	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S19-Fe02493	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S19-Fe02493	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S19-Fe02493	CP	mg/kg	< 20	< 20	<1	30%	Pass	

Comments

Sample Integrity

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

Authorised By

Nibha Vaidya	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)



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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The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Rohan Hammond**

Report **638673-W**
Project name MAMRE ROAD KEMPS CREEK
Project ID 54963
Received Date Feb 04, 2019

Client Sample ID			**MW01**	**MW02**	**MW03**	**QA20190201**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S19-Fe02501**	**S19-Fe02502**	**S19-Fe02503**	**S19-Fe02504**
Date Sampled			**Feb 01, 2019**	**Feb 01, 2019**	**Feb 01, 2019**	**Feb 01, 2019**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	0.17	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	0.4	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	0.2	< 0.1	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1	0.77	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	84	63	82	86
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	0.24	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	0.24	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	0.4	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	0.74	< 0.1	< 0.1
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			MW01	MW02	MW03	QA20190201
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S19-Fe02501	S19-Fe02502	S19-Fe02503	S19-Fe02504
Date Sampled			Feb 01, 2019	Feb 01, 2019	Feb 01, 2019	Feb 01, 2019
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	65	72	82	98
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	0.00055	0.00016	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001	0.00055	0.00016	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	93	77	83	99
p-Terphenyl-d14 (surr.)	1	%	130	88	105	131
Chloride	1	mg/L	8400	9300	14000	8300
Conductivity (at 25°C)	1	uS/cm	27000	21000	40000	27000
pH (at 25°C)	0.1	pH Units	7.2	5.8	7.2	7.3
Sulphate (as SO4)	5	mg/L	850	820	1100	850
Alkalinity (speciated)						
Total Alkalinity (as CaCO3)	20	mg/L	1100	1000	1300	1100
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.003	0.002	< 0.001	0.003
Cadmium (filtered)	0.0002	mg/L	0.0003	< 0.0002	< 0.0002	0.0003
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	0.003	0.001	0.003
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.008	0.012	0.004	0.008
Zinc (filtered)	0.005	mg/L	0.020	0.009	0.023	0.041

Client Sample ID			TRIP SPIKE	TRIP BLANK	RINSATE
Sample Matrix			Water	Water	Water
Eurofins | mgt Sample No.			S19-Fe02505	S19-Fe02506	S19-Fe02507
Date Sampled			Feb 01, 2019	Feb 01, 2019	Feb 01, 2019
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	-	-	< 0.02
TRH C10-C14	0.05	mg/L	-	-	< 0.05
TRH C15-C28	0.1	mg/L	-	-	< 0.1
TRH C29-C36	0.1	mg/L	-	-	< 0.1
TRH C10-36 (Total)	0.1	mg/L	-	-	< 0.1
BTEX					
Comments			R20		
Benzene	0.001	mg/L	87	< 0.001	< 0.001
Toluene	0.001	mg/L	96	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	93	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	93	< 0.002	< 0.002
o-Xylene	0.001	mg/L	100	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	95	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	95	80	80
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.01	mg/L	-	-	< 0.01
TRH C6-C10	0.02	mg/L	-	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	-	< 0.02
TRH >C10-C16	0.05	mg/L	-	-	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	-	< 0.05
TRH >C16-C34	0.1	mg/L	-	-	< 0.1
TRH >C34-C40	0.1	mg/L	-	-	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	-	-	< 0.1
Organochlorine Pesticides					
Chlordanes - Total	0.001	mg/L	-	-	< 0.001
4.4'-DDD	0.0001	mg/L	-	-	< 0.0001
4.4'-DDE	0.0001	mg/L	-	-	< 0.0001
4.4'-DDT	0.0001	mg/L	-	-	< 0.0001
a-BHC	0.0001	mg/L	-	-	< 0.0001
Aldrin	0.0001	mg/L	-	-	< 0.0001
b-BHC	0.0001	mg/L	-	-	< 0.0001
d-BHC	0.0001	mg/L	-	-	< 0.0001
Dieldrin	0.0001	mg/L	-	-	< 0.0001
Endosulfan I	0.0001	mg/L	-	-	< 0.0001
Endosulfan II	0.0001	mg/L	-	-	< 0.0001
Endosulfan sulphate	0.0001	mg/L	-	-	< 0.0001
Endrin	0.0001	mg/L	-	-	< 0.0001
Endrin aldehyde	0.0001	mg/L	-	-	< 0.0001
Endrin ketone	0.0001	mg/L	-	-	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	-	-	< 0.0001
Heptachlor	0.0001	mg/L	-	-	< 0.0001
Heptachlor epoxide	0.0001	mg/L	-	-	< 0.0001
Hexachlorobenzene	0.0001	mg/L	-	-	< 0.0001
Methoxychlor	0.0001	mg/L	-	-	< 0.0001
Toxaphene	0.01	mg/L	-	-	< 0.01
Aldrin and Dieldrin (Total)*	0.0001	mg/L	-	-	< 0.0001
DDT + DDE + DDD (Total)*	0.0001	mg/L	-	-	< 0.0001
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	-	-	< 0.001
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	-	-	< 0.001

Client Sample ID			TRIP SPIKE	TRIP BLANK	RINSATE
Sample Matrix			Water	Water	Water
Eurofins | mgt Sample No.			S19-Fe02505	S19-Fe02506	S19-Fe02507
Date Sampled			Feb 01, 2019	Feb 01, 2019	Feb 01, 2019
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
Dibutylchlorendate (surr.)	1	%	-	-	133
Tetrachloro-m-xylene (surr.)	1	%	-	-	114
Phenols (Halogenated)					
2-Chlorophenol	0.003	mg/L	-	-	< 0.003
2.4-Dichlorophenol	0.003	mg/L	-	-	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	-	-	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	-	-	< 0.01
2.6-Dichlorophenol	0.003	mg/L	-	-	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	-	-	< 0.01
Pentachlorophenol	0.01	mg/L	-	-	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	-	-	< 0.03
Total Halogenated Phenol*	0.01	mg/L	-	-	< 0.01
Phenols (non-Halogenated)					
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	-	-	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	-	-	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	-	-	< 0.003
2-Nitrophenol	0.01	mg/L	-	-	< 0.01
2.4-Dimethylphenol	0.003	mg/L	-	-	< 0.003
2.4-Dinitrophenol	0.03	mg/L	-	-	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	-	-	< 0.006
4-Nitrophenol	0.03	mg/L	-	-	< 0.03
Dinoseb	0.1	mg/L	-	-	< 0.1
Phenol	0.003	mg/L	-	-	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	-	-	< 0.1
Phenol-d6 (surr.)	1	%	-	-	100
Polycyclic Aromatic Hydrocarbons (Trace level)					
Acenaphthene	0.00001	mg/L	-	-	< 0.00001
Acenaphthylene	0.00001	mg/L	-	-	< 0.00001
Anthracene	0.00001	mg/L	-	-	< 0.00001
Benz(a)anthracene	0.00001	mg/L	-	-	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	-	-	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	-	-	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	-	-	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	-	-	< 0.00001
Chrysene	0.00001	mg/L	-	-	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	-	-	< 0.00001
Fluoranthene	0.00001	mg/L	-	-	< 0.00001
Fluorene	0.00001	mg/L	-	-	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	-	-	< 0.00001
Naphthalene	0.00001	mg/L	-	-	< 0.00001
Phenanthrene	0.00001	mg/L	-	-	< 0.00001
Pyrene	0.00001	mg/L	-	-	< 0.00001
Total PAH*	0.00001	mg/L	-	-	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	-	-	108
p-Terphenyl-d14 (surr.)	1	%	-	-	123

Client Sample ID			TRIP SPIKE	TRIP BLANK	RINSATE
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S19-Fe02505**	**S19-Fe02506**	**S19-Fe02507**
Date Sampled			**Feb 01, 2019**	**Feb 01, 2019**	**Feb 01, 2019**
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 (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Feb 07, 2019	7 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 07, 2019	7 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 07, 2019	7 Day
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Feb 07, 2019	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Organochlorine Pesticides	Melbourne	Feb 07, 2019	7 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polycyclic Aromatic Hydrocarbons (Trace level)	Melbourne	Feb 07, 2019	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chloride	Melbourne	Feb 07, 2019	28 Day
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Conductivity (at 25°C)	Melbourne	Feb 06, 2019	28 Day
- Method: LTM-INO-4030 Conductivity			
pH (at 25°C)	Melbourne	Feb 06, 2019	0 Hours
- Method: LTM-GEN-7090 pH in water by ISE			
Sulphate (as SO4)	Melbourne	Feb 07, 2019	28 Day
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Alkalinity (speciated)	Melbourne	Feb 06, 2019	14 Day
- Method: APHA 2320 Alkalinity by Titration			
Metals M8	Melbourne	Feb 06, 2019	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Melbourne	Feb 06, 2019	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Phenols (IWRG 621)			
Phenols (Halogenated)	Melbourne	Feb 07, 2019	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Feb 07, 2019	7 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			

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Site # 23736

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

Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
Report #: 638673
Phone: 02 8245 0300
Fax:

Received: Feb 4, 2019 11:32 AM
Due: Feb 11, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						CANCELLED	Chloride	Conductivity (at 25°C)	HOLD	pH (at 25°C)	Sulphate (as SO4)	Total Alkalinity (as CaCO3)	Organochlorine Pesticides	Metals M8	Metals M8 filtered	Phenols (IWRG 621)	BTEX	Moisture Set	Total Recoverable Hydrocarbons	Polycyclic Aromatic Hydrocarbons (Trace level)
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X														
Brisbane Laboratory - NATA Site # 20794																				
Perth Laboratory - NATA Site # 23736																				
External Laboratory																				
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**															
1	TP10 0-0.1	Feb 01, 2019		Soil	S19-Fe02489								X	X		X	X	X		X
2	TP10 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02490									X				X		
3	TP14 0-0.1	Feb 01, 2019		Soil	S19-Fe02491								X	X			X	X	X	
4	TP14 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02492				X											
5	TP19 0-0.1	Feb 01, 2019		Soil	S19-Fe02493									X		X	X	X		X
6	TP19 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02494				X											
7	TP23 0-0.1	Feb 01, 2019		Soil	S19-Fe02495								X	X		X	X	X	X	X
8	TP25 0-0.1	Feb 01, 2019		Soil	S19-Fe02496									X				X		
9	TP27 0-0.1	Feb 01, 2019		Soil	S19-Fe02497									X			X	X		

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Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X														
Brisbane Laboratory - NATA Site # 20794																				
Perth Laboratory - NATA Site # 23736																				
10	TP24 0-0.1	Feb 01, 2019		Soil	S19-Fe02498	X														
11	TP24 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02499	X														
12	TP08 0-0.1	Feb 01, 2019		Soil	S19-Fe02500									X			X	X		
13	MW01	Feb 01, 2019		Water	S19-Fe02501		X	X		X	X	X			X	X	X		X	X
14	MW02	Feb 01, 2019		Water	S19-Fe02502		X	X		X	X	X			X	X	X		X	X
15	MW03	Feb 01, 2019		Water	S19-Fe02503		X	X		X	X	X			X	X	X		X	X
16	QA20190201	Feb 01, 2019		Water	S19-Fe02504		X	X		X	X	X			X	X	X		X	X
17	TRIP SPIKE	Feb 01, 2019		Water	S19-Fe02505												X			
18	TRIP BLANK	Feb 01, 2019		Water	S19-Fe02506												X			
19	RINSATE	Feb 01, 2019		Water	S19-Fe02507								X	X		X	X		X	X
20	TP23 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02508				X											
21	TP25 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02509				X											

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Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X														
Brisbane Laboratory - NATA Site # 20794																				
Perth Laboratory - NATA Site # 23736																				
22	TP27 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02510				X											
23	TP08 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02511				X											
24	TP29 0-0.1	Feb 01, 2019		Soil	S19-Fe02512				X											
25	TP29 0.4-0.5	Feb 01, 2019		Soil	S19-Fe02513				X											
Test Counts						2	4	4	8	4	4	4	4	9	4	8	13	8	7	8

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, April 2011 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. 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 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
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.
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 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 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/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
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							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	mg/L	< 0.00001			0.00001	Pass	
Acenaphthylene	mg/L	< 0.00001			0.00001	Pass	
Anthracene	mg/L	< 0.00001			0.00001	Pass	
Benz(a)anthracene	mg/L	< 0.00001			0.00001	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00001			0.00001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Chrysene	mg/L	< 0.00001			0.00001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00001			0.00001	Pass	
Fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Fluorene	mg/L	< 0.00001			0.00001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00001			0.00001	Pass	
Naphthalene	mg/L	< 0.00001			0.00001	Pass	
Phenanthrene	mg/L	< 0.00001			0.00001	Pass	
Pyrene	mg/L	< 0.00001			0.00001	Pass	
Total PAH*	mg/L	< 0.00001			0.00001	Pass	
Method Blank							
Chloride	mg/L	< 1			1	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Method Blank							
Alkalinity (speciated)							
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	76			70-130	Pass	
TRH C10-C14	%	105			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	85			70-130	Pass	
Toluene	%	98			70-130	Pass	
Ethylbenzene	%	97			70-130	Pass	
m&p-Xylenes	%	97			70-130	Pass	
Xylenes - Total	%	98			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	93			70-130	Pass	
TRH C6-C10	%	73			70-130	Pass	
TRH >C10-C16	%	103			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	78			30-130	Pass	
2.4-Dichlorophenol	%	67			30-130	Pass	
2.4.5-Trichlorophenol	%	64			30-130	Pass	
2.4.6-Trichlorophenol	%	61			30-130	Pass	
2.6-Dichlorophenol	%	65			30-130	Pass	
4-Chloro-3-methylphenol	%	75			30-130	Pass	
Pentachlorophenol	%	46			30-130	Pass	
Tetrachlorophenols - Total	%	58			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	74			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	87			30-130	Pass	
2-Methylphenol (o-Cresol)	%	59			30-130	Pass	
2-Nitrophenol	%	73			30-130	Pass	
2.4-Dinitrophenol	%	50			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	66			30-130	Pass	
4-Nitrophenol	%	71			30-130	Pass	
Dinoseb	%	88			30-130	Pass	
Phenol	%	62			30-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	%	113			70-130	Pass	
Acenaphthylene	%	100			70-130	Pass	
Anthracene	%	88			70-130	Pass	
Benz(a)anthracene	%	85			70-130	Pass	
Benzo(a)pyrene	%	94			70-130	Pass	
Benzo(b&j)fluoranthene	%	89			70-130	Pass	
Benzo(g.h.i)perylene	%	82			70-130	Pass	
Benzo(k)fluoranthene	%	91			70-130	Pass	
Chrysene	%	88			70-130	Pass	
Dibenz(a.h)anthracene	%	94			70-130	Pass	
Fluoranthene	%	73			70-130	Pass	
Fluorene	%	97			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Indeno(1.2.3-cd)pyrene	%	100			70-130	Pass	
Naphthalene	%	97			70-130	Pass	
Phenanthrene	%	78			70-130	Pass	
Pyrene	%	75			70-130	Pass	
LCS - % Recovery							
Chloride	%	106			70-130	Pass	
Sulphate (as SO4)	%	101			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Total Alkalinity (as CaCO3)	%	96			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	108			80-120	Pass	
Arsenic (filtered)	%	93			80-120	Pass	
Cadmium	%	88			80-120	Pass	
Cadmium (filtered)	%	93			80-120	Pass	
Chromium	%	86			80-120	Pass	
Chromium (filtered)	%	93			80-120	Pass	
Copper	%	83			80-120	Pass	
Copper (filtered)	%	93			80-120	Pass	
Lead	%	89			80-120	Pass	
Lead (filtered)	%	95			80-120	Pass	
Mercury	%	83			75-125	Pass	
Mercury (filtered)	%	93			70-130	Pass	
Nickel	%	84			80-120	Pass	
Nickel (filtered)	%	94			80-120	Pass	
Zinc	%	84			80-120	Pass	
Zinc (filtered)	%	97			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S19-Fe06145	NCP	%	87			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S19-Fe06145	NCP	%	85			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chloride	M19-Fe01987	NCP	%	104			70-130	Pass	
Sulphate (as SO4)	M19-Fe02928	NCP	%	137			70-130	Fail	Q08
Spike - % Recovery									
Alkalinity (speciated)				Result 1					
Total Alkalinity (as CaCO3)	M19-Fe02432	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S19-Fe02502	CP	%	100			70-130	Pass	
Cadmium (filtered)	S19-Fe02502	CP	%	87			70-130	Pass	
Chromium (filtered)	S19-Fe02502	CP	%	94			70-130	Pass	
Copper (filtered)	S19-Fe02502	CP	%	86			70-130	Pass	
Lead (filtered)	S19-Fe02502	CP	%	91			70-130	Pass	
Mercury (filtered)	S19-Fe02502	CP	%	89			70-130	Pass	
Nickel (filtered)	S19-Fe02502	CP	%	88			70-130	Pass	
Zinc (filtered)	S19-Fe02502	CP	%	88			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C6-C9	S19-Fe02503	CP	%	73			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S19-Fe02503	CP	%	84			70-130	Pass	
Toluene	S19-Fe02503	CP	%	95			70-130	Pass	
Ethylbenzene	S19-Fe02503	CP	%	91			70-130	Pass	
m&p-Xylenes	S19-Fe02503	CP	%	92			70-130	Pass	
o-Xylene	S19-Fe02503	CP	%	94			70-130	Pass	
Xylenes - Total	S19-Fe02503	CP	%	93			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S19-Fe02503	CP	%	91			70-130	Pass	
TRH C6-C10	S19-Fe02503	CP	%	71			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-Se37052	NCP	%	108			75-125	Pass	
Cadmium	S18-Se37052	NCP	%	95			75-125	Pass	
Chromium	S18-Se37052	NCP	%	102			75-125	Pass	
Copper	S18-Se37052	NCP	%	95			75-125	Pass	
Lead	S18-Se37052	NCP	%	96			75-125	Pass	
Mercury	S18-Se37052	NCP	%	94			70-130	Pass	
Nickel	S18-Se37052	NCP	%	98			75-125	Pass	
Zinc	S18-Se37052	NCP	%	51			75-125	Fail	Q08
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	S19-Fe06144	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S19-Fe06144	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S19-Fe06144	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S19-Fe06144	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S19-Fe06144	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S19-Fe06144	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S19-Fe04220	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dichlorophenol	S19-Fe04220	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4.5-Trichlorophenol	S19-Fe04220	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	S19-Fe04220	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	S19-Fe04220	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
4-Chloro-3-methylphenol	S19-Fe04220	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Pentachlorophenol	S19-Fe04220	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Tetrachlorophenols - Total	S19-Fe04220	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S19-Fe04220	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S19-Fe04220	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S19-Fe04220	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Nitrophenol	S19-Fe04220	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dimethylphenol	S19-Fe04220	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	S19-Fe04220	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S19-Fe04220	NCP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
4-Nitrophenol	S19-Fe04220	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	

Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
Dinoseb	S19-Fe04220	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Phenol	S19-Fe04220	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S19-Fe02501	CP	mg/L	8400	8700	4.0	30%	Pass	
Sulphate (as SO4)	S19-Fe02501	CP	mg/L	850	870	3.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S19-Fe02502	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S19-Fe02502	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S19-Fe02502	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S19-Fe02502	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S19-Fe02502	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S19-Fe02502	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S19-Fe02502	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S19-Fe02502	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S19-Fe02502	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S19-Fe02502	CP	mg/L	0.002	0.002	1.0	30%	Pass	
Cadmium (filtered)	S19-Fe02502	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S19-Fe02502	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S19-Fe02502	CP	mg/L	0.003	0.003	2.0	30%	Pass	
Lead (filtered)	S19-Fe02502	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	S19-Fe02502	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S19-Fe02502	CP	mg/L	0.012	0.012	3.0	30%	Pass	
Zinc (filtered)	S19-Fe02502	CP	mg/L	0.009	0.009	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (at 25°C)	S19-Fe02503	CP	uS/cm	40000	40000	1.0	30%	Pass	
pH (at 25°C)	S19-Fe02503	CP	pH Units	7.2	7.1	pass	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Total Alkalinity (as CaCO3)	S19-Fe02503	CP	mg/L	1300	1400	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-Se37052	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S18-Se37052	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S18-Se37052	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S18-Se37052	NCP	mg/L	0.006	0.006	6.0	30%	Pass	
Lead	S18-Se37052	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S18-Se37052	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S18-Se37052	NCP	mg/L	0.027	0.026	6.0	30%	Pass	
Zinc	S18-Se37052	NCP	mg/L	0.16	0.15	4.0	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.
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Nibha Vaidya	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Julie Kay	Senior Analyst-Inorganic (VIC)



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 Pty Ltd
Project: **54963**
Project Name: **Mamre Road Kemps Creek**
Turn around **Standard**

Sampled by: Milad Noujaim

Contact: rhammond@jbsg.com.au
mnoujaim@jbsg.com.au

Sample Name				Containers			Analysis												
Hole	Depth	Matrix	Date	250 mL Jar	500 mL Bag	Bottles/vials	Metals	BTEX	TRH/BTEX	OCPs	PAH (LL)/Phenols	Asbestos	PCBs	% Clay	ASLP/TCLP	B20	L2	Alkalinity (total and bicarbonate)	pH & EC
TP100	0-0.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP100	0.4-0.5	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
TP100	1.0-1.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP100	1.9-2.0	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
TP101	0-0.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP101	0.2-0.3	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP101	0.5-0.6	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP101	1.1-1.2	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
TP101	1.9-2.0	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP102	0-0.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP102	0.5-0.6	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP102	1.9-2.0	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
TP200	0-0.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP200	0.5-0.6	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP200	1.0-1.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
TP200	1.9-2.0	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP201	0-0.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP201	0.5-0.6	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
TP201	1.0-1.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP201	1.9-2.0	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP300	0-0.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
TP300	0.4-0.5	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP300	1.0-1.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP300	1.9-2.0	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
TP301	0-0.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP301	0.4-0.5	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
TP301	0.0-1.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP301	1.0-1.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
TP301	1.9-2.0	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP302	0-0.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP302	0.5-0.6	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP302	1.1-1.2	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP302	1.9-2.0	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
TP400	0-0.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP400	0.4-0.5	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP400	0.8-0.9	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP401	0-0.1	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TP401	0.4-0.5	Soil	4/02/2019	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
TS/TB	-	Water	4/02/2019	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-

RCVD BY : 9:46 AM
Luca D. 06/02/2019
Eurofins MGT 5.67°C

#639238

eurofins | mgt

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

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Rohan Hammond
Project name: MAMRE ROAD KEMPS CREEK
Project ID: 54963
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Feb 6, 2019 9:46 AM
Eurofins | mgt reference: **639238**

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 | mgt Sample Receipt : 5.7 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

Extra sample received (TP401 0.8-0.9) placed on hold.

Contact notes

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

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Rohan Hammond - rhammond@jbsg.com.au.

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

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

Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
Report #: 639238
Phone: 02 8245 0300
Fax:

Received: Feb 6, 2019 9:46 AM
Due: Feb 13, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	TP100 0-0.1	Feb 04, 2019		Soil	S19-Fe07300				X	X	X
2	TP100 0.4-0.5	Feb 04, 2019		Soil	S19-Fe07301	X		X			X
3	TP100 1.0-1.1	Feb 04, 2019		Soil	S19-Fe07302				X	X	X
4	TP100 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07303	X		X			X
5	TP101 0.2-0.3	Feb 04, 2019		Soil	S19-Fe07304				X	X	X
6	TP101 1.1-1.2	Feb 04, 2019		Soil	S19-Fe07305	X		X			X
7	TP101 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07306				X	X	X
8	TP102 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07307				X	X	X
9	TP102 0.5-0.6	Feb 04, 2019		Soil	S19-Fe07308				X	X	X

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Sample Detail						Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
10	TP102 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07309	X		X			X
11	TP200 0.5-0.6	Feb 04, 2019		Soil	S19-Fe07310				X	X	X
12	TP200 1.0-1.1	Feb 04, 2019		Soil	S19-Fe07311				X	X	X
13	TP200 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07312	X		X			X
14	TP201 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07313				X	X	X
15	TP201 1.0-1.1	Feb 04, 2019		Soil	S19-Fe07314	X		X			X
16	TP201 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07315				X	X	X
17	TP300 0.4-0.5	Feb 04, 2019		Soil	S19-Fe07316				X	X	X
18	TP300 1.0-1.1	Feb 04, 2019		Soil	S19-Fe07317				X	X	X
19	TP300 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07318	X		X			X
20	TP301 0.4-0.5	Feb 04, 2019		Soil	S19-Fe07319				X	X	X
21	TP301 1.0-1.1	Feb 04, 2019		Soil	S19-Fe07320	X		X			X

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Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

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Received: Feb 6, 2019 9:46 AM
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Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
22	TP301 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07321				X	X	X
23	TP302 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07322				X	X	X
24	TP302 0.5-0.6	Feb 04, 2019		Soil	S19-Fe07323				X	X	X
25	TP302 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07324	X		X			X
26	TP400 0.4-0.5	Feb 04, 2019		Soil	S19-Fe07325				X	X	X
27	TP400 0.8-0.9	Feb 04, 2019		Soil	S19-Fe07326				X	X	X
28	TP401 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07327				X	X	X
29	TP401 0.4-0.5	Feb 04, 2019		Soil	S19-Fe07328				X	X	X
30	TP101 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07329		X				
31	TP101 0.5-0.6	Feb 04, 2019		Soil	S19-Fe07330		X				
32	TP200 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07331		X				
33	TP201 0.5-0.6	Feb 04, 2019		Soil	S19-Fe07332		X				

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Order No.:
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Fax:

Received: Feb 6, 2019 9:46 AM
Due: Feb 13, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
34	TP300 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07333		X				
35	TP301 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07334		X				
36	TP302 1.1-1.2	Feb 04, 2019		Soil	S19-Fe07335		X				
37	TP400 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07336		X				
38	TS	Feb 04, 2019		Water	S19-Fe07337		X				
39	TB	Feb 04, 2019		Water	S19-Fe07338		X				
40	TP401 0.8-0.9	Feb 04, 2019		Soil	S19-Fe07339		X				
Test Counts						9	11	9	20	20	29

JBS & G Australia (NSW) P/L
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NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Rohan Hammond**

Report **639238-S**
Project name MAMRE ROAD KEMPS CREEK
Project ID 54963
Received Date Feb 06, 2019

Client Sample ID			**TP100 0-0.1**	**TP100 0.4-0.5**	**TP100 1.0-1.1**	**TP100 1.9-2.0**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe07300**	**S19-Fe07301**	**S19-Fe07302**	**S19-Fe07303**
Date Sampled			**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**
Test/Reference	LOR	Unit				
Chloride	5	mg/kg	160	-	270	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	180	400	320	430
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.3	5.1	5.5	5.2
Resistivity*	0.5	ohm.m	56	-	32	-
Sulphate (as SO4)	30	mg/kg	100	-	84	-
Exchangeable Sodium Percentage (ESP)	0.1	%	27	-	22	-
Magnesium (exchangeable)	0.1	meq/100g	8.3	-	5.5	-
Potassium (exchangeable)	0.1	meq/100g	0.2	-	0.2	-
Sodium (exchangeable)	0.1	meq/100g	3.5	-	1.7	-
% Moisture	1	%	11	11	13	14
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	0.7	-	0.4	-
Cation Exchange Capacity	0.05	meq/100g	13	-	7.8	-

Client Sample ID			**TP101 0.2-0.3**	**TP101 1.1-1.2**	**TP101 1.9-2.0**	**TP102 0.0-0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe07304**	**S19-Fe07305**	**S19-Fe07306**	**S19-Fe07307**
Date Sampled			**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**
Test/Reference	LOR	Unit				
Chloride	5	mg/kg	150	-	170	5.1
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	230	45	150	11
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	5.4	6.3	5.7	7.3
Resistivity*	0.5	ohm.m	43	-	69	930
Sulphate (as SO4)	30	mg/kg	120	-	< 30	< 30
Exchangeable Sodium Percentage (ESP)	0.1	%	31	-	27	11
Magnesium (exchangeable)	0.1	meq/100g	6.3	-	6.8	1.4
Potassium (exchangeable)	0.1	meq/100g	0.5	-	0.2	< 0.1
Sodium (exchangeable)	0.1	meq/100g	3.7	-	2.6	0.3
% Moisture	1	%	8.8	6.9	12	9.1
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	1.2	-	< 0.1	0.9
Cation Exchange Capacity	0.05	meq/100g	12	-	9.6	2.7

Client Sample ID			TP102 0.5-0.6	TP102 1.9-2.0	TP200 0.5-0.6	TP200 1.0-1.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe07308**	**S19-Fe07309**	**S19-Fe07310**	**S19-Fe07311**
Date Sampled			**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**
Test/Reference	LOR	Unit				
Chloride	5	mg/kg	120	-	1900	1500
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	110	430	660	1100
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	5.9	6.8	5.2	5.0
Resistivity*	0.5	ohm.m	89	-	15	8.7
Sulphate (as SO4)	30	mg/kg	51	-	250	160
Exchangeable Sodium Percentage (ESP)	0.1	%	27	-	19	28
Magnesium (exchangeable)	0.1	meq/100g	7.2	-	8.0	8.2
Potassium (exchangeable)	0.1	meq/100g	0.2	-	0.2	0.1
Sodium (exchangeable)	0.1	meq/100g	2.8	-	2.3	3.5
% Moisture	1	%	14	14	17	16
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	0.2	-	1.5	0.8
Cation Exchange Capacity	0.05	meq/100g	10	-	12	13

Client Sample ID			TP200 1.9-2.0	TP201 0.0-0.1	TP201 1.0-1.1	TP201 1.9-2.0
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe07312**	**S19-Fe07313**	**S19-Fe07314**	**S19-Fe07315**
Date Sampled			**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**
Test/Reference	LOR	Unit				
Chloride	5	mg/kg	-	7.4	-	1200
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	330	550	810	810
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	4.9	7.0	5.1	5.0
Resistivity*	0.5	ohm.m	-	18	-	12
Sulphate (as SO4)	30	mg/kg	-	72	-	190
Exchangeable Sodium Percentage (ESP)	0.1	%	-	6.0	-	23
Magnesium (exchangeable)	0.1	meq/100g	-	6.0	-	9.7
Potassium (exchangeable)	0.1	meq/100g	-	0.2	-	0.3
Sodium (exchangeable)	0.1	meq/100g	-	0.6	-	3.1
% Moisture	1	%	19	9.2	17	15
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	-	2.5	-	0.4
Cation Exchange Capacity	0.05	meq/100g	-	9.2	-	13

Client Sample ID			TP300 0.4-0.5	TP300 1.0-1.1	TP300 1.9-2.0	TP301 0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe07316**	**S19-Fe07317**	**S19-Fe07318**	**S19-Fe07319**
Date Sampled			**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**
Test/Reference	LOR	Unit				
Chloride	5	mg/kg	360	570	-	38
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	230	210	650	150
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.2	6.2	8.1	5.9
Resistivity*	0.5	ohm.m	43	47	-	68
Sulphate (as SO4)	30	mg/kg	150	290	-	120
Exchangeable Sodium Percentage (ESP)	0.1	%	21	26	-	10

Client Sample ID			TP300 0.4-0.5	TP300 1.0-1.1	TP300 1.9-2.0	TP301 0.4-0.5
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe07316**	**S19-Fe07317**	**S19-Fe07318**	**S19-Fe07319**
Date Sampled			**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**
Test/Reference	LOR	Unit				
Magnesium (exchangeable)	0.1	meq/100g	10	10	-	6.3
Potassium (exchangeable)	0.1	meq/100g	0.3	0.3	-	0.3
Sodium (exchangeable)	0.1	meq/100g	3.6	4.6	-	1.5
% Moisture	1	%	5.6	12	11	10
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	2.6	2.3	-	7.0
Cation Exchange Capacity	0.05	meq/100g	17	17	-	15

Client Sample ID			TP301 1.0-1.1	TP301 1.9-2.0	TP302 0.0-0.1	TP302 0.5-0.6
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe07320**	**S19-Fe07321**	**S19-Fe07322**	**S19-Fe07323**
Date Sampled			**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**
Test/Reference	LOR	Unit				
Chloride	5	mg/kg	-	410	13	5.5
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	67	300	61	32
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.9	5.6	6.6	6.7
Resistivity*	0.5	ohm.m	-	33	170	310
Sulphate (as SO4)	30	mg/kg	-	230	< 30	68
Exchangeable Sodium Percentage (ESP)	0.1	%	-	29	1.3	3.8
Magnesium (exchangeable)	0.1	meq/100g	-	9.7	2.4	5.2
Potassium (exchangeable)	0.1	meq/100g	-	0.2	0.5	0.2
Sodium (exchangeable)	0.1	meq/100g	-	4.4	0.2	0.4
% Moisture	1	%	9.2	13	10	10
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	-	0.9	8.8	5.5
Cation Exchange Capacity	0.05	meq/100g	-	15	12	11

Client Sample ID			TP302 1.9-2.0	TP400 0.4-0.5	TP400 0.8-0.9	TP401 0.0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Fe07324**	**S19-Fe07325**	**S19-Fe07326**	**S19-Fe07327**
Date Sampled			**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**	**Feb 04, 2019**
Test/Reference	LOR	Unit				
Chloride	5	mg/kg	-	44	320	< 5
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	30	170	310	20
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.4	7.1	7.2	6.0
Resistivity*	0.5	ohm.m	-	59	32	510
Sulphate (as SO4)	30	mg/kg	-	96	38	< 30
Exchangeable Sodium Percentage (ESP)	0.1	%	-	22	24	5.6
Magnesium (exchangeable)	0.1	meq/100g	-	3.8	8.3	0.8
Potassium (exchangeable)	0.1	meq/100g	-	< 0.1	0.2	0.3
Sodium (exchangeable)	0.1	meq/100g	-	1.2	2.9	0.1
% Moisture	1	%	8.8	11	18	7.0
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	-	0.5	0.5	1.3
Cation Exchange Capacity	0.05	meq/100g	-	5.6	12	2.4

Client Sample ID			TP401 0.4-0.5
Sample Matrix			**Soil**
Eurofins | mgt Sample No.			**S19-Fe07328**
Date Sampled			**Feb 04, 2019**
Test/Reference	LOR	Unit	
Chloride	5	mg/kg	8.1
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	6400
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	5.6
Resistivity*	0.5	ohm.m	1.6
Sulphate (as SO4)	30	mg/kg	68
Exchangeable Sodium Percentage (ESP)	0.1	%	14
Magnesium (exchangeable)	0.1	meq/100g	6.3
Potassium (exchangeable)	0.1	meq/100g	0.2
Sodium (exchangeable)	0.1	meq/100g	1.2
% Moisture	1	%	14
Cation Exchange Capacity			
Calcium (exchangeable)	0.1	meq/100g	0.8
Cation Exchange Capacity	0.05	meq/100g	8.4

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 (regarding both quality and NATA accreditation).

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
Chloride	Melbourne	Feb 11, 2019	28 Day
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Feb 11, 2019	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Sulphate (as SO4)	Melbourne	Feb 11, 2019	28 Day
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Melbourne	Feb 11, 2019	7 Day
- Method: LTM-INO-4030 Conductivity			
Magnesium (exchangeable)	Melbourne	Feb 12, 2019	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity and ESP			
Potassium (exchangeable)	Melbourne	Feb 12, 2019	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity and ESP			
Sodium (exchangeable)	Melbourne	Feb 12, 2019	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity and ESP			
Cation Exchange Capacity	Melbourne	Feb 12, 2019	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
Exchangeable Sodium Percentage (ESP)	Melbourne	Feb 12, 2019	28 Day
- Method: LTM-MET-3060 - Cation Exchange Capacity (CEC) & Exchangeable Sodium Percentage (ESP)			
% Moisture	Melbourne	Feb 06, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			

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NATA # 1261
Site # 23736

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

Project Name: MAMRE ROAD KEMPS CREEK
Project ID: 54963

Order No.:
Report #: 639238
Phone: 02 8245 0300
Fax:

Received: Feb 6, 2019 9:46 AM
Due: Feb 13, 2019
Priority: 5 Day
Contact Name: Rohan Hammond

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Conductivity (1:5 aqueous extract at 25°C as rec.)	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	TP100 0-0.1	Feb 04, 2019		Soil	S19-Fe07300				X	X	X
2	TP100 0.4-0.5	Feb 04, 2019		Soil	S19-Fe07301	X		X			X
3	TP100 1.0-1.1	Feb 04, 2019		Soil	S19-Fe07302				X	X	X
4	TP100 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07303	X		X			X
5	TP101 0.2-0.3	Feb 04, 2019		Soil	S19-Fe07304				X	X	X
6	TP101 1.1-1.2	Feb 04, 2019		Soil	S19-Fe07305	X		X			X
7	TP101 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07306				X	X	X
8	TP102 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07307				X	X	X
9	TP102 0.5-0.6	Feb 04, 2019		Soil	S19-Fe07308				X	X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
10	TP102 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07309	X		X			X
11	TP200 0.5-0.6	Feb 04, 2019		Soil	S19-Fe07310				X	X	X
12	TP200 1.0-1.1	Feb 04, 2019		Soil	S19-Fe07311				X	X	X
13	TP200 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07312	X		X			X
14	TP201 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07313				X	X	X
15	TP201 1.0-1.1	Feb 04, 2019		Soil	S19-Fe07314	X		X			X
16	TP201 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07315				X	X	X
17	TP300 0.4-0.5	Feb 04, 2019		Soil	S19-Fe07316				X	X	X
18	TP300 1.0-1.1	Feb 04, 2019		Soil	S19-Fe07317				X	X	X
19	TP300 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07318	X		X			X
20	TP301 0.4-0.5	Feb 04, 2019		Soil	S19-Fe07319				X	X	X
21	TP301 1.0-1.1	Feb 04, 2019		Soil	S19-Fe07320	X		X			X

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
22	TP301 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07321				X	X	X
23	TP302 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07322				X	X	X
24	TP302 0.5-0.6	Feb 04, 2019		Soil	S19-Fe07323				X	X	X
25	TP302 1.9-2.0	Feb 04, 2019		Soil	S19-Fe07324	X		X			X
26	TP400 0.4-0.5	Feb 04, 2019		Soil	S19-Fe07325				X	X	X
27	TP400 0.8-0.9	Feb 04, 2019		Soil	S19-Fe07326				X	X	X
28	TP401 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07327				X	X	X
29	TP401 0.4-0.5	Feb 04, 2019		Soil	S19-Fe07328				X	X	X
30	TP101 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07329		X				
31	TP101 0.5-0.6	Feb 04, 2019		Soil	S19-Fe07330		X				
32	TP200 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07331		X				
33	TP201 0.5-0.6	Feb 04, 2019		Soil	S19-Fe07332		X				

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217											
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
34	TP300 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07333		X				
35	TP301 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07334		X				
36	TP302 1.1-1.2	Feb 04, 2019		Soil	S19-Fe07335		X				
37	TP400 0.0-0.1	Feb 04, 2019		Soil	S19-Fe07336		X				
38	TS	Feb 04, 2019		Water	S19-Fe07337		X				
39	TB	Feb 04, 2019		Water	S19-Fe07338		X				
40	TP401 0.8-0.9	Feb 04, 2019		Soil	S19-Fe07339		X				
Test Counts						9	11	9	20	20	29

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, April 2011 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. 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 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
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.
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 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 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							
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
Exchangeable Sodium Percentage (ESP)	%	< 0.1			0.1	Pass	
Magnesium (exchangeable)	meq/100g	< 0.1			0.1	Pass	
Potassium (exchangeable)	meq/100g	< 0.1			0.1	Pass	
Sodium (exchangeable)	meq/100g	< 0.1			0.1	Pass	
Method Blank							
Cation Exchange Capacity							
Calcium (exchangeable)	meq/100g	< 0.1			0.1	Pass	
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Sulphate (as SO4)	M19-Fe10624	NCP	%	107			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chloride	S19-Fe07302	CP	%	118			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chloride	S19-Fe07317	CP	%	105			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S19-Fe07300	CP	mg/kg	160	220	30	30%	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)	S19-Fe07300	CP	uS/cm	180	210	18	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	S19-Fe07300	CP	pH Units	6.3	6.3	pass	30%	Pass	
Resistivity*	S19-Fe07300	CP	ohm.m	56	47	18	30%	Pass	
% Moisture	S19-Fe07300	CP	%	11	11	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Exchangeable Sodium Percentage (ESP)	S19-Fe07308	CP	%	27	26	<1	30%	Pass	
Magnesium (exchangeable)	S19-Fe07308	CP	meq/100g	7.2	7.2	<1	30%	Pass	
Potassium (exchangeable)	S19-Fe07308	CP	meq/100g	0.2	0.2	5.0	30%	Pass	
Sodium (exchangeable)	S19-Fe07308	CP	meq/100g	2.8	2.8	<1	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Calcium (exchangeable)	S19-Fe07308	CP	meq/100g	0.2	0.2	2.0	30%	Pass	
Cation Exchange Capacity	S19-Fe07308	CP	meq/100g	10	10	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	S19-Fe07310	CP	uS/cm	660	650	1.8	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	S19-Fe07310	CP	pH Units	5.2	5.1	pass	30%	Pass	
Resistivity*	S19-Fe07310	CP	ohm.m	15	15	1.8	30%	Pass	
% Moisture	S19-Fe07310	CP	%	17	17	2.0	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Chloride	S19-Fe07316	CP	mg/kg	360	320	13	30%	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)	S19-Fe07316	CP	uS/cm	230	200	14	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	S19-Fe07316	CP	pH Units	7.2	7.0	pass	30%	Pass	
Resistivity*	S19-Fe07316	CP	ohm.m	43	49	14	30%	Pass	
Sulphate (as SO4)	S19-Fe07316	CP	mg/kg	150	160	4.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-Fe07320	CP	%	9.2	9.3	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Exchangeable Sodium Percentage (ESP)	S19-Fe07327	CP	%	5.6	5.0	11	30%	Pass	
Magnesium (exchangeable)	S19-Fe07327	CP	meq/100g	0.8	0.8	7.0	30%	Pass	
Potassium (exchangeable)	S19-Fe07327	CP	meq/100g	0.3	0.3	4.0	30%	Pass	
Sodium (exchangeable)	S19-Fe07327	CP	meq/100g	0.1	0.1	4.0	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Calcium (exchangeable)	S19-Fe07327	CP	meq/100g	1.3	1.4	8.0	30%	Pass	
Cation Exchange Capacity	S19-Fe07327	CP	meq/100g	2.4	2.6	7.0	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

Authorised By

Nibha Vaidya	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Julie Kay	Senior Analyst-Inorganic (VIC)



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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Enviro Sample Vic

From: Nibha Vaidya
Sent: Wednesday, 13 February 2019 3:21 PM
To: Enviro Sample Vic
Subject: 5 DAY TAT - FW: 638673 - TRH Chromatograms
Attachments: image001.png; image002.jpg

D.S 01/02

Additional Sil Gel please - 5 day TAT

~~C1317 18~~

Sample MW02

Fe 02502 250mLA.

Can you please confirm we have enough sample?

AA

Kind Regards,

Nibha Vaidya
Phone : +61 2 9900 8415
Mobile : +61 499 900 805
Email : NibhaVaidya@eurofins.com

13/2 3:21p

64045

From: Rohan Hammond [mailto:RHammond@jbsg.com.au]
Sent: Wednesday, 13 February 2019 3:16 PM
To: Nibha Vaidya
Subject: RE: 638673 - TRH Chromatograms

EXTERNAL EMAIL*

Also, is there sufficient sample left to run the SV-TRHs in MW02 through a silica gel clean up and re-run for TRHs?

Rohan

From: Nibha Vaidya <NibhaVaidya@eurofins.com>
Sent: Wednesday, 13 February 2019 1:49 PM
To: Rohan Hammond <RHammond@jbsg.com.au>
Subject: RE: 638673 - TRH Chromatograms

Hi Rohan,

I will send it through, no problem.

Kind Regards,

Nibha Vaidya
Phone : +61 2 9900 8415
Mobile : +61 499 900 805
Email : NibhaVaidya@eurofins.com

From: Rohan Hammond [mailto:RHammond@jbsg.com.au]
Sent: Wednesday, 13 February 2019 1:44 PM
To: Nibha Vaidya
Subject: 638673 - TRH Chromatograms

EXTERNAL EMAIL*

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

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

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

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

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

Sample Receipt Advice

Company name:	**JBS & G Australia (NSW) P/L**
Contact name:	Rohan Hammond
Project name:	MAMRE ROAD KEMPS CREEK
Project ID:	54963
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Feb 13, 2019 3:21 PM
Eurofins | mgt reference:	**640645**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Split sample sent to requested external lab.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Rohan Hammond - rhammond@jbsg.com.au.

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

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

Melbourne
6 Monterey Road
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NATA # 1261 Site # 20794

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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**		**Received:**	Feb 13, 2019 3:21 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	640645	**Due:**	Feb 20, 2019
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Rohan Hammond
Project Name:	MAMRE ROAD KEMPS CREEK				
Project ID:	54963				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						TRH (after Silica Gel cleanup)
Melbourne Laboratory - NATA Site # 1254 & 14271						X
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	MW02	Feb 01, 2019		Water	M19-Fe19009	X
Test Counts						1

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

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Rohan Hammond**

Report **640645-W**
Project name MAMRE ROAD KEMPS CREEK
Project ID 54963
Received Date Feb 13, 2019

Client Sample ID			**MW02**
Sample Matrix			**Water**
Eurofins | mgt Sample No.			**M19-Fe19009**
Date Sampled			**Feb 01, 2019**
Test/Reference	LOR	Unit	
TRH - 2013 NEPM Fractions (after silica gel clean-up)			
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)			
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1

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 (regarding both quality and NATA accreditation).

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
TRH - 2013 NEPM Fractions (after silica gel clean-up)	Melbourne	Feb 18, 2019	7 Day
- Method: LTM-ORG-2010 TRH C6-C40			
TRH - 1999 NEPM Fractions (after silica gel clean-up)	Melbourne	Feb 18, 2019	7 Day
- Method: TRH C6-C36 (Silica Gel Cleanup) - MGT 100A			

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

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		Fax:		**Contact Name:**	Rohan Hammond
Project Name:	MAMRE ROAD KEMPS CREEK				
Project ID:	54963				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						TRH (after Silica Gel cleanup)
Melbourne Laboratory - NATA Site # 1254 & 14271						X
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	MW02	Feb 01, 2019		Water	M19-Fe19009	X
Test Counts						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, April 2011 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. 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 5.2 2018
CP	Client Parent - QC was performed on samples pertaining to this report
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.
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 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.2 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							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
Method Blank							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							
TRH C10-C14 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH C15-C28 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH C29-C36 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
LCS - % Recovery							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	%	82			70-130	Pass	
LCS - % Recovery							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							
TRH C10-C14 (after silica gel clean-up)	%	85			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
TRH - 2013 NEPM Fractions (after silica gel clean-up)				Result 1					
TRH >C10-C16 (after silica gel clean-up)	S19-Fe10742	NCP	%	109			70-130	Pass	
Spike - % Recovery									
TRH - 1999 NEPM Fractions (after silica gel clean-up)				Result 1					
TRH C10-C14 (after silica gel clean-up)	S19-Fe10742	NCP	%	103			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
TRH - 2013 NEPM Fractions (after silica gel clean-up)				Result 1	Result 2	RPD			
TRH >C10-C16 (after silica gel clean-up)	S19-Fe10741	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34 (after silica gel clean-up)	S19-Fe10741	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40 (after silica gel clean-up)	S19-Fe10741	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
TRH - 1999 NEPM Fractions (after silica gel clean-up)				Result 1	Result 2	RPD			
TRH C10-C36 (Total) (after silica gel clean-up)	S19-Fe10741	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C10-C14 (after silica gel clean-up)	S19-Fe10741	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28 (after silica gel clean-up)	S19-Fe10741	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36 (after silica gel clean-up)	S19-Fe10741	NCP	mg/L	< 0.1	< 0.1	<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

Authorised By

Nibha Vaidya	Analytical Services Manager
Joseph Edouard	Senior Analyst-Organic (VIC)



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 L Quality Assurance / Quality Control Summary

ESDAT QA Checker
Project:mamre_road_54963
Filter: ALL

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

Holding Times
- Holding Time Errors (0)

Blanks
- Field Blanks
- Detects in Lab Blanks (0)
- SDG's without Storage Blanks (5)
- SDG's without Method Blanks (0)

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

Surrogates
- Surrogate Variation > 30% or outside lab LCL or UCL (52)

Lab Contr.
- SDG's without a Laboratory Control Sample (0)
- Laboratory Control Samples, Error > 30% (20)

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

Matrix Spikes
- SDG's without a Matrix Spike (0)
- Trip Spikes with invalid Control Sample (0)
- Less than 1 matrix spike in 20 samples, or less than 1 matrix duplicate in 20 samples (2)
- Matrix Spike Recoveries less than 70% or greater than 130% or outside lab LCL or UCL (15)
- Trip Spike Recoveries (70% - 130% is acceptable) (18)

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

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

INSERT TABLE NAME
Project Number: [Project_Number]
Project Name: [Project_Name]

Contents

Count of Samples

Matrix Type	SOIL	WATER
First Sample Date	29/01/2019	29/01/2019
Last Sample Date	4/02/2019	1/02/2019
Sampling Period (days)	7	4
Number of Samples Submitted	122	10
Number of Non QA Samples Submitted	116	3
Number of Field Blanks	0	0
Number of Trip Blanks	0	3
Number of Rinsates	0	2
Number of Field Duplicates	3	1
Number of Trip Spikes	0	3
Number of Lab Duplicates	28	3
Number of LCSs	20	19
Number of CRMs	0	0
Number of Method Blanks	16	13
Number of Storage Blanks	0	0
Number of Matrix Spikes	24	12
Number of Matrix Spike Dupes	0	0

INSERT TABLE NAME
Project Number: [Project_Number]
Project Name: [Project_Name]

			Num Results	Holding Times (days)				Lab Control Samples			Method and Storage Blanks			Laboratory Duplicates			Surrogates			Matrix,Trip and Compound Spikes			Field,Rinsate and Trip Blanks			Field Duplicates		
Chem_Group	ChemName	Range	Non QA (Normal + Composite)	Volatility Group	Sample to Extraction	Sample to Analysis	Acceptable	Recovery %	Num Reported	Acceptable	Range	Num Reported	Acceptable	Max RPD > EQL x 1	Num Reported	Acceptable	Recovery %	Num Reported	Acceptable	Recovery %	Num Reported	Acceptable	Range	Num Reported	Acceptable	Max RPD > EQL x 1	Num Reported	Acceptable
Asbestos	Approx. Sample Mass		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
	Asbestos from ACM in Soil		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
	Asbestos from FA & AF in Soil		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
Asbestos	Asbestos ID in Soil		0	Other			Y		0			0			0	N		0			0			0			0	N
	Asbestos Reported Result		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
	Asbestos Sample Dimensions		1	SVOC	2	9	Y		0			0			0	N		0			0			0			0	N
Asbestos	Mass ACM		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
	Mass AF		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
	Mass Asbestos in ACM		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
	Mass Asbestos in AF		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
	Mass Asbestos in FA		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
	Mass Asbestos in FA & AF		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
	Mass FA		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
Asbestos - Trace Analysis	ACM - Comment		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
	AF - Comment		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
	FA - Comment		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
	Organic Fibres - Comment		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
	Respirable Fibres - Comment		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
	Synthetic Fibres - Comment		15	Other	2 to 3	9 to 10	Y		0			0			0	N		0			0			0			1	Y
Asbestos ID - soils NEPM - AS	ACM >7mm Estimatio[n*]		0	Other			Y		0			0			0	N		0			0			0			0	N
	FA and AF Estimatio[n*#2]		0	Other			Y		0			0			0	N		0			0			0			0	N
	Total Asbestos#1		0	Other			Y		0			0			0	N		0			0			0			0	N
BTEXN	Benzene	0.1 mg/kg	33	VOC	5 to 7	8 to 10	Y	96 to 116	3	N	ND	3	Y		3	Y		0		79 to 95	3	N		0			3	Y
	Ethylbenzene	0.1 mg/kg	33	VOC	5 to 7	8 to 10	Y	100 to 106	3	Y	ND	3	Y		3	Y		0		86 to 102	3	N		0			3	Y
	Naphthalene	0.005 to 0.5 mg/kg	44	VOC	5 to 7	8 to 10	Y	82 to 102	4	N	ND	5	Y		2	Y		0		80 to 96	5	N		0			4	Y
	Toluene	0.1 mg/kg	33	VOC	5 to 7	8 to 10	Y	96 to 101	3	Y	ND	3	Y		3	Y		0		76 to 99	3	N		0			3	Y
	Xylene (m & p)	0.2 mg/kg	33	VOC	5 to 7	8 to 10	Y	92 to 100	3	Y	ND	3	Y		3	Y		0		71 to 93	3	N		0			3	Y
	Xylene (o)	0.1 mg/kg	33	VOC	5 to 7	8 to 10	Y	102 to 102	1	Y	ND	3	Y		3	Y		0		86 to 104	3	N		0			3	Y
	Xylene (Total)	0.3 mg/kg	33	VOC	5 to 7	8 to 10	Y	97 to 99	2	Y	ND	2	Y		3	Y		0		76 to 96	3	N		0			3	Y
Chlorinated Benzenes	Hexachlorobenzene	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	88 to 122	2	N	ND	3	Y		2	Y		0		114 to 121	2	N		0			2	Y
EPA VIC - IWRG621	Organochlorine Pesticides EPAVic	0.1 mg/kg	21	SVOC	1 to 5	8 to 10	Y		0			0			0	N		0			0			0			2	Y
	Other Organochlorine Pesticides EPAVic	0.1 mg/kg	21	SVOC	1 to 5	8 to 10	Y		0			0			0	N		0			0			0			2	Y
Heavy Metal	Exchangeable Sodium Percentage (ESP)	0.1 %	40	Other	6 to 8	8 to 10	Y		0		ND	1	Y	11	4	Y		0			0			0			0	N
Herbicides & Fungicides	Dinoseb	20 mg/kg	15	SVOC	6	8 to 10	Y	87 to 111	2	Y	ND	2	Y		0	N		0		37 to 100	2	N		0			1	Y
Inorganic	Resistivit[y*]	0.5 OHM.M	40	Other	5 to 7	8 to 10	Y		0			0		17	5	Y		0			0			0			0	N
Ionic Balance	Cation Exchange Capacity	0.05 meq/100g	40	Other	8 to 10	8 to 10	Y		0		ND	1	Y	8	4	Y		0			0			0			0	N
	EC 1:5 soil:water	10 µS/cm	68	Other	5 to 7	8 to 10	Y		0		ND	2	Y	15	6	Y		0			0			0			0	N
	pH 1:5 soil:water	0.1 ph Units	68	Other	5 to 7	8 to 10	Y		0			0		3	5	Y		0			0			0			0	N
Major Anions	Chloride	5 mg/kg	40	Other	5 to 7	8 to 10	Y		0			0		32	3	Y		0		86 to 118	3	N		0			0	N
	Sulphate (as S04)	30 mg/kg	40	Other	5 to 7	8 to 10	Y		0			0		6	2	Y		0		107 to 107	1	N		0			0	N
Major Cations	Exchangeable Ca	0.1 meq/100g	40	Other	6 to 8	8 to 10	Y		0		ND	1	Y	9	4	Y		0			0			0			0	N
	Exchangeable K	0.1 meq/100g	40	Other	6 to 8	8 to 10	Y		0		ND	1	Y	0	4	Y		0			0			0			0	N
	Exchangeable Mg	0.1 meq/100g	40	Other	6 to 8	8 to 10	Y		0		ND	1	Y	13	4	Y		0			0			0			0	N
	Exchangeable Na	0.1 meq/100g	40	Other	6 to 8	8 to 10	Y		0		ND	1	Y	29	4	Y		0			0			0			0	N
Metals & Metalloids	Arsenic (Total)	2 mg/kg	55	Other	5 to 7	8 to 10	Y	110 to 120	3	N	ND	3	Y	12	5	Y		0		95 to 109	3	N		0		46	3	Y
	Cadmium	0.4 mg/kg	55	Other	5 to 7	8 to 10	Y	106 to 109	3	Y	ND	3	Y		5	Y		0		81 to 101	4	N		0		36	3	Y
	Chromium (Total)	5 mg/kg	55	Other	5 to 7	8 to 10	Y	106 to 120	3	N	ND	3	Y	15	5	Y		0		99 to 114	4	N		0		61	3	N
	Copper	5 mg/kg	55	Other	5 to 7	8 to 10	Y	109 to 120	3	N	ND	3	Y	19	5	Y		0		98 to 112	3	N		0		59	3	N
	Lead	5 mg/kg	55	Other	5 to 7	8 to 10	Y	98 to 118	3	N	ND	3	Y	10	5	Y		0		97 to 109	3	N		0		87	3	N
	Mercury (Inorganic)	0.1 mg/kg	55	Other	5 to 7	8 to 10	Y	98 to 111	3	Y	ND	3	Y		5	Y		0		85 to 107	4	N		0			3	Y
	Nickel	5 mg/kg	55	Other	5 to 7	8 to 10	Y	101 to 120	3	N	ND	3	Y	7	5	Y		0		96 to 114	4	N		0		24	3	Y
	Zinc	5 mg/kg	55	Other	5 to 7	8 to 10	Y	102 to 117	3	N	ND	3	Y	13	5	Y		0		96 to 114	3	N		0		57	3	N
Organochlorine Pesticides	4,4-DDE	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	92 to 118	3	N	ND	3	Y		2	Y		0		109 to 110	2	N		0			2	Y
	Aldrin	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	72 to 104	3	N	ND	3	Y		2	Y		0		88 to 111	2	N		0			2	Y
	Aldrin + Dieldrin (Sum of Total)	0.05 mg/kg	21	SVOC	1 to 5	8 to 10	Y		0			0			0	N		0			0			0			2	Y
	alpha-BHC	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	75 to 102	3	N	ND	3	Y		2	Y		0		96 to 105	2	N		0			2	Y
	alpha-Chlordane		0	SVOC			Y		0		ND	1	Y		0	N		0			0			0			0	N
	beta-BHC	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	87 to 87	3	Y	ND	3	Y		2	Y		0		71 to 95	2	N		0			2	Y
	Chlordane	0.1 mg/kg	21	SVOC	6 to 7	8 to 10	Y	71 to 112	2	N	ND	2	Y		2	Y		0		82 to 111	2	N		0			2	Y
	DDD	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	84 to 92	3	N	ND	3	Y		2	Y		0		75 to 89	2	N		0			2	Y
	DDT	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	76 to 76	1	N	ND	3	Y		2	Y		0		71 to 98	2	N		0			2	Y
	DDT+DDE+DDD (Sum of Total)	0.05 mg/kg	21	SVOC	1 to 5	8 to 10	Y		0			0			0	N		0			0			0			2	Y
	delta-BHC	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	91 to 96	2	Y	ND	3	Y		2	Y		0		95 to 107	2	N		0			2	Y
	Dieldrin	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	84 to 104	3	N	ND	3	Y		2	Y		0		88 to 116	2	N		0			2	Y
	Endosulfan alpha	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	87 to 101	2	Y	ND	3	Y		2	Y		0		88 to 89	2	N		0			2	Y
	Endosulfan beta	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	105 to 110	2	Y	ND	3	Y		2	Y		0		90 to 101	2	N		0			2	Y
	Endosulfan sulphate	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	77 to 97	3	N	ND	3	Y		2	Y		0		80 to 118	2	N		0			2	Y
	Endrin	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	83 to 99	3	N	ND	3	Y		2	Y		0		78 to 128	2	N		0			2	Y
	Endrin aldehyde	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	88 to 95	2	Y	ND	3	Y		2	Y		0		79 to 85	2	N		0			2	Y
	Endrin ketone	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	87 to 122	2	N	ND	2	Y		2	Y		0		103 to 112	2	N		0			2	Y
	gamma-Chlordane		0	SVOC			Y		0		ND	1	Y		0	N		0			0			0			0	N
	Heptachlor	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	76 to 86	3	N	ND	3	Y		2	Y		0		82 to 84	2	N		0			2	Y
	Heptachlor Epoxide	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	77 to 90	3	N	ND	3	Y		2	Y		0		77 to 100	2	N		0			2	Y
	Lindane	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	86 to 117	2	N	ND	3	Y		2	Y		0		92 to 122	2	N		0			2	Y
	Methoxychlor	0.05 mg/kg	21	SVOC	6 to 7	8 to 10	Y	104 to 104	1	Y	ND	3	Y		2	Y		0		86 to 106	2	N		0			2	Y
	Pentachlorophenol	1 mg/kg	15	SVOC	6	8 to 10	Y	89 to 98	2	Y	ND	2	Y		2	Y		0		39 to 88	2	N		0			1	Y
	Toxaphene	1 mg/kg	21	SVOC	6 to 7	8 to 10	Y		0		ND	2	Y		0	N		0			0			0			2	Y
Other	% Clay	1 %	4	Other	6 to 7	9 to 10	Y	107 to 107	1	Y	ND	1	Y		0	N		0			0			0			0	N
	% Moisture 103oC	1 %	115	Other	1 to 3	8 to 10	Y		0			0		8	13	Y		0			0			0		26	3	Y
	Moisture		0	Other			Y		0			0			0	N		0			0			0			0	N

INSERT TABLE NAME
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PAHs in Soil	Benzo(b,j+k)fluoranthene		0	Other			Y		0		ND	1	Y		0	**N**		0			0				0			0	**N**
Phenols	2,4,5-trichlorophenol	1 mg/kg	15	SVOC	6	8 to 10	Y	95 to 124	2	**N**	ND	2	Y		2	Y		0		85 to 94	2	**N**		0			1	Y
	2,4,6-trichlorophenol	1 mg/kg	15	SVOC	6	8 to 10	Y	98 to 106	2	Y	ND	2	Y		2	Y		0		75 to 98	2	**N**		0			1	Y
	2,4-dichlorophenol	0.5 mg/kg	15	SVOC	6	8 to 10	Y	96 to 117	2	**N**	ND	2	Y		2	Y		0		88 to 95	2	**N**		0			1	Y
	2,4-dimethylphenol	0.5 mg/kg	15	SVOC	6	8 to 10	Y	65 to 120	2	**N**	ND	2	Y		2	Y		0		72 to 92	2	**N**		0			1	Y
	2,4-dinitrophenol	5 mg/kg	15	SVOC	6	8 to 10	Y	57 to 117	2	**N**	ND	2	Y		2	Y		0		38 to 38	1	**N**		0			1	Y
	2,6-dichlorophenol	0.5 mg/kg	15	SVOC	6	8 to 10	Y	94 to 96	2	Y	ND	2	Y		2	Y		0		84 to 96	2	**N**		0			1	Y
	2-chlorophenol	0.5 mg/kg	15	SVOC	6	8 to 10	Y	83 to 99	2	**N**	ND	2	Y		2	Y		0		60 to 98	2	**N**		0			1	Y
	2-Methylphenol	0.2 mg/kg	15	SVOC	6	8 to 10	Y	66 to 102	2	**N**	ND	2	Y		2	Y		0		91 to 93	2	**N**		0			1	Y
	2-nitrophenol	1 mg/kg	15	SVOC	6	8 to 10	Y	99 to 100	2	Y	ND	2	Y		2	Y		0		74 to 101	2	**N**		0			1	Y
	3- & 4-Methylphenol	0.4 mg/kg	15	SVOC	6	8 to 10	Y	104 to 118	2	**N**	ND	2	Y		2	Y		0		87 to 97	2	**N**		0			1	Y
	4,6-Dinitro-2-methylphenol	5 mg/kg	15	SVOC	6	8 to 10	Y	74 to 108	2	**N**	ND	2	Y		2	Y		0		111 to 111	1	**N**		0			1	Y
	4,6-Dinitro-o-cyclohexyl phenol	20 mg/kg	15	SVOC	6	8 to 10	Y	34 to 116	2	**N**	ND	2	Y		2	Y		0		72 to 75	2	**N**		0			1	Y
	4-Chloro-3-Methylphenol	1 mg/kg	15	SVOC	6	8 to 10	Y	96 to 123	2	**N**	ND	2	Y		2	Y		0		89 to 98	2	**N**		0			1	Y
	4-nitrophenol	5 mg/kg	15	SVOC	6	8 to 10	Y	43 to 108	2	**N**	ND	2	Y		2	Y		0		61 to 94	2	**N**		0			1	Y
	Phenol	0.5 mg/kg	15	SVOC	6	8 to 10	Y	91 to 96	2	Y	ND	2	Y		2	Y		0		72 to 98	2	**N**		0			1	Y
	Phenols (Total)		0	SVOC			Y	100 to 100	1	Y	ND	1	Y		0	**N**		0			0			0			0	**N**
	Total Halogenated Phenol	1 mg/kg	15	SVOC	1 to 5	8 to 10	Y		0			0			0	**N**		0			0			0			1	Y
	Total Non-Halogenated Phenol	20 mg/kg	15	SVOC	1 to 5	8 to 10	Y		0			0			0	**N**		0			0			0			1	Y
	Total Tetrachlorophenols	1 mg/kg	15	SVOC	6	8 to 10	Y	83 to 98	2	**N**	ND	2	Y		2	Y		0		50 to 92	2	**N**		0			1	Y
Polychlorinated Biphenyls	Aroclor 1016	0.1 mg/kg	4	SVOC	6	9	Y		0		ND	2	Y		0	**N**		0		78 to 78	1	**N**		0			1	Y
	Aroclor 1221	0.1 mg/kg	4	SVOC	6	9	Y		0		ND	2	Y		0	**N**		0			0			0			1	Y
	Aroclor 1232	0.1 mg/kg	4	SVOC	6	9	Y		0		ND	2	Y		0	**N**		0			0			0			1	Y
	Aroclor 1242	0.1 mg/kg	4	SVOC	6	9	Y		0		ND	2	Y		0	**N**		0			0			0			1	Y
	Aroclor 1248	0.1 mg/kg	4	SVOC	6	9	Y		0		ND	2	Y		0	**N**		0			0			0			1	Y
	Aroclor 1254	0.1 mg/kg	4	SVOC	6	9	Y	100 to 100	1	Y	ND	2	Y		0	**N**		0			0			0			1	Y
	Aroclor 1260	0.1 mg/kg	4	SVOC	6	9	Y	101 to 101	1	Y	ND	2	Y		0	**N**		0		93 to 93	1	**N**		0			1	Y
	PCBs (Total)	0.1 mg/kg	4	SVOC	6	9	Y		0		ND	1	Y		0	**N**		0			0			0			1	Y
Polycyclic Aromatic Hydrocarbons	Acenaphthene	0.005 to 0.5 mg/kg	15	SVOC	6	8 to 10	Y	82 to 82	1	**N**	ND	2	Y		2	Y		0		79 to 112	2	**N**		0			1	Y
	Acenaphthylene	0.005 to 0.5 mg/kg	15	SVOC	6	8 to 10	Y	99 to 99	1	Y	ND	2	Y		2	Y		0		105 to 108	2	**N**		0			1	Y
	Anthracene	0.005 to 0.5 mg/kg	15	SVOC	6	8 to 10	Y	75 to 75	1	**N**	ND	2	Y		2	Y		0		92 to 112	2	**N**		0			1	Y
	Benz(a)anthracene	0.005 to 0.5 mg/kg	15	SVOC	6	8 to 10	Y	94 to 94	1	Y	ND	2	Y		2	Y		0		91 to 113	2	**N**		0			1	Y
	Benzo(a)pyrene	0.005 to 0.5 mg/kg	15	SVOC	6	8 to 10	Y	84 to 109	2	**N**	ND	2	Y		2	Y		0		75 to 128	2	**N**		0			1	Y
	Benzo(a)pyrene TEQ (lower bound)[1*]	0.5 mg/kg	12	SVOC	1 to 5	8 to 9	Y		0			0			0	**N**		0			0			0			1	Y
	Benzo(a)pyrene TEQ (medium bound)[1*]	0.5 mg/kg	12	SVOC	1 to 5	8 to 9	Y		0			0			0	**N**		0			0			0		0	1	Y
	Benzo(a)pyrene TEQ (upper bound)[1*]	0.5 mg/kg	12	SVOC	1 to 5	8 to 9	Y		0			0			0	**N**		0			0			0		0	1	Y
	Benzo(b,j)fluoranthene	0.005 to 0.5 mg/kg	15	SVOC	6	8 to 10	Y	83 to 83	1	**N**	ND	1	Y		2	Y		0		74 to 77	2	**N**		0			1	Y
	Benzo(g,h,i)perylene	0.005 to 0.5 mg/kg	15	SVOC	6	8 to 10	Y	89 to 89	1	Y	ND	2	Y		2	Y		0		93 to 98	2	**N**		0			1	Y
	Benzo(k)fluoranthene	0.005 to 0.5 mg/kg	15	SVOC	6	8 to 10	Y	88 to 88	1	Y	ND	1	Y		2	Y		0		96 to 97	2	**N**		0			1	Y
	Chrysene	0.005 to 0.5 mg/kg	15	SVOC	6	8 to 10	Y	73 to 102	2	**N**	ND	2	Y		2	Y		0		75 to 118	2	**N**		0			1	Y
	Dibenz(a,h)anthracene	0.005 to 0.5 mg/kg	15	SVOC	6	8 to 10	Y	82 to 82	1	**N**	ND	2	Y		2	Y		0		81 to 96	2	**N**		0			1	Y
	Fluoranthene	0.005 to 0.5 mg/kg	15	SVOC	6	8 to 10	Y	88 to 102	2	Y	ND	2	Y		2	Y		0		94 to 122	2	**N**		0			1	Y
	Fluorene	0.005 to 0.5 mg/kg	15	SVOC	6	8 to 10	Y	97 to 111	2	Y	ND	2	Y		2	Y		0		91 to 120	2	**N**		0			1	Y
	Indeno(1,2,3-c,d)pyrene	0.005 to 0.5 mg/kg	15	SVOC	6	8 to 10	Y	106 to 106	1	Y	ND	2	Y		2	Y		0		119 to 122	2	**N**		0			1	Y
	PAHs (Total)	0.005 to 0.5 mg/kg	15	SVOC	1 to 6	8 to 10	Y		0		ND	1	Y		0	**N**		0			0			0			1	Y
	Phenanthrene	0.005 to 0.5 mg/kg	15	SVOC	6	8 to 10	Y	88 to 100	2	Y	ND	2	Y		2	Y		0		103 to 122	2	**N**		0			1	Y
	Pyrene	0.005 to 0.5 mg/kg	15	SVOC	6	8 to 10	Y	92 to 100	2	Y	ND	2	Y		2	Y		0		96 to 118	2	**N**		0			1	Y
	Total Positive PAHs		0	SVOC			Y		0			0			0	**N**		0			0			0			0	**N**
Surrogate	4-Terphenyl-d14		0	SVOC			Y	85 to 85	1	**N**		0			0	**N**	55 to 101	19	**N**		0			0			0	**N**
	Surrogate 2-fluorobiphenyl		0	SVOC			Y		0			0			0	**N**	50 to 109	16	**N**		0			0			0	**N**
	Surrogate 4-BFB		0	VOC			Y		0			0			0	**N**	59 to 110	36	**N**		0			0			0	**N**
	Surrogate aaa-Trifluorotoluene		0	SVOC			Y	115 to 115	1	**N**		0			0	**N**	80 to 115	5	**N**		0			0			0	**N**
	Surrogate Dibutylchlorendate		0	SVOC			Y		0			0			0	**N**	51 to 136	23	**N**		0			0			0	**N**
	Surrogate o-Terphenyl		0	SVOC			Y	96 to 96	1	Y		0			0	**N**	83 to 96	5	**N**		0			0			0	**N**
	Surrogate Phenol-d6		0	SVOC			Y		0			0			0	**N**	27 to 106	16	**N**		0			0			0	**N**
	Surrogate TCMX		0	SVOC			Y	94 to 104	2	Y		0			0	**N**	65 to 148	30	**N**		0			0			0	**N**
TPHs (NEPC 1999)	C10-C14 Fraction	20 mg/kg	29	SVOC	5 to 7	8 to 10	Y	77 to 103	3	**N**	ND	3	Y		1	Y		0		80 to 105	3	**N**		0			3	Y
	C10-C36 Fraction (Total)	50 mg/kg	29	SVOC	1 to 5	8 to 10	Y		0			0			0	**N**		0			0			0		138	3	**N**
	C15-C28 Fraction	50 mg/kg	29	SVOC	5 to 7	8 to 10	Y	93 to 93	1	Y	ND	3	Y		1	Y		0			0			0		82	3	**N**
	C29-C36 Fraction	50 mg/kg	29	SVOC	5 to 7	8 to 10	Y	114 to 114	1	**N**	ND	3	Y		1	Y		0			0			0		100	3	**N**
	C6-C9 Fraction	20 mg/kg	29	VOC	5 to 7	8 to 10	Y	98 to 105	3	Y	ND	3	Y		2	Y		0		87 to 100	3	**N**		0			3	Y
TRHs (NEPC 2013)	>C10-C16 Fraction	50 mg/kg	29	SVOC	5 to 7	8 to 10	Y	87 to 103	3	Y	ND	3	Y		1	Y		0		80 to 107	3	**N**		0			3	Y
	>C10-C16 less Naphthalene (F2)	50 mg/kg	29	SVOC	1 to 5	8 to 10	Y		0			0			0	**N**		0			0			0			3	Y
	>C10-C40 Fraction (Total)	100 mg/kg	29	SVOC	5 to 7	8 to 10	Y		0			0			0	**N**		0			0			0		71	3	**N**
	>C16-C34 Fraction	100 mg/kg	29	SVOC	5 to 7	8 to 10	Y	93 to 93	1	Y	ND	3	Y		1	Y		0			0			0		71	3	**N**
	>C34-C40 Fraction	100 mg/kg	29	SVOC	5 to 7	8 to 10	Y	114 to 114	1	**N**	ND	3	Y		1	Y		0			0			0			3	Y
	C6-C10 Fraction	20 mg/kg	29	VOC	5 to 7	8 to 10	Y	95 to 110	3	Y	ND	3	Y		2	Y		0		86 to 97	3	**N**		0			3	Y
	C6-C10 less BTEX (F1)	20 mg/kg	29	VOC	1 to 5	8 to 10	Y		0			0			0	**N**		0			0			0			3	Y
BTEXN	Benzene	0.001 mg/L	3	VOC	5 to 7	6 to 10	Y	76 to 99	3	**N**	ND	3	Y		1	Y		0		84 to 100	4	**N**	ND	5	Y		1	Y
	Ethylbenzene	0.001 mg/L	3	VOC	5 to 7	6 to 10	Y	97 to 118	3	**N**	ND	3	Y		1	Y		0		91 to 120	4	**N**	ND	5	Y		1	Y
	Naphthalene	0.00001 to 0.01 mg/L	6	VOC	5 to 6	6 to 10	Y	71 to 115	5	**N**	ND	6	Y		0	**N**		0		91 to 99	2	**N**	ND	4	Y		2	Y
	Toluene	0.001 mg/L	3	VOC	5 to 7	6 to 10	Y	97 to 115	3	**N**	ND	3	Y		1	Y		0		95 to 120	4	**N**	ND	5	Y		1	Y
	Xylene (m & p)	0.002 mg/L	3	VOC	5 to 7	6 to 10	Y	93 to 118	3	**N**	ND	3	Y		1	Y		0		92 to 110	4	**N**	ND	5	Y		1	Y
	Xylene (o)	0.001 mg/L	3	VOC	5 to 7	6 to 10	Y	89 to 89	1	Y	ND	3	Y		1	Y		0		94 to 120	4	**N**	ND	5	Y		1	Y
	Xylene (Total)	0.003 mg/L	3	VOC	5 to 7	8 to 10	Y	98 to 119	2	**N**	ND	2	Y		1	Y		0		93 to 120	4	**N**	ND	5	Y		1	Y
Chlorinated Benzenes	Hexachlorobenzene		0	SVOC	6	8 to 10	Y	107 to 107	1	Y	ND	2	Y		0	**N**		0		90 to 90	1	**N**	ND	2	Y		0	**N**
EPA VIC - IWRG621	Organochlorine Pesticides EPAVic		0	SVOC	1 to 3	8 to 10	Y		0			0			0	**N**		0			0		ND	2	Y		0	**N**
	Other Organochlorine Pesticides EPAVic		0	SVOC	1 to 3	8 to 10	Y		0			0			0	**N**		0			0		ND	2	Y		0	**N**
Herbicides & Fungicides	Dinoseb	0.1 mg/L	3	SVOC	6	8 to 10	Y	88 to 117	2	**N**	ND	2	Y		0	**N**		0		100 to 100	1	**N**	ND	2	Y		1	Y
Ionic Balance	EC_Lab	1 µS/cm	3	Other	5	10	Y		0			0		0	1	Y		0			0			0		0	1	Y
	pH_Lab		3	Other	5 to 10	10	Y	102 to 102	1	Y		0		1	1	Y		0			0			0		1	1	Y
	Total Alkalinity (as CaCO3)	20 mg/L	3	Other	5 to 10	10	Y	96 to 115	2	**N**	ND	2	Y	7	1	Y		0		85 to 85	1	**N**		0		0	1	Y
Major Anions	Bicarbonate Alkalinity (as CaCO3)		0	Other	10	10	Y		0		ND	1	Y		0	**N**		0			0			0			0	**N**
	Chloride	1 mg/L	3	Other	6 to 10	10	Y	96 to 106	2	Y	ND	2	Y	4	1	Y		0		104 to 104	1	**N**		0		1	1	Y
	Sulphate (as S04)	5 mg/L	3	Other	6 to 10	10	Y	94 to 101	2	Y	ND	2	Y	2	1	Y		0		137 to 137	1	**N**		0		0	1	Y
Metals & Metalloids	Arsenic (Total)	0.001 mg/L	3	Other	5	5 to 10	Y	93 to 108	4	Y	ND	4	Y	0	1	Y		0		97 to 108	3	**N**	ND	2	Y	0	1	Y
	Cadmium	0.0002 mg/L	3	Other	5	5 to 10	Y	88 to 103	4	Y	ND	4	Y		1	Y		0		87 to 103	3	**N**	ND	2	Y	0	1	Y
	Chromium (Total)	0.001 mg/L	3	Other	5	5 to 10	Y	86 to 102	4	**N**	ND	4	Y		1	Y		0		94 to 102	3	**N**	ND	2	Y		1	Y
	Copper	0.001 mg/L	3	Other	5	5 to 10	Y	83 to 101	4	**N**	ND	4	Y	0	1	Y		0		86 to 100	3	**N**	ND	2	Y	100	1	**N**
	Lead	0.001 mg/L	3	Other	5	5 to 10	Y	89 to 105	4	Y	ND	4	Y		1	Y		0		91 to 105	3	**N**	ND	2	Y		1	Y
	Mercury (Inorganic)	0.0001 mg/L	3	Other	5	5 to 10	Y	83 to 98	4	**N**	ND	4	Y		1	Y		0		89 to 94	3	**N**	ND	2	Y		1	Y
	Nickel	0.001 mg/L	3	Other	5	5 to 10	Y	84 to 102	4	**N**	ND	4	Y	0	1	Y		0		88 to 100	3	**N**	ND	2	Y	0	1	Y

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	Zinc	0.005 mg/L	3	Other	5	5 to 10	Y	84 to 101	4	N	ND	4	Y	0	1	Y		0		51 to 101	3	N	ND	2	Y	69	1	N
Miscellaneous Inorganics	Electrical Conductivity		0	Other	10	10	Y	100 to 100	1	Y	ND	1	Y		0	N		0			0			0			0	N
Organochlorine Pesticides	4,4-DDE		0	SVOC	6	8 to 10	Y	101 to 101	1	Y	ND	2	Y		0	N		0		99 to 99	1	N	ND	2	Y		0	N
	Aldrin		0	SVOC	6	8 to 10	Y	83 to 83	1	N	ND	2	Y		0	N		0		94 to 94	1	N	ND	2	Y		0	N
	Aldrin + Dieldrin (Sum of Total)		0	SVOC	1 to 3	8 to 10	Y		0			0			0	N		0			0		ND	2	Y		0	N
	alpha-BHC		0	SVOC	6	8 to 10	Y	84 to 84	1	N	ND	2	Y		0	N		0		85 to 85	1	N	ND	2	Y		0	N
	beta-BHC		0	SVOC	6	8 to 10	Y	79 to 79	1	N	ND	2	Y		0	N		0		84 to 84	1	N	ND	2	Y		0	N
	Chlordane		0	SVOC	6	8 to 10	Y	97 to 97	1	Y	ND	2	Y		0	N		0		98 to 98	1	N	ND	2	Y		0	N
	DDD		0	SVOC	6	8 to 10	Y	99 to 99	1	Y	ND	2	Y		0	N		0		89 to 89	1	N	ND	2	Y		0	N
	DDT		0	SVOC	6	8 to 10	Y	129 to 129	1	N	ND	2	Y		0	N		0		80 to 80	1	N	ND	2	Y		0	N
	DDT+DDE+DDD (Sum of Total)		0	SVOC	1 to 3	8 to 10	Y		0			0			0	N		0			0		ND	2	Y		0	N
	delta-BHC		0	SVOC	6	8 to 10	Y	96 to 96	1	Y	ND	2	Y		0	N		0		91 to 91	1	N	ND	2	Y		0	N
	Dieldrin		0	SVOC	6	8 to 10	Y	102 to 102	1	Y	ND	2	Y		0	N		0		78 to 78	1	N	ND	2	Y		0	N
	Endosulfan alpha		0	SVOC	6	8 to 10	Y	78 to 78	1	N	ND	2	Y		0	N		0		78 to 78	1	N	ND	2	Y		0	N
	Endosulfan beta		0	SVOC	6	8 to 10	Y	88 to 88	1	Y	ND	2	Y		0	N		0		95 to 95	1	N	ND	2	Y		0	N
	Endosulfan sulphate		0	SVOC	6	8 to 10	Y	90 to 90	1	Y	ND	2	Y		0	N		0		77 to 77	1	N	ND	2	Y		0	N
	Endrin		0	SVOC	6	8 to 10	Y	87 to 87	1	Y	ND	2	Y		0	N		0		82 to 82	1	N	ND	2	Y		0	N
	Endrin aldehyde		0	SVOC	6	8 to 10	Y	75 to 75	1	N	ND	2	Y		0	N		0		105 to 105	1	N	ND	2	Y		0	N
	Endrin ketone		0	SVOC	6	8 to 10	Y	116 to 116	1	N	ND	2	Y		0	N		0		79 to 79	1	N	ND	2	Y		0	N
	Heptachlor		0	SVOC	6	8 to 10	Y	115 to 115	1	N	ND	2	Y		0	N		0		81 to 81	1	N	ND	2	Y		0	N
	Heptachlor Epoxide		0	SVOC	6	8 to 10	Y	94 to 94	1	Y	ND	2	Y		0	N		0		79 to 79	1	N	ND	2	Y		0	N
	Lindane		0	SVOC	6	8 to 10	Y	85 to 85	1	N	ND	2	Y		0	N		0		83 to 83	1	N	ND	2	Y		0	N
	Methoxychlor		0	SVOC	6	8 to 10	Y	118 to 118	1	N	ND	2	Y		0	N		0		120 to 120	1	N	ND	2	Y		0	N
	Pentachlorophenol	0.01 mg/L	3	SVOC	6	8 to 10	Y	33 to 46	2	N	ND	2	Y		0	N		0		83 to 83	1	N	ND	2	Y		1	Y
	Toxaphene		0	SVOC	6	8 to 10	Y		0		ND	2	Y		0	N		0			0		ND	2	Y		0	N
PAHs in Soil	Benzo(b,j+k)fluoranthene		0	Other	5	6	Y		0		ND	1	Y		0	N		0			0			0			0	N
Phenols	2,4,5-trichlorophenol	0.01 mg/L	3	SVOC	6	8 to 10	Y	64 to 75	2	N	ND	2	Y		0	N		0		110 to 110	1	N	ND	2	Y		1	Y
	2,4,6-trichlorophenol	0.01 mg/L	3	SVOC	6	8 to 10	Y	61 to 94	2	N	ND	2	Y		0	N		0		77 to 77	1	N	ND	2	Y		1	Y
	2,4-dichlorophenol	0.003 mg/L	3	SVOC	6	8 to 10	Y	67 to 106	2	N	ND	2	Y		0	N		0		102 to 102	1	N	ND	2	Y		1	Y
	2,4-dimethylphenol	0.003 mg/L	3	SVOC	6	8 to 10	Y	82 to 82	1	N	ND	2	Y		0	N		0		66 to 66	1	N	ND	2	Y		1	Y
	2,4-dinitrophenol	0.03 mg/L	3	SVOC	6	8 to 10	Y	50 to 78	2	N	ND	2	Y		0	N		0		110 to 110	1	N	ND	2	Y		1	Y
	2,6-dichlorophenol	0.003 mg/L	3	SVOC	6	8 to 10	Y	38 to 65	2	N	ND	2	Y		0	N		0		102 to 102	1	N	ND	2	Y		1	Y
	2-chlorophenol	0.003 mg/L	3	SVOC	6	8 to 10	Y	78 to 104	2	N	ND	2	Y		0	N		0		97 to 97	1	N	ND	2	Y		1	Y
	2-Methylphenol	0.003 mg/L	3	SVOC	6	8 to 10	Y	59 to 116	2	N	ND	2	Y		0	N		0		83 to 83	1	N	ND	2	Y		1	Y
	2-nitrophenol	0.01 mg/L	3	SVOC	6	8 to 10	Y	73 to 110	2	N	ND	2	Y		0	N		0		116 to 116	1	N	ND	2	Y		1	Y
	3- & 4-Methylphenol	0.006 mg/L	3	SVOC	6	8 to 10	Y	66 to 107	2	N	ND	2	Y		0	N		0		77 to 77	1	N	ND	2	Y		1	Y
	4,6-Dinitro-2-methylphenol	0.03 mg/L	3	SVOC	6	8 to 10	Y	79 to 87	2	N	ND	2	Y		0	N		0		79 to 79	1	N	ND	2	Y		1	Y
	4,6-Dinitro-o-cyclohexyl phenol	0.1 mg/L	3	SVOC	6	8 to 10	Y	74 to 87	2	N	ND	2	Y		0	N		0		120 to 120	1	N	ND	2	Y		1	Y
	4-Chloro-3-Methylphenol	0.01 mg/L	3	SVOC	6	8 to 10	Y	75 to 84	2	N	ND	2	Y		0	N		0		97 to 97	1	N	ND	2	Y		1	Y
	4-nitrophenol	0.03 mg/L	3	SVOC	6	8 to 10	Y	36 to 71	2	N	ND	2	Y		0	N		0		57 to 57	1	N	ND	2	Y		1	Y
	Phenol	0.003 mg/L	3	SVOC	6	8 to 10	Y	58 to 62	2	N	ND	2	Y		0	N		0		37 to 37	1	N	ND	2	Y		1	Y
	Phenols (Total)		0	SVOC	7	7	Y	102 to 102	1	Y	ND	1	Y		0	N		0			0			0			0	N
	Total Halogenated Phenol	0.01 mg/L	3	SVOC	1 to 3	8 to 10	Y		0			0			0	N		0			0		ND	2	Y		1	Y
	Total Non-Halogenated Phenol	0.1 mg/L	3	SVOC	1 to 3	8 to 10	Y		0			0			0	N		0			0		ND	2	Y		1	Y
	Total Tetrachlorophenols	0.03 mg/L	3	SVOC	6	8 to 10	Y	54 to 58	2	N	ND	2	Y		0	N		0		91 to 91	1	N	ND	2	Y		1	Y
Polychlorinated Biphenyls	Aroclor 1016		0	SVOC	6	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		0	N
	Aroclor 1221		0	SVOC	6	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		0	N
	Aroclor 1232		0	SVOC	6	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		0	N
	Aroclor 1242		0	SVOC	6	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		0	N
	Aroclor 1248		0	SVOC	6	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		0	N
	Aroclor 1254		0	SVOC	6	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		0	N
	Aroclor 1260		0	SVOC	6	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		0	N
	PCBs (Total)		0	SVOC	6	8	Y		0		ND	1	Y		0	N		0			0		ND	1	Y		0	N
Polycyclic Aromatic Hydrocarbons	Acenaphthene	0.00001 mg/L	3	SVOC	5 to 6	6 to 10	Y	113 to 119	2	N	ND	3	Y		0	N		0		99 to 99	1	N	ND	2	Y		1	Y
	Acenaphthylene	0.00001 mg/L	3	SVOC	5 to 6	6 to 10	Y	100 to 117	2	N	ND	3	Y		0	N		0		97 to 97	1	N	ND	2	Y		1	Y
	Anthracene	0.00001 mg/L	3	SVOC	5 to 6	6 to 10	Y	88 to 103	2	Y	ND	3	Y		0	N		0		90 to 90	1	N	ND	2	Y		1	Y
	Benz(a)anthracene	0.00001 mg/L	3	SVOC	5 to 6	6 to 10	Y	85 to 98	2	N	ND	3	Y		0	N		0		85 to 85	1	N	ND	2	Y		1	Y
	Benzo(a)pyrene	0.00001 mg/L	3	SVOC	5 to 6	6 to 10	Y	94 to 108	3	Y	ND	3	Y		0	N		0		94 to 94	1	N	ND	2	Y		1	Y
	Benzo(a)pyrene TEQ (WHO)		0	SVOC	5	6	Y		0			0			0	N		0			0			0			0	N
	Benzo(b,j)fluoranthene	0.00001 mg/L	3	SVOC	6	8 to 10	Y	88 to 89	2	Y	ND	2	Y		0	N		0		60 to 60	1	N	ND	2	Y		1	Y
	Benzo(g,h,i)perylene	0.00001 mg/L	3	SVOC	5 to 6	6 to 10	Y	82 to 114	2	N	ND	3	Y		0	N		0		67 to 67	1	N	ND	2	Y		1	Y
	Benzo(k)fluoranthene	0.00001 mg/L	3	SVOC	6	8 to 10	Y	91 to 93	2	Y	ND	2	Y		0	N		0		85 to 85	1	N	ND	2	Y		1	Y
	Chrysene	0.00001 mg/L	3	SVOC	5 to 6	6 to 10	Y	88 to 125	3	N	ND	3	Y		0	N		0		112 to 112	1	N	ND	2	Y		1	Y
	Dibenz(a,h)anthracene	0.00001 mg/L	3	SVOC	5 to 6	6 to 10	Y	94 to 124	2	N	ND	3	Y		0	N		0		62 to 62	1	N	ND	2	Y		1	Y
	Fluoranthene	0.00001 mg/L	3	SVOC	5 to 6	6 to 10	Y	73 to 97	3	N	ND	3	Y		0	N		0		123 to 123	1	N	ND	2	Y		1	Y
	Fluorene	0.00001 mg/L	3	SVOC	5 to 6	6 to 10	Y	83 to 122	3	N	ND	3	Y		0	N		0		103 to 103	1	N	ND	2	Y		1	Y
	Indeno(1,2,3-c,d)pyrene	0.00001 mg/L	3	SVOC	5 to 6	6 to 10	Y	84 to 100	2	N	ND	3	Y		0	N		0		71 to 71	1	N	ND	2	Y		1	Y
	PAHs (Total)	0.00001 mg/L	3	SVOC	1 to 6	8 to 10	Y		0			0			0	N		0			0		ND	2	Y		1	Y
	Phenanthrene	0.00001 mg/L	3	SVOC	5 to 6	6 to 10	Y	78 to 88	3	N	ND	3	Y		0	N		0		113 to 113	1	N	ND	2	Y		1	Y
	Pyrene	0.00001 mg/L	3	SVOC	5 to 6	6 to 10	Y	75 to 103	3	N	ND	3	Y		0	N		0		131 to 131	1	N	ND	2	Y		1	Y
	Total Positive PAHs		0	SVOC	5	6	Y		0			0			0	N		0			0			0			0	N
Surrogate	4-Terphenyl-d14		0	SVOC			Y	78 to 78	1	N		0			0	N	78 to 131	9	N		0			0			0	N
	Surrogate 2-fluorobiphenyl		0	SVOC			Y		0			0			0	N	68 to 108	6	N		0			0			0	N
	Surrogate 4-BFB		0	VOC			Y	94 to 94	1	Y		0			0	N	63 to 127	15	N		0			0			0	N
	Surrogate Dibromofluoromethane		0	VOC			Y	101 to 101	1	Y		0			0	N	95 to 101	3	N		0			0			0	N
	Surrogate Dibutylchlorendate		0	SVOC			Y		0			0			0	N	83 to 133	2	N		0			0			0	N
	Surrogate o-Terphenyl		0	SVOC			Y	105 to 105	1	Y		0			0	N	84 to 126	3	N		0			0			0	N
	Surrogate Phenol-d6		0	SVOC			Y		0			0			0	N	42 to 100	6	N		0			0			0	N
	Surrogate TCMX		0	SVOC			Y		0			0			0	N	93 to 114	2	N		0			0			0	N
	Surrogate toluene-d8		0	VOC			Y	88 to 88	1	Y		0			0	N	88 to 99	3	N		0			0			0	N
TPHs (NEPC 1999)	C10-C14 Fraction	0.05 mg/L	3	SVOC	5 to 6	5 to 10	Y	87 to 105	2	Y	ND	3	Y		0	N		0		87 to 87	1	N	ND	2	Y		1	Y
	C10-C36 Fraction (Total)	0.1 mg/L	3	SVOC	1 to 3	8 to 10	Y		0			0			0	N		0			0		ND	2	Y		1	Y
	C15-C28 Fraction	0.1 mg/L	3	SVOC	5 to 6	5 to 10	Y	70 to 70	1	N	ND	3	Y		0	N		0			0		ND	2	Y		1	Y
	C29-C36 Fraction	0.1 mg/L	3	SVOC	5 to 6	5 to 10	Y	94 to 94	1	Y	ND	3	Y		0	N		0			0		ND	2	Y		1	Y
	C6-C9 Fraction	0.02 mg/L	3	VOC	5 to 6	6 to 10	Y	76 to 110	3	N	ND	3	Y		1	Y		0		73 to 73	1	N	ND	2	Y		1	Y
TRHs (NEPC 2013)	>C10-C16 Fraction	0.05 mg/L	3	SVOC	5 to 6	5 to 10	Y	87 to 103	2	Y	ND	3	Y		0	N		0		85 to 85	1	N	ND	2	Y		1	Y
	>C10-C16 less Naphthalene (F2)	0.05 mg/L	3	SVOC	1 to 5	5 to 10	Y		0			0			0	N		0			0		ND	2	Y		1	Y
	>C10-C40 Fraction (Total)	0.1 mg/L	3	SVOC	5	8 to 10	Y		0			0			0	N		0			0		ND	2	Y		1	Y
	>C16-C34 Fraction	0.1 mg/L	3	SVOC	5 to 6	5 to 10	Y	70 to 70	1	N	ND	3	Y		0	N		0			0		ND	2	Y		1	Y
	>C34-C40 Fraction	0.1 mg/L	3	SVOC	5 to 6	5 to 10	Y	94 to 94	1	Y	ND	3	Y		0	N		0			0		ND	2	Y		1	Y
	C6-C10 Fraction	0.02 mg/L	3	VOC	5 to 6	6 to 10	Y	73 to 112	3	N	ND	3	Y		1	Y		0		71 to 71	1	N	ND	2	Y		1	Y
	C6-C10 less BTEX (F1)	0.02 mg/L	3	VOC	1 to 5	6 to 10	Y		0			0			0	N		0			0		ND	2	Y		1	Y

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Contents

Count of Results

Matrix_Type	Sample_Type	Reg	Leached	Spike_Compounds	Surrogate
SOIL	Normal	3049	0	0	120
SOIL	LAB_D	240	0	0	0
SOIL	MB	223	0	0	5
SOIL	Field_D	200	0	0	10
SOIL	LCS	168	0	0	5
SOIL	MS	0	0	173	0
SOIL	Interlab_D	159	0	0	10
WATER	MB	218	0	0	5
WATER	Normal	207	0	0	12
WATER	Rinsate	186	0	0	12
WATER	LCS	166	0	0	5
WATER	MS	0	0	92	0
WATER	Field_D	69	0	0	4
WATER	Interlab_D	48	0	0	5
WATER	LAB_D	22	0	0	0
WATER	Trip_S	18	0	0	3
WATER	Trip_B	18	0	0	3

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Field Blanks (WATER)
Filter: ALL

SDG	638491	638673	638491	638491	638673
Field ID	RINSATE 31-1	RINSATE	TRIP BLANK 29-1	TRIP BLANK 31-1	TRIP BLANK
Sampled_Date/Time	31/01/2019	1/02/2019	29/01/2019	31/01/2019	1/02/2019
Sample Type	Rinsate	Rinsate	Trip_B	Trip_B	Trip_B

Chem_Group	ChemName	Units	EQL					
BTEXN	Benzene	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Ethylbenzene	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Toluene	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Xylene (o)	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Xylene (m & p)	mg/l	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Xylene (Total)	mg/l	0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	Naphthalene	mg/l	0.00001	<0.01	<0.01			
Chlorinated Benzenes	Hexachlorobenzene	mg/l	0.0001	<0.0001	<0.0001			
EPA VIC - IWRG621	Organochlorine Pesticides EPAVic	µg/l	1	<1	<1			
	Other Organochlorine Pesticides EPAVic	µg/l	1	<1	<1			
Herbicides & Fungicides	Dinoseb	mg/l	0.1	<0.1	<0.1			
Ionic Balance	EC_Lab	µS/cm	1					
	Total Alkalinity (as CaCO3)	mg/l	5					
Major Anions	Sulphate (as S04)	mg/l	1					
	Chloride	mg/l	1					
	Bicarbonate Alkalinity (as CaCO3)	mg/l	5					
Metals & Metalloids	Arsenic (Total)	mg/l	0.001	<0.001	<0.001			
	Arsenic (Total) (Filtered)	mg/l	0.001					
	Cadmium	mg/l	0.0002	<0.0002	<0.0002			
	Cadmium (Filtered)	mg/l	0.0001					
	Chromium (Total)	mg/l	0.001	<0.001	<0.001			
	Chromium (Total) (Filtered)	mg/l	0.001					
	Copper	mg/l	0.001	<0.001	<0.001			
	Copper (Filtered)	mg/l	0.001					
	Lead	mg/l	0.001	<0.001	<0.001			
	Lead (Filtered)	mg/l	0.001					
	Mercury (Inorganic)	mg/l	0.0001	<0.0001	<0.0001			
	Mercury (Inorganic) (Filtered)	mg/l	0.00005					
	Nickel	mg/l	0.001	<0.001	<0.001			
	Nickel (Filtered)	mg/l	0.001					
	Zinc	mg/l	0.005	<0.005	<0.005			
	Zinc (Filtered)	mg/l	0.001					
Miscellaneous Inorganics	Electrical Conductivity	µS/cm	1					
Organochlorine Pesticides	4,4-DDE	µg/l	0.1	<0.1	<0.1			
	Aldrin	mg/l	0.0001	<0.0001	<0.0001			
	Aldrin + Dieldrin (Sum of Total)	mg/l	0.0001	<0.0001	<0.0001			
	alpha-BHC	mg/l	0.0001	<0.0001	<0.0001			
	beta-BHC	mg/l	0.0001	<0.0001	<0.0001			
	Chlordane	mg/l	0.001	<0.001	<0.001			
	DDD	mg/l	0.0001	<0.0001	<0.0001			
	DDT	mg/l	0.0001	<0.0001	<0.0001			
	Dieldrin	mg/l	0.0001	<0.0001	<0.0001			
	DDT+DDE+DDD (Sum of Total)	mg/l	0.0001	<0.0001	<0.0001			
	delta-BHC	mg/l	0.0001	<0.0001	<0.0001			
	Endosulfan alpha	mg/l	0.0001	<0.0001	<0.0001			
	Endosulfan beta	mg/l	0.0001	<0.0001	<0.0001			
	Endosulfan sulphate	mg/l	0.0001	<0.0001	<0.0001			
	Endrin	mg/l	0.0001	<0.0001	<0.0001			
	Endrin aldehyde	mg/l	0.0001	<0.0001	<0.0001			
	Endrin ketone	mg/l	0.0001	<0.0001	<0.0001			
	Heptachlor	mg/l	0.0001	<0.0001	<0.0001			
	Heptachlor Epoxide	mg/l	0.0001	<0.0001	<0.0001			
	Lindane	mg/l	0.0001	<0.0001	<0.0001			
	Methoxychlor	mg/l	0.0001	<0.0001	<0.0001			
	Pentachlorophenol	mg/l	0.01	<0.01	<0.01			
	Toxaphene	mg/l	0.01	<0.01	<0.01			
Phenols	2,4,5-trichlorophenol	mg/l	0.01	<0.01	<0.01			
	2,4,6-trichlorophenol	mg/l	0.01	<0.01	<0.01			
	2,4-dichlorophenol	mg/l	0.003	<0.003	<0.003			
	2,4-dimethylphenol	mg/l	0.003	<0.003	<0.003			
	2,4-dinitrophenol	mg/l	0.03	<0.03	<0.03			
	2,6-dichlorophenol	mg/l	0.003	<0.003	<0.003			
	2-chlorophenol	mg/l	0.003	<0.003	<0.003			
	2-Methylphenol	mg/l	0.003	<0.003	<0.003			
	2-nitrophenol	mg/l	0.01	<0.01	<0.01			
	3- & 4-Methylphenol	mg/l	0.006	<0.006	<0.006			
	4,6-Dinitro-2-methylphenol	mg/l	0.03	<0.03	<0.03			
	4,6-Dinitro-o-cyclohexyl phenol	mg/l	0.1	<0.1	<0.1			
	4-Chloro-3-Methylphenol	mg/l	0.01	<0.01	<0.01			
	4-nitrophenol	mg/l	0.03	<0.03	<0.03			
	Phenol	mg/l	0.003	<0.003	<0.003			
	Phenols (Total)	mg/l	0.05					
	Total Halogenated Phenol	mg/l	0.01	<0.01	<0.01			
	Total Non-Halogenated Phenol	mg/l	0.1	<0.1	<0.1			
	Total Tetrachlorophenols	mg/l	0.03	<0.03	<0.03			
Polychlorinated Biphenyls	Aroclor 1016	mg/l	0.001	<0.001				
	Aroclor 1221	mg/l	0.001	<0.001				
	Aroclor 1232	mg/l	0.001	<0.001				
	Aroclor 1242	mg/l	0.001	<0.001				
	Aroclor 1248	mg/l	0.001	<0.001				
	Aroclor 1254	mg/l	0.001	<0.001				
	Aroclor 1260	mg/l	0.001	<0.001				
	PCBs (Total)	mg/l	0.001	<0.001				
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/l	0.00001	<0.001	<0.00001			
	Acenaphthylene	mg/l	0.00001	<0.001	<0.00001			
	Anthracene	mg/l	0.00001	<0.001	<0.00001			
	Benz(a)anthracene	mg/l	0.00001	<0.001	<0.00001			
	Benzo(a)pyrene	mg/l	0.00001	<0.001	<0.00001			
	Benzo(a)pyrene TEQ (WHO)	mg/l	0.0005					
	Benzo(b,j)fluoranthene	mg/l	0.00001	<0.001	<0.00001			
	Benzo(g,h,i)perylene	mg/l	0.00001	<0.001	<0.00001			
	Benzo(k)fluoranthene	mg/l	0.00001	<0.001	<0.00001			
	Chrysene	mg/l	0.00001	<0.001	<0.00001			
	Dibenz(a,h)anthracene	mg/l	0.00001	<0.001	<0.00001			
	Fluoranthene	mg/l	0.00001	<0.001	<0.00001			
	Fluorene	mg/l	0.00001	<0.001	<0.00001			
	Indeno(1,2,3-c,d)pyrene	mg/l	0.00001	<0.001	<0.00001			
	Phenanthrene	mg/l	0.00001	<0.001	<0.00001			
	PAHs (Total)	mg/l	0.00001	<0.001	<0.00001			
	Pyrene	mg/l	0.00001	<0.001	<0.00001			
	Total Positive PAHs	mg/l						
TPHs (NEPC 1999)	C6-C9 Fraction	mg/l	0.01	<0.02	<0.02			
	C10-C14 Fraction	mg/l	0.05	<0.05	<0.05			
	C15-C28 Fraction	mg/l	0.1	<0.1	<0.1			
	C29-C36 Fraction	mg/l	0.1	<0.1	<0.1			
	C10-C36 Fraction (Total)	mg/l	0.1	<0.1	<0.1			
TRHs (NEPC 2013)	>C10-C16 Fraction	mg/l	0.05	<0.05	<0.05			
	>C16-C34 Fraction	mg/l	0.1	<0.1	<0.1			
	>C34-C40 Fraction	mg/l	0.1	<0.1	<0.1			
	>C10-C40 Fraction (Total)	mg/l	0.1	<0.1	<0.1			
	>C10-C16 less Naphthalene (F2)	mg/l	0.05	<0.05	<0.05			
	C6-C10 Fraction	mg/l	0.01	<0.02	<0.02			
	C6-C10 less BTEX (F1)	mg/l	0.01	<0.02	<0.02			

Contents
SDG's without Storage Blanks

SDG
638491
638673
639238
ENVIROLAB 2019-02-04T00:00:00
ENVIROLAB 2019-02-05T00:00:00

INSERT TABLE NAME
Project Number: [Project_Number]
Project Name: [Project_Name]

Field Duplicates (SOIL)
Filter: ALL

			SDG	638491	638491		638491	638491		638491	638491		638491	ENVIROLAB 2019-02-04T00:00:00		638491	ENVIROLAB 2019-02-04T00:00:00		638491	ENVIROLAB 2019-02-04T00:00:00				
			Field ID	TP01 0.2-0.3	QA20190130MN_01	RPD	TP03 0-0.15	QA20190130MN_03	RPD	TP04 0.2-0.3	QA20190130MN_04	RPD	TP01 0.2-0.3	QC20190130MN_01	RPD	TP03 0-0.15	QC20190130MN_03	RPD	TP04 0.2-0.3	QC20190130MN_04	RPD			
			Sampled Date/Time	30/01/2019	30/01/2019		30/01/2019	30/01/2019		30/01/2019	30/01/2019		30/01/2019	30/01/2019		30/01/2019	30/01/2019		30/01/2019	30/01/2019				
Chem_Grou	ChemName	Units	EQL																					
Metals & M	Arsenic (Tot	mg/kg	2 (Primary): 4 (Interlab)	15.0	18.0	18	8.1	10.0	21	4.3	2.7	46	15.0	10.0	40	8.1	7.0	15	4.3	<4.0	7			
	Cadmium	mg/kg	0.4	1.3	0.9	36	<0.4	<0.4	0	<0.4	<0.4	0	**1.3**	**0.6**	**74**	<0.4	<0.4	0	<0.4	<0.4	0			
	Chromium (	mg/kg	5 (Primary): 1 (Interlab)	49.0	47.0	4	24.0	28.0	15	**16.0**	**8.5**	**61**	**49.0**	**23.0**	**72**	24.0	18.0	29	16.0	14.0	13			
	Copper	mg/kg	5 (Primary): 1 (Interlab)	83.0	64.0	26	27.0	32.0	17	**16.0**	**8.7**	**59**	**83.0**	**27.0**	**102**	27.0	45.0	50	16.0	14.0	13			
	Lead	mg/kg	5 (Primary): 1 (Interlab)	**150.0**	**380.0**	**87**	41.0	47.0	14	12.0	8.4	35	**150.0**	**74.0**	**68**	41.0	36.0	13	12.0	12.0	0			
	Mercury (In	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	0.1	0	<0.1	<0.1	0			
	Nickel	mg/kg	5 (Primary): 1 (Interlab)	38.0	30.0	24	17.0	15.0	13	5.7	<5.0	13	**38.0**	**14.0**	**92**	17.0	13.0	27	5.7	5.0	13			
	Zinc	mg/kg	5 (Primary): 1 (Interlab)	240.0	180.0	29	100.0	110.0	10	**18.0**	**10.0**	**57**	**240.0**	**91.0**	**90**	100.0	85.0	16	18.0	13.0	32			
etalloids																								
TPHs (NEPC	C6-C9 Fract	mg/kg	20 (Primary): 25 (Interlab)	<20.0	<20.0	0	<20.0	<20.0	0	<20.0	<20.0	0	<20.0	<25.0	0	<20.0	<25.0	0	<20.0	<25.0	0			
	C10-C14 Fra	mg/kg	20 (Primary): 50 (Interlab)	<20.0	<20.0	0	<20.0	<20.0	0	<20.0	<20.0	0	<20.0	<50.0	0	<20.0	<50.0	0	<20.0	<50.0	0			
	C15-C28 Fra	mg/kg	50 (Primary): 100 (Interlab	<50.0	<50.0	0	**120.0**	**<50.0**	**82**	<50.0	<50.0	0	<50.0	<100.0	0	120.0	<100.0	18	<50.0	<100.0	0			
	C29-C36 Fra	mg/kg	50 (Primary): 100 (Interlab	<50.0	<50.0	0	**150.0**	**<50.0**	**100**	<50.0	<50.0	0	<50.0	<100.0	0	150.0	170.0	13	<50.0	<100.0	0			
	C10-C36 Fra	mg/kg	50	<50.0	<50.0	0	**270.0**	**<50.0**	**138**	<50.0	<50.0	0	<50.0			270.0			<50.0					
1999)																								
TRHs (NEPC	>C10-C16 Fr	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0			
	>C16-C34 Fr	mg/kg	100	<100.0	<100.0	0	**210.0**	**<100.0**	**71**	<100.0	<100.0	0	<100.0	<100.0	0	210.0	210.0	0	<100.0	<100.0	0			
	>C34-C40 Fr	mg/kg	100	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	**<100.0**	**170.0**	**52**	<100.0	<100.0	0			
	>C10-C40 Fr	mg/kg	100 (Primary): 50 (Interlab	<100.0	<100.0	0	**210.0**	**<100.0**	**71**	<100.0	<100.0	0	<100.0	<50.0	0	**210.0**	**380.0**	**58**	<100.0	<50.0	0			
	>C10-C16 le	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0			
	C6-C10 Frac	mg/kg	20 (Primary): 25 (Interlab)	<20.0	<20.0	0	<20.0	<20.0	0	<20.0	<20.0	0	<20.0	<25.0	0	<20.0	<25.0	0	<20.0	<25.0	0			
	C6-C10 less	mg/kg	20 (Primary): 25 (Interlab)	<20.0	<20.0	0	<20.0	<20.0	0	<20.0	<20.0	0	<20.0	<25.0	0	<20.0	<25.0	0	<20.0	<25.0	0			
2013)																								
BTEXN	Benzene	mg/kg	0.1 (Primary): 0.2 (Interlab	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.2	0	<0.1	<0.2	0	<0.1	<0.2	0			
	Ethylbenzer	mg/kg	0.1 (Primary): 1 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<1.0	0	<0.1	<1.0	0	<0.1	<1.0	0			
	Toluene	mg/kg	0.1 (Primary): 0.5 (Interlab	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.5	0	<0.1	<0.5	0			
	Xylene (o)	mg/kg	0.1 (Primary): 1 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<1.0	0	<0.1	<1.0	0	<0.1	<1.0	0			
	Xylene (m &	mg/kg	0.2 (Primary): 2 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<2.0	0	<0.2	<2.0	0	<0.2	<2.0	0			
	Xylene (Tots	mg/kg	0.3 (Primary): 1 (Interlab)	<0.3	<0.3	0	<0.3	<0.3	0	<0.3	<0.3	0	<0.3	<1.0	0	<0.3	<1.0	0	<0.3	<1.0	0			
	Naphthalen	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<1.0	0	<0.5	<0.1	0	<0.5	<1.0	0			
	Naphthalen	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5			<0.5	<0.5	0	<0.5			<0.5	<1.0	0	<0.5	<0.1	0	<0.5	<1.0	0			
Polycyclic A	Acenaphthe	mg/kg	0.5 (Primary): 0.1 (Interlab				<0.5	<0.5	0							<0.5	<0.1	0						
	Acenaphthy	mg/kg	0.5 (Primary): 0.1 (Interlab				<0.5	<0.5	0							<0.5	<0.1	0						
	Anthracene	mg/kg	0.5 (Primary): 0.1 (Interlab				<0.5	<0.5	0							<0.5	<0.1	0						
	Benz(a)anth	mg/kg	0.5 (Primary): 0.1 (Interlab				<0.5	<0.5	0							<0.5	<0.1	0						
	Benzo(a)pyr	mg/kg	0.5 (Primary): 0.05 (Interlab				<0.5	<0.5	0							<0.5	<0.05	0						
	Benzo(a)pyr	mg/kg	0.5				<0.5	<0.5	0							<0.5	<0.5	0						
	Benzo(a)pyr	mg/kg	0.5				0.6	0.6	0							0.6	<0.5	18						
	Benzo(a)pyr	mg/kg	0.5				1.2	1.2	0							**1.2**	**<0.5**	**82**						
	Benzo(b,j)fl	mg/kg	0.5				<0.5	<0.5	0							<0.5								
	Benzo(g,h,i)	mg/kg	0.5 (Primary): 0.1 (Interlab				<0.5	<0.5	0							<0.5	<0.1	0						
	Benzo(k)flu	mg/kg	0.5				<0.5	<0.5	0							<0.5								
	Chrysene	mg/kg	0.5 (Primary): 0.1 (Interlab				<0.5	<0.5	0							<0.5	<0.1	0						
	Dibenz(a,h)	mg/kg	0.5 (Primary): 0.1 (Interlab				<0.5	<0.5	0							<0.5	<0.1	0						
	Fluoranther	mg/kg	0.5 (Primary): 0.1 (Interlab				<0.5	<0.5	0							<0.5	0.1	0						
	Fluorene	mg/kg	0.5 (Primary): 0.1 (Interlab				<0.5	<0.5	0							<0.5	<0.1	0						
	Indeno(1,2,	mg/kg	0.5 (Primary): 0.1 (Interlab				<0.5	<0.5	0							<0.5	<0.1	0						
	Phenanthre	mg/kg	0.5 (Primary): 0.1 (Interlab				<0.5	<0.5	0							<0.5	<0.1	0						
	PAHs (Total	mg/kg	0.5				<0.5	<0.5	0							<0.5								
	Pyrene	mg/kg	0.5 (Primary): 0.1 (Interlab				<0.5	<0.5	0							<0.5	0.1	0						
omatic Hydrocarbons																								
Organochlo	4,4-DDE	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	Aldrin	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	Aldrin + Die	mg/kg	0.05				<0.05	<0.05	0	<0.05	<0.05	0				<0.05			<0.05					
	alpha-BHC	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	beta-BHC	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	Chlordane	mg/kg	0.1				<0.1	<0.1	0	<0.1	<0.1	0				<0.1			<0.1					
	DDD	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	DDT	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	Dieldrin	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	DDT+DDE+D	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	delta-BHC	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	Endosulfan	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	Endosulfan	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	Endosulfan	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	Endrin	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	Endrin aldel	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	Endrin keto	mg/kg	0.05				<0.05	<0.05	0	<0.05	<0.05	0				<0.05			<0.05					
	Heptachlor	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	Heptachlor	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	Lindane	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	Methoxychl	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
	Pentachlord	mg/kg	1				<1.0	<1.0	0							<1.0								
	Toxaphene	mg/kg	1				<1.0	<1.0	0	<1.0	<1.0	0				<1.0			<1.0					
ine Pesticides																								
Polychlorina	Aroclor 101	mg/kg	0.1				<0.1	<0.1	0							<0.1	<0.1	0						
	Aroclor 122	mg/kg	0.1				<0.1	<0.1	0							<0.1	<0.1	0						
	Aroclor 123	mg/kg	0.1				<0.1	<0.1	0							<0.1	<0.1	0						
	Aroclor 124	mg/kg	0.1				<0.1	<0.1	0							<0.1	<0.1	0						
	Aroclor 124	mg/kg	0.1				<0.1	<0.1	0							<0.1	<0.1	0						
	Aroclor 125	mg/kg	0.1				<0.1	<0.1	0							<0.1	<0.1	0						
	Aroclor 126	mg/kg	0.1				<0.1	<0.1	0							<0.1	<0.1	0						
	PCBs (Total)	mg/kg	0.1				<0.1	<0.1	0							<0.1	<0.1	0						
ted Biphenyls																								
Phenols	2,4,5-trichlo	mg/kg	1				<1.0	<1.0	0							<1.0								
	2,4,6-trichlo	mg/kg	1				<1.0	<1.0	0							<1.0								
	2,4-dichloro	mg/kg	0.5				<0.5	<0.5	0							<0.5								
	2,4-dimethy	mg/kg	0.5				<0.5	<0.5	0							<0.5								
	2,4-dinitrop	mg/kg	5				<5.0	<5.0	0							<5.0								
	2,6-dichlord	mg/kg	0.5				<0.5	<0.5	0							<0.5								
	2-chlorophe	mg/kg	0.5				<0.5	<0.5	0							<0.5								
	2-Methylph	mg/kg	0.2				<0.2	<0.2	0							<0.2								
	2-nitrophen	mg/kg	1				<1.0	<1.0	0							<1.0								
	3- & 4-Meth	mg/kg	0.4				<0.4	<0.4	0							<0.4								
	4,6-Dinitro-	mg/kg	5				<5.0	<5.0	0							<5.0								
	4,6-Dinitro-	mg/kg	20				<20.0	<20.0	0							<20.0								
	4-Chloro-3-	mg/kg	1				<1.0	<1.0	0							<1.0								
	4-nitrophen	mg/kg	5				<5.0	<5.0	0							<5.0								
	Phenol	mg/kg	0.5				<0.5	<0.5	0							<0.5								
	Total Halog	mg/kg	1				<1.0	<1.0	0							<1.0								
	Total Non-H	mg/kg	20				<20.0	<20.0	0							<20.0								
	Total Tetrac	mg/kg	1				<1.0	<1.0	0							<1.0								
Chlorinated	Hexachlorot	mg/kg	0.05 (Primary): 0.1 (Interlab				<0.05	<0.05	0	<0.05	<0.05	0				<0.05	<0.1	0	<0.05	<0.1	0			
Benzenes																								
Asbestos	Approx. San	G					805.0	855.0	6							805.0								
	Asbestos fro	%w/w					0.0	0.0	0							0.0								
	Asbestos fro	%w/w					0.0	0.0	0							0.0								
Asbestos	Asbestos Re	COMMENT					1.0	1.0	0							1.0								
Asbestos	Mass ACM	G					0.0	0.0	0							0.0								
	Mass Asbes	G					0.0	0.0	0							0.0								
	Mass FA	G					0.0	0.0	0							0.0								
	Mass Asbes	G					0.0	0.0	0							0.0								
	Mass AF	G					0.0	0.0	0							0.0								
	Mass Asbes	G					0.0	0.0	0							0.0								
	Mass Asbes	G					0.0	0.0	0							0.0								
Asbestos - T	ACM - Comr	COMMENT					1.0	1.0	0							1.0								
	AF - Comme	COMMENT					1.0	1.0	0							1.0								
	FA - Comme	COMMENT					1.0	1.0	0							1.0								
	Organic Fibr	COMMENT					1.0	1.0	0							1.0								
	Respirable F	COMMENT					1.0	1.0	0							1.0								
	Synthetic Fi	COMMENT					1.0	1.0	0							1.0								
race Analysis																								
Herbicides &	Dinoseb	mg/kg	20				<20.0	<20.0	0							<20.0								
& Fungicides																								
Other	% Moisture	%	1	10.0	13.0	26	12.0	10.0	18	14.0	14.0	0	10.0			12.0			14.0					
EPA VIC - IW	Organochlo	mg/kg	0.1				<0.1	<0.1	0	<0.1	<0.1	0				<0.1			<0.1					
	Other Organ	mg/kg	0.1				<0.1	<0.1	0	<0.1	<0.1	0				<0.1			<0.1					

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 50 (1-10 x EQL); 50 (10-30 x EQL); 50 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

INSERT TABLE NAME
Project Number: [Project_Number]
Project Name: [Project_Name]
Field Duplicates (WATER)
Filter: ALL

SDG	638673	638673		638673	ENVIROLAB 2019-02-05T00:00:00			
Field ID	MW01	QA20190201	**RPD**	MW01	QC20190201	**RPD**		
Sampled Date/Time	1/02/2019	1/02/2019		1/02/2019	1/02/2019			

Chem_Grou	ChemName	Units	EQL						
Metals & M	Arsenic (Tot	mg/l	0.001	0.003	0.003	0	0.003	0.003	0
	Cadmium (F	mg/l	0.0002 (Primary): 0.0001 (I	0.0003	0.0003	0	0.0003	0.0003	0
	Chromium (	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Copper (Filt	mg/l	0.001	**<0.001**	**0.003**	**100**	<0.001	0.001	0
	Lead (Filtere	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Mercury (In	mg/l	0.0001 (Primary): 0.00005	<0.0001	<0.0001	0	<0.0001	<0.0001	0
	Nickel (Filte	mg/l	0.001	0.008	0.008	0	0.008	0.007	13
	Zinc (Filtere	mg/l	0.005 (Primary): 0.001 (Int	**0.02**	**0.041**	**69**	0.02	0.026	26
etalloids									
TPHs (NEPC	C6-C9 Fracti	mg/l	0.02 (Primary): 0.01 (Interl	<0.02	<0.02	0	<0.02	<0.01	0
	C10-C14 Fra	mg/l	0.05	<0.05	<0.05	0	<0.05	<0.05	0
	C15-C28 Fra	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	C29-C36 Fra	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	C10-C36 Fra	mg/l	0.1	<0.1	<0.1	0	<0.1		
1999)									
TRHs (NEPC	>C10-C16 Fr	mg/l	0.05	<0.05	<0.05	0	<0.05	<0.05	0
	>C16-C34 Fr	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	>C34-C40 Fr	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	>C10-C40 Fr	mg/l	0.1	<0.1	<0.1	0	<0.1		
	>C10-C16 le	mg/l	0.05	<0.05	<0.05	0	<0.05	<0.05	0
	C6-C10 Frac	mg/l	0.02 (Primary): 0.01 (Interl	<0.02	<0.02	0	<0.02	<0.01	0
	C6-C10 less	mg/l	0.02 (Primary): 0.01 (Interl	<0.02	<0.02	0	<0.02	<0.01	0
2013)									
BTEXN	Benzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Ethylbenzen	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Toluene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Xylene (o)	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001	0
	Xylene (m &	mg/l	0.002	<0.002	<0.002	0	<0.002	<0.002	0
	Xylene (Tota	mg/l	0.003	<0.003	<0.003	0	<0.003		
	Naphthalen	mg/l	0.01 (Primary): 0.001 (Inter	<0.01	<0.01	0	<0.01	<0.0002	0
	Naphthalen	mg/l	0.00001 (Primary): 0.001 (I	<0.0	<0.0	0	<0.0	<0.0002	0
Polycyclic Au	Acenaphthe	mg/l	0.00001 (Primary): 0.0001	<0.0	<0.0	0	<0.0	<0.0001	0
	Acenaphthy	mg/l	0.00001 (Primary): 0.0001	<0.0	<0.0	0	<0.0	<0.0001	0
	Anthracene	mg/l	0.00001 (Primary): 0.0001	<0.0	<0.0	0	<0.0	<0.0001	0
	Benz(a)anth	mg/l	0.00001 (Primary): 0.0001	<0.0	<0.0	0	<0.0	<0.0001	0
	Benzo(a)pyr	mg/l	0.00001 (Primary): 0.0001	<0.0	<0.0	0	<0.0	<0.0001	0
	Benzo(b,j)flu	mg/l	0.00001	<0.0	<0.0	0	<0.0		
	Benzo(g,h,i)	mg/l	0.00001 (Primary): 0.0001	<0.0	<0.0	0	<0.0	<0.0001	0
	Benzo(k)fluo	mg/l	0.00001	<0.0	<0.0	0	<0.0		
	Chrysene	mg/l	0.00001 (Primary): 0.0001	<0.0	<0.0	0	<0.0	<0.0001	0
	Dibenz(a,h)a	mg/l	0.00001 (Primary): 0.0001	<0.0	<0.0	0	<0.0	<0.0001	0
	Fluoranthen	mg/l	0.00001 (Primary): 0.0001	<0.0	<0.0	0	<0.0	<0.0001	0
	Fluorene	mg/l	0.00001 (Primary): 0.0001	<0.0	<0.0	0	<0.0	<0.0001	0
	Indeno(1,2,3	mg/l	0.00001 (Primary): 0.0001	<0.0	<0.0	0	<0.0	<0.0001	0
	Phenanthre	mg/l	0.00001 (Primary): 0.0001	<0.0	<0.0	0	<0.0	<0.0001	0
	PAHs (Total)	mg/l	0.00001	<0.0	<0.0	0	<0.0		
	Pyrene	mg/l	0.00001 (Primary): 0.0001	<0.0	<0.0	0	<0.0	<0.0001	0
omatic Hydrocarbons									
Organochlo	Pentachloro	mg/l	0.01	<0.01	<0.01	0	<0.01		
ine Pesticides									
Phenols	2,4,5-trichlo	mg/l	0.01	<0.01	<0.01	0	<0.01		
	2,4,6-trichlo	mg/l	0.01	<0.01	<0.01	0	<0.01		
	2,4-dichloro	mg/l	0.003	<0.003	<0.003	0	<0.003		
	2,4-dimethy	mg/l	0.003	<0.003	<0.003	0	<0.003		
	2,4-dinitrop	mg/l	0.03	<0.03	<0.03	0	<0.03		
	2,6-dichloro	mg/l	0.003	<0.003	<0.003	0	<0.003		
	2-chlorophe	mg/l	0.003	<0.003	<0.003	0	<0.003		
	2-Methylph	mg/l	0.003	<0.003	<0.003	0	<0.003		
	2-nitrophen	mg/l	0.01	<0.01	<0.01	0	<0.01		
	3- & 4-Meth	mg/l	0.006	<0.006	<0.006	0	<0.006		
	4,6-Dinitro-2	mg/l	0.03	<0.03	<0.03	0	<0.03		
	4,6-Dinitro-(	mg/l	0.1	<0.1	<0.1	0	<0.1		
	4-Chloro-3-M	mg/l	0.01	<0.01	<0.01	0	<0.01		
	4-nitrophen	mg/l	0.03	<0.03	<0.03	0	<0.03		
	Phenol	mg/l	0.003	<0.003	<0.003	0	<0.003		
	Total Haloge	mg/l	0.01	<0.01	<0.01	0	<0.01		
	Total Non-H	mg/l	0.1	<0.1	<0.1	0	<0.1		
	Total Tetrac	mg/l	0.03	<0.03	<0.03	0	<0.03		
Herbicides &	Dinoseb	mg/l	0.1	<0.1	<0.1	0	<0.1		
& Fungicides									
Major Anior	Sulphate (as	mg/l	5 (Primary): 1 (Interlab)	850.0	850.0	0	850.0	930.0	9
	Chloride	mg/l	1	8400.0	8300.0	1	8400.0	8300.0	1
s									
Ionic Balanc	EC_Lab	µS/cm	1	27000.0	27000.0	0	27000.0		
	Total Alkalir	mg/l	20 (Primary): 5 (Interlab)	1100.0	1100.0	0	1100.0	1200.0	9

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

INSERT TABLE NAME

Project Number: [Project_Number]

Project Name: [Project_Name]

Field Duplicates (WATER)

Filter: ALL

SDG	638673	638673		638673	ENVIROLAB 2019-02-05T00:00:00	
Field ID	MW01	QA20190201	**RPD**	MW01	QC20190201	**RPD**
Sampled Date/Time	1/02/2019	1/02/2019		1/02/2019	1/02/2019	

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 50 (1-10 x EQL); 50 (10-30 x EQL); 50 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in th

Contents

Surrogate Variation > 1% or outside lab LCL or UCL

SDG	Expr1001	Lab_Report_Number	Sample_Type	Matrix_Type	SampleCode	Field_ID	Depth	Sampled_Date-Time	Compound	Recovery %	Unit	LCL	UCL	Lab_Qualifier	Lab_Comments
638491	638491	638491	Normal	SOIL	S19-Fe01404	TP02 0-0.15	TP020 - 0.15	30/01/2019	2-Fluorobiphenyl (surr.)	58	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01404	TP02 0-0.15	TP020 - 0.15	30/01/2019	4-Bromofluorobenzene (surr.)	66	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01404	TP02 0-0.15	TP020 - 0.15	30/01/2019	Dibutylchlorendate (surr.)	51	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01404	TP02 0-0.15	TP020 - 0.15	30/01/2019	p-Terphenyl-d14 (surr.)	60	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01404	TP02 0-0.15	TP020 - 0.15	30/01/2019	Tetrachloro-m-xylene (surr.)	65	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01407	TP01 0.2-0.3	TP010.2 - 0.3	30/01/2019	4-Bromofluorobenzene (surr.)	67	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01407	TP01 0.2-0.3	TP010.2 - 0.3	30/01/2019	Phenol-d6 (surr.)	66	%	20	130		
638673	638673	638673	Normal	SOIL	S19-Fe02489	TP10 0-0.1	TP10	1/02/2019	p-Terphenyl-d14 (surr.)	69	%	50	150		
638673	638673	638673	Normal	SOIL	S19-Fe02489	TP10 0-0.1	TP10	1/02/2019	4-Bromofluorobenzene (surr.)	66	%	50	150		
638673	638673	638673	Normal	SOIL	S19-Fe02493	TP19 0-0.1	TP19	1/02/2019	4-Bromofluorobenzene (surr.)	67	%	50	150		
638673	638673	638673	Normal	SOIL	S19-Fe02493	TP19 0-0.1	TP19	1/02/2019	p-Terphenyl-d14 (surr.)	65	%	50	150		
638673	638673	638673	Normal	SOIL	S19-Fe02495	TP23 0-0.1	TP23	1/02/2019	4-Bromofluorobenzene (surr.)	66	%	50	150		
638673	638673	638673	Normal	SOIL	S19-Fe02500	TP08 0-0.1	TP08	1/02/2019	4-Bromofluorobenzene (surr.)	65	%	50	150		
638673	638673	638673	Normal	WATER	S19-Fe02501	MW01	MW01	1/02/2019	Phenol-d6 (surr.)	65	%	20	130		
638673	638673	638673	Normal	WATER	S19-Fe02502	MW02	MW02	1/02/2019	4-Bromofluorobenzene (surr.)	63	%	50	150		
638673	638673	638673	Field_D	WATER	S19-Fe02504	QA20190201	MW01	1/02/2019	p-Terphenyl-d14 (surr.)	131	%	50	150		
638673	638673	638673	Rinsate	WATER	S19-Fe02507	RINSATE	RINSATE	1/02/2019	Dibutylchlorendate (surr.)	133	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01411	TP05 0-0.1	TP050 - 0.1	30/01/2019	4-Bromofluorobenzene (surr.)	67	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01411	TP05 0-0.1	TP050 - 0.1	30/01/2019	Phenol-d6 (surr.)	27	%	20	130		
638491	638491	638491	Normal	SOIL	S19-Fe01415	TP11 0-0.1	TP110 - 0.1	30/01/2019	2-Fluorobiphenyl (surr.)	67	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01415	TP11 0-0.1	TP110 - 0.1	30/01/2019	4-Bromofluorobenzene (surr.)	67	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01415	TP11 0-0.1	TP110 - 0.1	30/01/2019	p-Terphenyl-d14 (surr.)	64	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01417	TP12 0-0.1	TP120 - 0.1	30/01/2019	4-Bromofluorobenzene (surr.)	68	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01420	TP13 0-0.1	TP130 - 0.1	30/01/2019	p-Terphenyl-d14 (surr.)	65	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01424	TP18 0-0.1	TP180 - 0.1	30/01/2019	4-Bromofluorobenzene (surr.)	59	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01424	TP18 0-0.1	TP180 - 0.1	30/01/2019	Phenol-d6 (surr.)	66	%	20	130		
638491	638491	638491	Normal	SOIL	S19-Fe01424	TP18 0-0.1	TP180 - 0.1	30/01/2019	Tetrachloro-m-xylene (surr.)	131	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01427	TP17 0.3-0.4	TP170.3 - 0.4	30/01/2019	2-Fluorobiphenyl (surr.)	68	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01427	TP17 0.3-0.4	TP170.3 - 0.4	30/01/2019	4-Bromofluorobenzene (surr.)	68	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01427	TP17 0.3-0.4	TP170.3 - 0.4	30/01/2019	p-Terphenyl-d14 (surr.)	65	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01427	TP17 0.3-0.4	TP170.3 - 0.4	30/01/2019	Phenol-d6 (surr.)	30	%	20	130		
638491	638491	638491	Normal	SOIL	S19-Fe01429	TP16 0-0.1	TP160 - 0.1	30/01/2019	4-Bromofluorobenzene (surr.)	62	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01432	TP20 0.4-0.5	TP200.4 - 0.5	31/01/2019	4-Bromofluorobenzene (surr.)	65	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01436	TP21 0.4-0.5	TP210.4 - 0.5	31/01/2019	4-Bromofluorobenzene (surr.)	64	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01437	TP22 0-0.1	TP220 - 0.1	31/01/2019	Dibutylchlorendate (surr.)	136	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01437	TP22 0-0.1	TP220 - 0.1	31/01/2019	Phenol-d6 (surr.)	65	%	20	130		
638491	638491	638491	Normal	SOIL	S19-Fe01437	TP22 0-0.1	TP220 - 0.1	31/01/2019	Tetrachloro-m-xylene (surr.)	148	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01442	TP28 0-0.1	TP280 - 0.1	31/01/2019	Dibutylchlorendate (surr.)	65	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01443	TP28 0.4-0.5	TP280.4 - 0.5	31/01/2019	Phenol-d6 (surr.)	63	%	20	130		
638491	638491	638491	Normal	SOIL	S19-Fe01449	TP30 0-0.1	TP300 - 0.1	31/01/2019	2-Fluorobiphenyl (surr.)	50	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01449	TP30 0-0.1	TP300 - 0.1	31/01/2019	p-Terphenyl-d14 (surr.)	55	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01449	TP30 0-0.1	TP300 - 0.1	31/01/2019	Tetrachloro-m-xylene (surr.)	65	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01453	TP31 0-0.1	TP310 - 0.1	31/01/2019	4-Bromofluorobenzene (surr.)	66	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01456	TP33 0-0.1	TP330 - 0.1	31/01/2019	4-Bromofluorobenzene (surr.)	66	%	50	150		
638491	638491	638491	Field_D	SOIL	S19-Fe01458	QA20190130N	TP01	30/01/2019	4-Bromofluorobenzene (surr.)	66	%	50	150		
638491	638491	638491	Field_D	SOIL	S19-Fe01459	QA20190130N	TP03	30/01/2019	4-Bromofluorobenzene (surr.)	67	%	50	150		
638491	638491	638491	Field_D	SOIL	S19-Fe01459	QA20190130N	TP03	30/01/2019	Phenol-d6 (surr.)	40	%	20	130		
638491	638491	638491	Normal	SOIL	S19-Fe01465	TP04 0.2-0.3	TP040.2 - 0.3	30/01/2019	4-Bromofluorobenzene (surr.)	67	%	50	150		
638491	638491	638491	Normal	SOIL	S19-Fe01465	TP04 0.2-0.3	TP040.2 - 0.3	30/01/2019	Phenol-d6 (surr.)	69	%	20	130		
638491	638491	638491	Field_D	SOIL	S19-Fe01486	QA20190130N	TP04	30/01/2019	4-Bromofluorobenzene (surr.)	67	%	50	150		
638491	638491	638491	Rinsate	WATER	S19-Fe01493	RINSATE 31-	RINSATE	31/01/2019	2-Fluorobiphenyl (surr.)	68	%	50	150		
638491	638491	638491	Rinsate	WATER	S19-Fe01493	RINSATE 31-	RINSATE	31/01/2019	Phenol-d6 (surr.)	42	%	20	130		

Contents

Laboratory Control Samples, Error > 14%

SDG	Matrix_Type	SampleCode	Method_Name	OriginalChemName	Recovery %	Unit	Result_Type	LCL	UCL	Lab_Comments
638673	SOIL	LCS_1_638673	LTM-ORG-2130 PAH and Phenols in Soil and Water	2-Cyclohexyl-4.6-dinitrophenol	34	%	REG			
638673	SOIL	LCS_1_638673	LTM-ORG-2130 PAH and Phenols in Soil and Water	2.4-Dinitrophenol	57	%	REG			
638673	WATER	LCS_7_638673	LTM-ORG-2130 PAH and Phenols in Soil and Water	2-Methylphenol (o-Cresol)	59	%	REG			
638673	WATER	LCS_7_638673	LTM-ORG-2130 PAH and Phenols in Soil and Water	2.4-Dichlorophenol	67	%	REG			
638673	WATER	LCS_7_638673	LTM-ORG-2130 PAH and Phenols in Soil and Water	2.4-Dinitrophenol	50	%	REG			
638673	WATER	LCS_7_638673	LTM-ORG-2130 PAH and Phenols in Soil and Water	2.4.5-Trichlorophenol	64	%	REG			
638673	WATER	LCS_7_638673	LTM-ORG-2130 PAH and Phenols in Soil and Water	2.4.6-Trichlorophenol	61	%	REG			
638673	WATER	LCS_7_638673	LTM-ORG-2130 PAH and Phenols in Soil and Water	2.6-Dichlorophenol	65	%	REG			
638673	WATER	LCS_7_638673	LTM-ORG-2130 PAH and Phenols in Soil and Water	3&4-Methylphenol (m&p-Cresol)	66	%	REG			
638673	WATER	LCS_7_638673	LTM-ORG-2130 PAH and Phenols in Soil and Water	Pentachlorophenol	46	%	REG			
638673	WATER	LCS_7_638673	LTM-ORG-2130 PAH and Phenols in Soil and Water	Phenol	62	%	REG			
638673	WATER	LCS_7_638673	LTM-ORG-2130 PAH and Phenols in Soil and Water	Tetrachlorophenols - Total	58	%	REG			
638491	SOIL	LCS_1_638491	LTM-ORG-2130 PAH and Phenols in Soil and Water	2-Methylphenol (o-Cresol)	66	%	REG			
638491	SOIL	LCS_1_638491	LTM-ORG-2130 PAH and Phenols in Soil and Water	2.4-Dimethylphenol	65	%	REG			
638491	SOIL	LCS_6_638491	LTM-ORG-2130 PAH and Phenols in Soil and Water	4-Nitrophenol	43	%	REG			
638491	WATER	LCS_14_638491	LTM-ORG-2130 PAH and Phenols in Soil and Water	2.6-Dichlorophenol	38	%	REG			
638491	WATER	LCS_14_638491	LTM-ORG-2130 PAH and Phenols in Soil and Water	Pentachlorophenol	33	%	REG			
638491	WATER	LCS_14_638491	LTM-ORG-2130 PAH and Phenols in Soil and Water	Phenol	58	%	REG			
638491	WATER	LCS_14_638491	LTM-ORG-2130 PAH and Phenols in Soil and Water	Tetrachlorophenols - Total	54	%	REG			
638491	WATER	LCS_15_638491	LTM-ORG-2130 PAH and Phenols in Soil and Water	4-Nitrophenol	36	%	REG			

Contents

Less than 1 matrix spike in 20 samples, or less than 1 matrix duplicate in 20 samples

Matrix_Type	Number_of_Samples	Number_of_Matrix_Spike_Samples	Number_of_Matrix_Spike_Dupe_Samples
SOIL	210	24	0
WATER	60	12	0

Contents

Matrix Spike Recoveries less than 100% or greater than 100% or outside lab LCL or UCL

SDG	Lab_Report_Number	Matrix_Type	SampleCode	Field_ID	Depth	Sampled_Date-Time	Method_Name	Compound	Recovery %	Result_Type	LCL	UCL	Lab_Comments
638673	638673	SOIL	NCP_Fe04529_638673-SPK			1/02/2019	USEPA 8270 Phenols	Dinoseb	37	SC			
638673	638673	SOIL	NCP_Fe04529_638673-SPK			1/02/2019	LTM-ORG-2130 PAH a	Pentachlorophenol	39	SC			
638673	638673	WATER	NCP_Fe02928_638673-SPK			1/02/2019	LTM-INO-4110 Sulfate	Sulphate (as SO4)	137	SC			The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
638673	638673	WATER	NCP_Se37052_638673-SPK			1/02/2019	LTM-MET-3040 Metals	Zinc	51	SC			The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
638491	638491	SOIL	NCP_Fe07985_638491-SPK			30/01/2019	LTM-ORG-2130 PAH a	2-Chlorophenol	60	SC			
638491	638491	SOIL	NCP_Fe07985_638491-SPK			30/01/2019	LTM-ORG-2130 PAH a	2,4-Dinitrophenol	38	SC			
638491	638491	SOIL	NCP_Fe07985_638491-SPK			30/01/2019	LTM-ORG-2130 PAH a	4-Nitrophenol	61	SC			
638491	638491	SOIL	NCP_Fe07985_638491-SPK			30/01/2019	LTM-ORG-2130 PAH a	Tetrachlorophenols - T	50	SC			
638491	638491	WATER	NCP_Fe00060_638491-SPK			31/01/2019	LTM-ORG-2130 PAH a	2,4-Dimethylphenol	66	SC			
638491	638491	WATER	NCP_Fe00060_638491-SPK			31/01/2019	LTM-ORG-2130 PAH a	4-Nitrophenol	57	SC			
638491	638491	WATER	NCP_Fe00060_638491-SPK			31/01/2019	LTM-ORG-2130 PAH a	Benzo(b&j)fluoranthen	60	SC			The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
638491	638491	WATER	NCP_Fe00060_638491-SPK			31/01/2019	LTM-ORG-2130 PAH a	Benzo(g.h.i)perylene	67	SC			The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
638491	638491	WATER	NCP_Fe00060_638491-SPK			31/01/2019	LTM-ORG-2130 PAH a	Dibenz(a.h)anthracen	62	SC			The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
638491	638491	WATER	NCP_Fe00060_638491-SPK			31/01/2019	LTM-ORG-2130 PAH a	Phenol	37	SC			
638491	638491	WATER	NCP_Fe00060_638491-SPK			31/01/2019	LTM-ORG-2130 PAH a	Pyrene	131	SC			The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference

Contents

Trip Spike Recoveries (100% - 100% is acceptable)

SDG	Lab_Report_Number	Matrix_Type	SampleCode	Field_ID	Method_Name	Compound	Trip_Spike_Result	Trip_Spike_Control	Result_Units	Spike_Recovery_%	Acceptable	Result_Type	Lab_Comments
638491	638491	WATER	S19-Fe01488	TRIP SPIKE 29-1	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Benzene	NA	NA	NA	95	N	REG	
638491	638491	WATER	S19-Fe01488	TRIP SPIKE 29-1	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Ethylbenzene	NA	NA	NA	120	N	REG	
638491	638491	WATER	S19-Fe01488	TRIP SPIKE 29-1	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	m&p-Xylenes	NA	NA	NA	110	N	REG	
638491	638491	WATER	S19-Fe01488	TRIP SPIKE 29-1	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	o-Xylene	NA	NA	NA	120	N	REG	
638491	638491	WATER	S19-Fe01488	TRIP SPIKE 29-1	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Toluene	NA	NA	NA	110	N	REG	
638491	638491	WATER	S19-Fe01488	TRIP SPIKE 29-1	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Xylenes - Total	NA	NA	NA	120	N	REG	
638491	638491	WATER	S19-Fe01490	TRIP SPIKE 31-1	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Benzene	NA	NA	NA	100	Y	REG	
638491	638491	WATER	S19-Fe01490	TRIP SPIKE 31-1	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Ethylbenzene	NA	NA	NA	110	N	REG	
638491	638491	WATER	S19-Fe01490	TRIP SPIKE 31-1	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	m&p-Xylenes	NA	NA	NA	110	N	REG	
638491	638491	WATER	S19-Fe01490	TRIP SPIKE 31-1	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	o-Xylene	NA	NA	NA	120	N	REG	
638491	638491	WATER	S19-Fe01490	TRIP SPIKE 31-1	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Toluene	NA	NA	NA	120	N	REG	
638491	638491	WATER	S19-Fe01490	TRIP SPIKE 31-1	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Xylenes - Total	NA	NA	NA	110	N	REG	
638673	638673	WATER	S19-Fe02505	TRIP SPIKE	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Benzene	NA	NA	NA	87	N	REG	
638673	638673	WATER	S19-Fe02505	TRIP SPIKE	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Ethylbenzene	NA	NA	NA	93	N	REG	
638673	638673	WATER	S19-Fe02505	TRIP SPIKE	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	m&p-Xylenes	NA	NA	NA	93	N	REG	
638673	638673	WATER	S19-Fe02505	TRIP SPIKE	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	o-Xylene	NA	NA	NA	100	Y	REG	
638673	638673	WATER	S19-Fe02505	TRIP SPIKE	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Toluene	NA	NA	NA	96	N	REG	
638673	638673	WATER	S19-Fe02505	TRIP SPIKE	LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Xylenes - Total	NA	NA	NA	95	N	REG	

Appendix M Decontamination and Calibration Records

Field Equipment Calibration and Decontamination

PROJECT NAME: Manse Rd	**PROJECT NO:** 54963
FIELD DATES: 29-31-1-19 & 4-2-19	**FIELD STAFF:** MN

CALIBRATION SUMMARY
EQUIPMENT: PID
CALIBRATION STANDARD: 150 100

DATE	TIME	READING (ppm$_v$)	COMMENTS
29	0701	99.9	bump test - ok
30	0657	100.1	ok
31	0705	100.0	ok
4	0730	100.5	ok

DECONTAMINATION SUMMARY

EQUIPMENT: Hand trowel

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

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS.

AirMet Scientific P/L
Level 3, 18-26 Dickson Avenue
Artarmon
NSW 2064, Australia
Tel: 02 8425 8300
Fax: 02 8425 8399

Calibration Certificate

This document certifies that the instrument detailed has been calibrated to the parameters

Certificate Print Date: 16-Nov-2018
Calibration Date: 16-Nov-2018
Next Calibration Due: 15-May-2019

Call ID: 233896
Job Number: S2338960002

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:** 24°C **As Found:** In Tolerance **Result:** Pass
Humidity: 60% **Certificate:** S2338960002

Desc	As Found Actual	As Found Result	As Left (Cal Status) Actual	As Left (Cal Status) Result
PID ISOBUTYLENE	98.0	Pass	100.0	Pass
PID ISOBUTYLENE	1002.0	Pass	1000.0	Pass

Standard Used

Equip ID	Description	Valid Until	Cert
SY234	ISO-BUTYLENE 1000PPM, AIR BALANCE	08-10-2021	BU 70910-022118
SY212	ZERO GRADE AIR, O2 20.9%VOL	31-03-2021	BU 70910-022118
SY211	ISOBUTYLENE 100PPM. AIR BALANCE	07-01-2021	400273640

Completed By: Jason Cheng **Signed:** _____

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 10E101052

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 10.00		pH 10.00		324189	pH 10.09
2. pH 7.00		pH 7.00		317272	pH 6.92
3. pH 4.00		pH 4.00		324985	pH 3.94
4. mV		234mV		325420/325421	233.6mV
5. EC		2.76mS		324347	2.74mS
6. D.O		0.00ppm		10175	0.00ppm
7. Temp		20°C		MultiTherm	19.9°C

Calibrated by: Maria Orlova

Calibration date: 30/01/2019

Next calibration due: 1/03/2019

Appendix N Borehole Logs

TP00

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 30/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				SM-SC	Silty clayey sand, brown, dry, heterogeneous, loose, poorly graded, medium sand, including rootlets	TP00 0.0-0.15 PID = 8.9 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay, brown, dry, heterogeneous, firm, low plasticity, including rootlets	TP00 0.2-0.3 PID = 9.9 ppm	No ACM, odour or staining
	0.5	0.40		CL-ML	Silty clay, grey, dry, heterogeneous, firm, low plasticity, including rootlets and traces of ironstone gravel	TP00 0.4-0.5 PID = 2.4 ppm	No ACM, odour or staining
		0.60		CL-ML	Silty clay, brown with red/orange mottling, damp, stiff, medium plasticity, including traces of ironstone gravel		No ACM, odour or staining
	1.0					TP00 1.0-1.1	
	1.5						
	2.0						
		2.00			Test Pit TP00 terminated at 2m		
	2.5						

TP01

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 30/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Gravelly silty sand, brown/grey, dry, heterogeneous, medium dense, coarse gravel, poorly graded, medium sand, including rootlets	TP01 0.0-0.1	No ACM, odour or staining
		0.10		Fill	Silty clay, dark brown, dry, heterogeneous, very stiff, medium plasticity, including ironstone gravel		ACM observed, no odour or staining
						TP01 0.2-0.3 PID = 2.1 ppm	
		0.30		CL-ML	Silty clay, light brown changing to orange/red/grey with depth, dry, homogeneous, stiff, high plasticity		No ACM, odour or staining
	0.5						
	1.0					TP01 1.0-1.1 PID = 10.5 ppm	
	1.5						
	2.0						
		2.00			Test Pit TP01 terminated at 2m		
	2.5						

TEST PIT JBSG TEST PIT - 2017.GPJ GINT STD AUSTRALIA.GDT 12/2/19

TP02

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 30/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Silty clay, brown/grey, damp, heterogeneous, firm, low plasticity, including rootlets and traces of ironstone gravel	TP02 0.0-0.15 PID = 6.5 ppm	No ACM, odour or staining
		0.20		Fill	Silty gravelly clay, brown/black, damp, heterogeneous, soft, low plasticity, including grey/black shale	TP02 0.2-0.3 PID = 3.6 ppm	No ACM, odour or staining
	0.5						
		0.50		CL-ML	Silty clay, brown with red/orange mottling, damp, stiff, medium plasticity		No ACM, odour or staining
	1.0					TP02 1.0-1.1 PID = 4 ppm	
	1.5						
	2.0						
		2.00			Test Pit TP02 terminated at 2m		
	2.5						

TP03

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 30/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Silty gravelly sand, dark brown, dry, heterogeneous, dense, poorly graded, including rootlets, traces of slag, asphalt, black bark, and cobbles of concrete gravel	TP03 0.0-0.15 PID = 5 ppm	No ACM, odour or staining
		0.40		CL-ML	Silty clay, light brown/red/orange, dry, homogeneous, stiff, high plasticity		No ACM, odour or staining
	0.5						
	1.0					TP03 1.0-1.1 PID = 7 ppm	
	1.5						
	2.0						
		2.00			Test Pit TP03 terminated at 2m		
	2.5						

TP04

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 30/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Gravelly silty sand, brown/grey, dry, heterogeneous, dense, coarse gravel, poorly graded, including rootlets	TP04 0.0-0.1 PID = 8.1 ppm	No ACM, odour or staining
		0.10		Fill	Silty clay, brown/dark grey, dry, heterogeneous, stiff, high plasticity, including traces of ironstone gravel		Slight organic odour no ACM or staining
						TP04 0.2-0.3 PID = 10.2 ppm	
		0.30		CL-ML	Silty clay, red/orange, dry, homogeneous, stiff, high plasticity		No ACM, odour or staining
	0.5						
	1.0					TP04 1.0-1.1 PID = 15.3 ppm	
	1.5						
	2.0						
		2.00			Test Pit TP04 terminated at 2m		
	2.5						

TP05

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 30/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Gravelly silty sand, dark brown, damp, heterogeneous, medium dense, poorly graded, medium sand, including rootlets	TP05 0.0-0.1 PID = 7.9 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay, red/orange with slight grey mottling, dry, hard, high plasticity		No ACM, odour or staining
	0.5						
						TP05 0.8-0.9 PID = 9.7 ppm	
	1.0						
	1.5					TP05 1.5-1.6 PID = 5.1 ppm	
	2.0						
		2.00			Test Pit TP05 terminated at 2m		
	2.5						

TP06

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 29/01/2019
Logged By: MN
Contractor: Terratest
Total Hole Depth (mbgs): 1.2
Pit Dimension (m3): 150

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Push Tube				Fill	Silty clay, dark brown, dry, heterogeneous, firm, low plasticity, including rootlets	TP06 0.0-0.2 PID = 7.1 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay brown with grey/yellow/red mottling, dry, stiff, high plasticity		No ACM, odour or staining
	0.5						
						TP06 0.8-0.9 PID = 1.3 ppm	
	1.0						
		1.20			Test Pit TP06 terminated at 1.2m		
	1.5						
	2.0						
	2.5						

TP07

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 29/01/2019
Logged By: MN
Contractor: Terratest
Total Hole Depth (mbgs): 2.2
Pit Dimension (m3): 150

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Push Tube				Fill	Sandy silty clay, brown, dry, heterogeneous, firm, low plasticity, including rootlets	TP07 0.0-0.1 PID = 10.1 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay, brown with grey mottling, damp, stiff, medium plasticity		No ACM, odour or staining
	0.5					TP07 0.4-0.5 PID = 6 ppm	
	1.0						
		1.20		CL-ML	Silty clay, light brown/yellow with grey mottling, damp, stiff, medium plasticity		No ACM, odour or staining
	1.5					TP07 1.3-1.4	
	2.0						
		2.20			Test Pit TP07 terminated at 2.2m		
	2.5						

TP08

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 01/02/2019
Logged By: MN
Contractor:
Total Hole Depth (mbgs): 0.8
Pit Dimension (m3): 50

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty clay, dark brown/grey, wet, heterogeneous, firm, high plasticity, including rootlets and ironstone gravel	TP08 0.0-0.1	No ACM, odour or staining
	0.5	0.40		CL-ML	Silty clay, light brown, moist, homogeneous, firm, high plasticity	TP08 0.4-0.5	No ACM, odour or staining
	1.0	0.80			Test Pit TP08 terminated at 0.8m		
	1.5						
	2.0						
	2.5						

TEST PIT JBSG TEST PIT - 2017.GPJ GINT STD AUSTRALIA.GDT 12/2/19

TP09

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 30/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Clayey silty sand, light brown, damp, heterogeneous, loose, including rootlets and weathered ironstone gravel	TP09 0.0-0.1	No ACM, odour or staining
		0.20		CL-ML	Silty clay, brown/yellow with light grey/yellow mottling, damp, firm, high plasticity, including rootlets		No ACM, odour or staining
	0.5						
	1.0					TP09 1.0-1.1	
	1.5						
		1.50		CL-ML	Silty clay, yellow/brown/grey with slight red mottling, damp, soft, high plasticity, including rootlets		No ACM, odour or staining
						TP09 1.7-1.8	
	2.0						
		2.00			Test Pit TP09 terminated at 2m		
	2.5						

TEST PIT JBSG TEST PIT - 2017.GPJ GINT STD AUSTRALIA.GDT 12/2/19

TP10

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 01/02/2019
Logged By: MN
Contractor:
Total Hole Depth (mbgs): 0.7
Pit Dimension (m3): 50

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty sand, brown, damp, heterogeneous, very loose, poorly graded, fine sand, including rootlets	TP10 0.0-0.1	No ACM, odour or staining
		0.30		CL-ML	Silty clay, brown with orange mottling, damp, stiff, medium plasticity		No ACM, odour or staining
	0.5					TP10 0.4-0.5	
		0.70			Test Pit TP10 terminated at 0.7m		
	1.0						
	1.5						
	2.0						
	2.5						

TP100

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 04/02/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				CL-ML	Silty clay, grey, dry, heterogeneous, hard, medium plasticity, including rootlets	TP100 0.0-0.1 PID = 0.8 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay, grey with slight red/orange mottling, damp, stiff, medium plasticity		No ACM, odour or staining
	0.5					TP100 0.4-0.5	
		0.50		CL-ML	Silty clay, red/grey with slight red/orange mottling, damp, stiff, medium plasticity		No ACM, odour or staining
	1.0					TP100 1.0-1.1 PID = 1.1 ppm	
	1.5						
	2.0					TP100 1.9-2.0	
		2.00			Test Pit TP100 terminated at 2m		
	2.5						

TP101

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 04/02/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				CL-ML	Silty clay, light yellow/grey, dry, heterogeneous, stiff, low plasticity, including rootlets	TP101 0.0-0.1	No ACM, odour or staining
		0.10		CL-ML	Silty clay, red/grey, dry, heterogeneous, stiff, low plasticity, including rootlets		No ACM, odour or staining
						TP101 0.2-0.3	
		0.30		CL-ML	Silty clay, light grey turning yellow/brown with red red/orange/grey mottling with depth, damp, firm, medium plasticity, including weathered ironstone gravel		No ACM, odour or staining
	0.5					TP101 0.5-0.6	
	1.0					TP101 1.1-1.2	
	1.5						
		1.60		CL-ML	Silty clay, red/grey with red red/orange/grey mottling with depth, damp, firm, medium plasticity		No ACM, odour or staining
	2.0					TP101 1.9-2.0	
		2.00			Test Pit TP101 terminated at 2m		
	2.5						

TP102

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 04/02/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				SM-SC	Silty clayey sand, light grey, dry, heterogeneous, loose, poorly graded, fine sand, including weathered ironstone gravel	TP102 0.0-0.1	No ACM, odour or staining
		0.30		CL-ML	Silty clay, grey/light brown/yellow with slight black mottling, damp, stiff, high plasticity		No ACM, odour or staining
	0.5					TP102 0.5-0.6	
	1.0						
	1.5						
	2.0					TP102 1.9-2.0	
		2.00			Test Pit TP102 terminated at 2m		
	2.5						

TP11

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 30/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Silty sand, dark brown, dry, heterogeneous, loose, poorly graded, fine sand, including rootlets and mulch	TP11 0.0-0.1 PID = 6 ppm	No ACM, odour or staining
		0.10		Fill	Sandy silty clay, light grey, heterogeneous, hard, medium palsticity, including rootlets		No ACM, odour or staining
						TP11 0.3-0.4 PID = 5 ppm	
		0.40		CL-ML	Silty clay, brown/grey with yellow/light brown mottling, dry, hard, high plasticity		No ACM, odour or staining
	0.5						
	1.0					TP11 1.1-1.2 PID = 9.3 ppm	
	1.5						
		1.50		CL-ML	Silty clay, brown/red with yellow/light brown mottling, dry, hard, high plasticity		No ACM, odour or staining
						TP11 1.7-1.8	
	2.0						
		2.00			Test Pit TP11 terminated at 2m		
	2.5						

TEST PIT JBSG TEST PIT - 2017.GPJ GINT STD AUSTRALIA.GDT 12/2/19

TP12

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 30/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Clayey silty sand, dark brown, dry, heterogeneous, loose, poorly graded, medium sand, including rootlets, glass, and can	TP12 0.0-0.1 PID = 5.4 ppm	No ACM, odour or staining
		0.10		CL-ML	Silty clay, yellow/light brown with light red mottling, dry, stiff, medium plasticity		No ACM, odour or staining
	0.5						
	1.0					TP12 1.0-1.1 PID = 4.6 ppm	
	1.5						
	2.0					TP12 1.8-1.9	
		2.00			Test Pit TP12 terminated at 2m		
	2.5						

TP13

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 30/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Silty clay, light brown, dry, heterogeneous, stiff, medium plasticity, including rootlets, elastic tube and traces of ironstone gravel	TP13 0.0-0.1 PID = 3.1 ppm	No ACM, odour or staining
		0.30		CL-ML	Silty clay, brown/yellow, dry, homogeneous, stiff, medium plasticity		No ACM, odour or staining
	0.5						
	1.0					TP13 1.0-1.1 PID = 11.5 ppm	
	1.5						
	2.0					TP13 1.8-1.9	
		2.00			Test Pit TP13 terminated at 2m		
	2.5						

TP14

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 01/02/2019
Logged By: MN
Contractor:
Total Hole Depth (mbgs): 0.6
Pit Dimension (m3): 50

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty sand, brown, damp, heterogeneous, very loose, poorly graded, fine sand, including rootlets	TP14 0.0-0.1	No ACM, odour or staining
		0.20		CL-ML	Silty clay, brown with slight red/orange mottling, damp, stiff, medium plasticity		No ACM, odour or staining
	0.5					TP14 0.4-0.5	
		0.60			Test Pit TP14 terminated at 0.6m		
	1.0						
	1.5						
	2.0						
	2.5						

TP15

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 30/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Silty clay, light brown/yellow, dry, heterogeneous, stiff, low plasticity, including rootlets	TP15 0.0-0.1 PID = 6.8 ppm	No ACM, odour or staining
		0.10		CL-ML	Silty clay, brown/red, dry, homogeneous, stiff, medium plasticity		No ACM, odour or staining
						TP15 0.3-0.4 PID = 2.2 ppm	
	0.5						
		0.50		CL-ML	Silty clay, yellow, dry, homogeneous, stiff, medium plasticity		No ACM, odour or staining
		0.60		CL-ML	Silty clay, brown, dry, homogeneous, stiff, medium plasticity		No ACM, odour or staining
	1.0					TP15 1.0-1.1	
	1.5						
						TP15 1.7-1.8	
	2.0						
		2.00			Test Pit TP15 terminated at 2m		
	2.5						

TP16

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 30/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				SM-SC	Silty clayey sand, light brown/yellow, dry, heterogeneous, loose, poorly graded, fine sand, including rootlets	TP16 0.0-0.1 PID = 8.5 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay, light brown/yellow with some orange/red/grey mottling, damp, soft, high plasticity		No ACM, odour or staining
	0.5						
	1.0					TP16 1.0-1.1 PID = 8.2 ppm	
		1.20		CL-ML	Silty clay, light brown/yellow with some orange/red/grey mottling, moist, soft, high plasticity		
	1.5						
						TP16 1.7-1.8	
	2.0						
		2.00			Test Pit TP16 terminated at 2m		
	2.5						

TP17

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 30/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Silty clay, light brown/yellow, damp, heterogeneous, firm, medium plasticity, including rootlets and piece of plastic bag	TP17 0.0-0.1 PID = 10 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay, light brown/grey, damp, heterogeneous, firm, medium plasticity, including weathered ironstone gravel		No ACM, odour or staining
	0.5					TP17 0.3-0.4 PID = 6.3 ppm	
		0.50		CL-ML	Silty clay, light brown/yellow changing to light red with depth with grey mottling, damp, homogeneous, stiff, medium plasticity, including weathered ironstone		No ACM, odour or staining
	1.0					TP17 1.0-1.1 PID = 6.2 ppm	
	1.5						
						TP17 1.7-1.8	
	2.0						
		2.00			Test Pit TP17 terminated at 2m		
	2.5						

TP18

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 30/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit	0.5			Fill	Silty clay, light brown/yellow, damp, heterogeneous, firm, medium plasticity, including rootlets	TP18 0.0-0.1 PID = 5.1 ppm	No ACM, odour or staining
		0.50		CL-ML	Silty clay, light brown/yellow with grey mottling, moist, soft, high plasticity		No ACM, odour or staining
	1.0					TP18 1.0-1.1 PID = 2.3 ppm	
	1.5						
	2.0					TP18 1.7-1.8	
		2.00			Test Pit TP18 terminated at 2m		
	2.5						

TP19

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 01/02/2019
Logged By: MN
Contractor:
Total Hole Depth (mbgs): 0.6
Pit Dimension (m3): 50

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Silty sand, brown, damp, heterogeneous, very loose, including rootlets	TP19 0.0-0.1	No ACM, odour or staining
		0.20		CL-ML	Silty clay, brown with slight red/orange mottling, damp, stiff, medium plasticity		No ACM, odour or staining
	0.5					TP19 0.4-0.5	
		0.60			Test Pit TP19 terminated at 0.6m		
	1.0						
	1.5						
	2.0						
	2.5						

TP20

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 31/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Clayey silty sand, light brown/yellow, dry, heterogeneous, loose, including rootlets and plastic bag pieces	TP20 0.0-0.1	No ACM, odour or staining
		0.30		CL-ML	Silty clay, brown/light red, dry, homogeneous, stiff, medium plasticity		No ACM, odour or staining
	0.5					TP20 0.4-0.5 PID = 1.9 ppm	
		0.80		CL-ML	Silty clay, grey/orange/red/brown, homogeneous, very stiff, medium plasticity		No ACM, odour or staining
	1.0					TP20 1.0-1.1 PID = 3.4 ppm	
	1.5						
						TP20 1.7-1.8	
	2.0						
		2.00			Test Pit TP20 terminated at 2m		
	2.5						

TP200

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 04/02/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				CL-ML	Silty clay, grey, dry, heterogeneous, firm, low plasticity, including rootlets	TP200 0.0-0.1	No ACM, odour or staining
		0.20		CL-ML	Silty clay, light brown/yellow/grey with orange/light red mottling, damp, hard, high plasticity		No ACM, odour or staining
	0.5					TP200 0.5-0.6	
	1.0					TP200 1.0-1.1	
	1.5						
	2.0					TP200 1.9-2.0	
		2.00			Test Pit TP200 terminated at 2m		
	2.5						

TP201

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 04/02/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				CL-ML	Silty clay, brown/grey, dry, heterogeneous, low plasticity, hard, including rootlets	TP201 0.0-0.1	No ACM, odour or staining
		0.10		CL-ML	Silty clay, red with some grey as depth increases with grey/orange mottling, damp, firm, medium plasticity		No ACM, odour or staining
	0.5					TP201 0.5-0.6	
	1.0					TP201 1.0-1.1	
	1.5						
	2.0					TP201 1.9-2.0	
		2.00			Test Pit TP201 terminated at 2m		
	2.5						

TEST PIT JBSG TEST PIT - 2017.GPJ GINT STD AUSTRALIA.GDT 12/2/19

TP21

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 31/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Clayey silty sand, light brown/yellow, damp, heterogeneous, loose, fine sand, including rootlets	TP21 0.0-0.1 PID = 8.4 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay, light brown/yellow, damp, heterogeneous, firm, medium plasticity, including weathered shale		No ACM, odour or staining
	0.5					TP21 0.4-0.5 PID = 4.2 ppm	
	1.0	1.00		CL-ML	Silty clay, brown/red with red/grey mottling, damp, firm, medium plasticity, including weathered shale	TP21 1.0-1.1 PID = 7.2 ppm	No ACM, odour or staining
	1.5					TP21 1.7-1.8	
	2.0	2.00			Test Pit TP21 terminated at 2m		
	2.5						

TP22

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 31/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				SC-SM	Clayey silty sand, light grey, damp, heterogeneous, loose, poorly graded, fine sand, including rootlets and weathered shale	TP22 0.0-0.1 PID = 3.5 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay, light grey/yellow/brown, damp, homogeneous, firm, high plasticity		No ACM, odour or staining
	0.5					TP22 0.6-0.7 PID = 5 ppm	
	1.0						
	1.5					TP22 1.5-1.6	
	2.0						
		2.00			Test Pit TP22 terminated at 2m		
	2.5						

TP23

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 01/02/2019
Logged By: MN
Contractor:
Total Hole Depth (mbgs): 0.5
Pit Dimension (m3): 50

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Hand Auger				Fill	Silty sand, brown, damp, heterogeneous, very loose, poorly graded, fine sand, including rootlets	TP23 0.0-0.1 PID = 0.3 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay, brown with slight red/orange mottling, damp, stiff, medium plasticity		No ACM, odour or staining
	0.5					TP23 0.4-0.5 PID = 0.5 ppm	
		0.50			Test Pit TP23 terminated at 0.5m		
	1.0						
	1.5						
	2.0						
	2.5						

TEST PIT JBSG TEST PIT - 2017.GPJ GINT STD AUSTRALIA.GDT 12/2/19

TP24

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 31/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Silty clayey sand, light grey, dry, heterogeneous, loose, poorly graded, medium sand, including rootlets, bark	TP24 0.0-0.1 PID = 3.9 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay, brown/red, dry, homogeneous, hard, medium plasticity	TP24 0.2-0.3 PID = 5.7 ppm	No ACM, odour or staining
		0.30		CL-ML	Silty clay, brown/yellow/grey, homogeneous, damp, firm, medium plasticity		No ACM, odour or staining
	0.5						
	1.0	1.00				TP24 1.0-1.1	
	1.5					TP24 1.7-1.8	
	2.0				Test Pit TP24 terminated at 2m		
	2.5						

TP25

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 01/02/2019
Logged By: MN
Contractor:
Total Hole Depth (mbgs): 0.6
Pit Dimension (m3): 50

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Hand Auger				Fill	Silty sand, brown/grey, damp, heterogeneous, very loose, poorly graded, fine sand, including rootlets and plastic bag piece	TP25 0.0-0.1 PID = 0.3 ppm	No ACM, odour or staining
		0.30		CL-ML	Silty clay, brown, damp, homogeneous, firm, medium plasticity		No ACM, odour or staining
	0.5					TP25 0.4-0.5 PID = 0.3 ppm	
		0.60			Test Pit TP25 terminated at 0.6m		
	1.0						
	1.5						
	2.0						
	2.5						

TEST PIT JBSG TEST PIT - 2017.GPJ GINT STD AUSTRALIA.GDT 12/2/19

TP26

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 31/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Silty clay, brown/grey, dry, heterogeneous, firm, medium plasticity, including rootlets	TP26 0.0-0.1 PID = 4.6 ppm	No ACM, odour or staining
		0.30		CL-ML	Silty clay, brown/red with light brown/grey mottling, damp, stiff, high plasticity, including weathered shale		No ACM, odour or staining
	0.5					TP26 0.4-0.5 PID = 3.3 ppm	
	1.0						
	1.5						
		1.50		CL-ML	Silty clay, grey with light brown/grey mottling, damp, stiff, high plasticity, including weathered shale	TP26 1.5-1.6	No ACM, odour or staining
	2.0						
		2.00			Test Pit TP26 terminated at 2m		
	2.5						

TP27

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 01/02/2019
Logged By: MN
Contractor:
Total Hole Depth (mbgs): 0.6
Pit Dimension (m3): 50

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Hand Auger				Fill	Gravelly silty sand, brown/grey, damp, heterogeneous, medium dense, poorly graded, medium sand, including rootlets	TP27 0.0-0.1 PID = 0.3 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay, grey/brown with slight red mottling, damp, firm, medium plasticity		No ACM, odour or staining
	0.5					TP27 0.4-0.5 PID = 0.2 ppm	
		0.60			Test Pit TP27 terminated at 0.6m		
	1.0						
	1.5						
	2.0						
	2.5						

TP28

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 31/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Silty clay, light grey, dry, heterogeneous, stiff, medium plasticity, including rootlets	TP28 0.0-0.1 PID = 6 ppm	No ACM, odour or staining
		0.10		CL-ML	Silty clay, light brown/red, damp, homogeneous, stiff/hard, medium plasticity		No ACM, odour or staining
							Slight staining due to organic roots, no ACM or odour
	0.5					TP28 0.4-0.5 PID = 6.7 ppm	No ACM, odour or staining
	1.0					TP28 1.0-1.1	
		1.40		CL-ML	Silty clay, light brown/yellow/grey/light red, damp, homogeneous, firm, high plasticity		No ACM, odour or staining
	1.5					TP28 1.7-1.8	
	2.0						
		2.00			Test Pit TP28 terminated at 2m		
	2.5						

TP29

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 01/02/2019
Logged By: MN
Contractor:
Total Hole Depth (mbgs): 0.6
Pit Dimension (m3): 50

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Hand Auger				Fill	Silty sand, brown/grey, damp, heterogeneous, very loose, poorly graded, fine sand, including rootlets and traces of ironstone gravel	TP29 0.0-0.1 PID = 0.3 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay, brown/yellow, damp, homogeneous, firm, medium plasticity		No ACM, odour or staining
	0.5					TP29 0.4-0.5 PID = 0.5 ppm	
		0.60			Test Pit TP29 terminated at 0.6m		
	1.0						
	1.5						
	2.0						
	2.5						

TP30

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 31/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Silty clay, light brown, dry, heterogeneous, firm, low plasticity, including rootlets	TP30 0.0-0.1 PID = 13.1 ppm	No ACM, odour or staining
		0.30		CL-ML	Silty clay, light brown/yellow/grey, damp, homogeneous, soft, high plasticity		No ACM, odour or staining
	0.5						
	1.0					TP30 1.0-1.1 PID = 5.3 ppm	
		1.30		CL-ML	Silty clay, light brown/yellow/grey, moist, homogeneous, soft, high plasticity		
	1.5						
						TP30 1.7-1.8	
	2.0						
		2.00			Test Pit TP30 terminated at 2m		
	2.5						

TP300

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 04/02/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty clay, grey, dry, heterogeneous, firm, low plasticity, including rootlets and traces of ironstone gravel	TP300 0.0-0.1	No ACM, odour or staining
		0.10		Fill	Silty clay, grey/slight black wih red/orange mottling, dry, stiff, medium plasticity, including traces of ash		No ACM, odour or staining
	0.5					TP300 0.4-0.5	
		0.50		CL-ML	Silty clay, brown/light red, damp, homogeneous, stiff, medium plasticity, including weathered ironstone gravel		No ACM, odour or staining
	1.0					TP300 1.0-1.1	
	1.5						
	2.0					TP300 1.9-2.0	
		2.00			Test Pit TP300 terminated at 2m		
	2.5						

TP301

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 04/02/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty clay, light brown/grey, dry, heterogeneous, stiff, low plasticity, including rootlets, plastic bag pieces and plastic	TP301 0.0-0.1	No ACM, odour or staining
	0.5	0.40		CL-ML	Silty clay, light grey/white changing to darker grey with depth, dry, homogeneous, stiff, low plasticity	TP301 0.4-0.5	No ACM, odour or staining
	1.0					TP301 1.0-1.1	
		1.20		CL-ML	Silty clay, light brown/yellow, damp, homogeneous, stiff, medium plasticity		No ACM, odour or staining
	1.5						
	2.0					TP301 1.9-2.0	
		2.00			Test Pit TP301 terminated at 2m		
	2.5						

TP302

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 04/02/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Silty clay, dark brown, dry, heterogeneous, stiff, low plasticity, including rootlets and plastic	TP302 0.0-0.1	No ACM, odour or staining
		0.10		CL	Clay, brown/dark brown, dry, heterogeneous, stiff, medium plasticity, including traces of ironstone gravel and weathered sandstone		No ACM, odour or staining
	0.5					TP302 0.5-0.6	
		0.80					
	1.0					TP302 1.1-1.2	
	1.5						
	2.0					TP302 1.9-2.0	
					Test Pit TP302 terminated at 2m		
	2.5						

TEST PIT JBSG TEST PIT - 2017.GPJ GINT STD AUSTRALIA.GDT 12/2/19

TP31

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 31/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Gravelly silty sand, grey, dry, heterogeneous, dense, rounded gravel, poorly graded, fine sand, including rootlets, plastic bag pieces, piece of rope	TP31 0.0-0.1 PID = 7.4 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay, brown/light red with light brown/yellow/grey mottling, damp, stiff, medium plasticity		No ACM, odour or staining
	0.5						
						TP31 0.8-0.9	
	1.0						
	1.5						
						TP31 1.7-1.8	
	2.0						
		2.00			Test Pit TP31 terminated at 2m		
	2.5						

TP32

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 31/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Silty clay, light grey, dry, heterogeneous, very stiff, low plasticity, including rootlets and plastic bag piece	TP32 0.0-0.1 PID = 5.8 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay, red/grey with grey/light red mottling, damp, stiff, medium plasticity		No ACM, odour or staining
	0.5						
						TP32 0.7-0.8 PID = 5.6 ppm	
	1.0						
	1.5						
		1.50		CL-ML	Silty clay, light brown/yellow with grey/light red mottling, damp, stiff, medium plasticity		
						TP32 1.7-1.8	
	2.0						
		2.00			Test Pit TP32 terminated at 2m		
	2.5						

TP33

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 31/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Test Pit				Fill	Silty clay, grey, dry, heterogeneous, stiff, low plasticity, including rootlets and bark	TP33 0.0-0.1 PID = 2.7 ppm	No ACM, odour or staining
		0.20		CL-ML	Silty clay, brown with light brown/yellow/grey mottling, damp, firm, medium plasticity		No ACM, odour or staining
	0.5						
	1.0					TP33 1.0-1.1	
	1.5						
		1.80		CL-ML	Silty clay, grey/light brown/yellow mottling, damp, firm, medium plasticity	TP33 1.8-1.9	No ACM, odour or staining
	2.0						
		2.00			Test Pit TP33 terminated at 2m		
	2.5						

TEST PIT JBSG TEST PIT - 2017.GPJ GINT STD AUSTRALIA.GDT 12/2/19

TP34

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 31/01/2019
Logged By: MN
Contractor: Excel
Total Hole Depth (mbgs): 2
Pit Dimension (m3): 300

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples / Tests / Remarks	Additional Observations
Test Pit				Fill	Silty clay, brown/grey, damp, heterogeneous, very stiff, medium plasticity, including rootlets and bark	TP34 0.0-0.1 PID = 4.8 ppm	No ACM, odour or staining
		0.10		CL-ML	Silty clay, red with light yellow/grey mottling, damp, hard, medium plasticity		No ACM, odour or staining
	0.5					TP34 0.4-0.5 PID = 16.3 ppm	
		0.60		CL-ML	Silty clay, grey/light brown/yellow, damp, firm, high plasticity		No ACM, odour or staining
	1.0					TP34 1.0-1.1	
	1.5						
						TP34 1.7-1.8	
	2.0						
		2.00			Test Pit TP34 terminated at 2m		
	2.5						

TP400

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 04/02/2019
Logged By: MN
Contractor:
Total Hole Depth (mbgs): 1.2
Pit Dimension (m3): 50

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				SM	Silty sand, grey/brown, damp, heterogeneous, loose, poorly graded, fine sand, including rootlets	TP400 0.0-0.1	No ACM, odour or staining
		0.30		CL-ML	Silty clay, grey/light brown with dark brown mottling, damp, soft, low plasticity, including weathered ironstone gravel		No ACM, odour or staining
	0.5					TP400 0.4-0.5	
		0.60		CL-ML	Silty clay, grey/light brown with dark brown mottling, moist, firm, high plasticity, including weathered ironstone gravel		No ACM, odour or staining
	1.0					TP400 0.8-0.9	
		1.20			Test Pit TP400 terminated at 1.2m		
	1.5						
	2.0						
	2.5						

TEST PIT JBSG TEST PIT - 2017.GPJ GINT STD AUSTRALIA.GDT 12/2/19

TP401

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 04/02/2019
Logged By: MN
Contractor:
Total Hole Depth (mbgs): 0.8
Pit Dimension (m3): 50

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

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				SM	Silty sand, grey/brown, damp, heterogeneous, loose, poorly graded, fine sand, including rootlets	TP401 0.0-0.1	No ACM, odour or staining
	0.5	0.40		CL-ML	Silty clay, grey/light brown with dark brown mottling, damp, soft, low plasticity, including weathered ironstone gravel	TP401 0.4-0.5	No ACM, odour or staining
	1.0	0.80			Test Pit TP401 terminated at 0.8m	TP401 0.8-0.9	
	1.5						
	2.0						
	2.5						

MW01

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 29/01/2019
Logged By: MN
Contractor: Terratest
Total Hole Depth (mbgs): 8.2
Bore Diameter (mm): 125

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

Water Level Initial (mbgs): 5.5
Surface Finish: Standpipe
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 5
Screen Bottom Depth (mbgs): 8

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Push Tube						Fill	Sandy silty clay, dark brown, dry, heterogeneous, stiff, medium plasticity, including rootlets	MW01 0.0-0.2 PID = 1.5 ppm	No ACM, odour or staining
				0.30		CL-ML	Silty clay, red/brown with grey mottling, dry, hard, high plasticity	MW01 0.4-0.5 PID = 1.6 ppm	No ACM, odour or staining
			1					MW01 1.0-1.1 PID = 2 ppm	
				1.20		CL	Clay mixed with shale, light brown/grey, with grey mottling, dry, medium plasticity	MW01 1.5-1.6 PID = 0.8 ppm	No ACM, odour or staining
			2					MW01 2.0-2.1 PID = 1.3 ppm	
Solid Flight Auger				2.20		SHALE	Crushed weathered shale, grey, dry, firm, including brown clay mottled grey		No ACM, odour or staining
			3						
			4						
			5						
	▼			5.50		SHALE	Crushed weathered shale, grey, wet, firm, including brown clay mottled grey	MW01 5.5-5.6 PID = 2.4 ppm	No ACM, odour or staining
			6	6.00		SHALE	Crushed weathered shale, grey, saturated, firm, including brown clay mottled grey		
			7						No ACM, odour or staining
			8						
				8.20			Borehole MW01 terminated at 8.2m		
			9						

WELL JBSG WELL - 2017.GPJ GINT STD AUSTRALIA.GDT 12/2/19

MW02

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 29/01/2019
Logged By: MN
Contractor: Terratest
Total Hole Depth (mbgs): 8.2
Bore Diameter (mm): 125

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

Water Level Initial (mbgs): 6.5
Surface Finish: Standpipe
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 5.2
Screen Bottom Depth (mbgs): 8.2

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Push Tube						CL-ML-SM	Sandy silty clay, brown, dry, heterogeneous, very stiff, medium plasticity, including rootlets	MW02 0.0-0.2 PID = 13.6 ppm	No ACM, odour or staining
				0.30		CL-ML	Silty clay, brown/grey with red/brown mottling, dry, very stiff, medium plasticity	MW02 0.4-0.5 PID = 13.5 ppm	No ACM, odour or staining
			1	1.20		CL-ML	Silty clay, brown/grey with grey mottling, damp, firm, high plasticity	MW02 1.2-1.3 PID = 21.2 ppm	No ACM, odour or staining
			2	1.80		CL-ML	Silty clay, brown/dark grey with grey/black mottling, damp, firm, high plasticity	MW02 1.9-2.0 PID = 16.8 ppm	No ACM, odour or staining
				2.40		CL-ML	Silty clay, brown/light grey with grey mottling, damp, firm, high plasticity		No ACM, odour or staining
			3	3.20		CL-GC	Gravelly clay, brown with red/grey mottling, damp, very stiff, high plasticity, including ironstone gravel	MW02 3.0-3.1 PID = 7.8 ppm	No ACM, odour or staining
				3.50		CL-ML	Silty clay, brown with grey mottling, damp, stiff, high plasticity		No ACM, odour or staining
			4	4.20		CL-GC	Gravelly clay, brown with red/grey mottling, damp, very stiff, high plasticity, including ironstone gravel		No ACM, odour or staining
				4.50		CL-ML	Silty clay, brown with grey mottling, damp, stiff, high plasticity		No ACM, odour or staining
			5	5.30		CL-GC	Gravelly clay, brown with red/grey mottling, damp, very stiff, high plasticity, including ironstone gravel		No ACM, odour or staining
			6	6.20		CL-ML	Silty clay, brown/yellow with grey mottling, damp, hard, high plasticity, including minor ironstone gravel	MW02 6.0-6.1 PID = 3.1 ppm	No ACM, odour or staining
Solid Flight Auger	▼			6.50		SHALE	Shale, grey, saturated		No ACM, odour or staining
			7						
			8						
				8.20			Borehole MW02 terminated at 8.2m		
			9						

WELL_JBSG WELL - 2017.GPJ GINT STD AUSTRALIA.GDT 12/2/19

MW03

Project Number: 54963
Client: Altis Property Group
Project Name: Mamre Road DSI
Site Address: Mamre Road, Kemps Creek

Date: 29/01/2019
Logged By: MN
Contractor: Terratest
Total Hole Depth (mbgs): 7.5
Bore Diameter (mm): 125

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

Water Level Initial (mbgs): 5.5
Surface Finish: Standpipe
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 4.5
Screen Bottom Depth (mbgs): 7.5

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Push Tube						Fill	Sandy silty clay, brown, dry, heterogeneous, stiff, medium plasticity, including rootlets	MW03 0.0-0.2 PID = 4.3 ppm	No ACM, odour or staining
				0.20		CL	Clay, red/brown with grey and slight orange mottling, dry, very stiff, high plasticity, including rootlets	MW03 0.4-0.5 PID = 4.4 ppm	
			1						No ACM, odour or staining
				1.50		CL	Clay, grey/light brown, damp, homogeneous, stiff, high plasticity	MW03 1.5-1.6 PID = 2.1 ppm	
			2						No ACM, odour or staining
				2.80		CL	Clay, grey, moist, homogeneous, stiff, high plasticity	MW03 2.9-3.0 PID = 4.5 ppm	No ACM, odour or staining
Solid Flight Auger				3.20		CL	Clay, light brown/yellow, moist, homogeneous, firm, high plasticity		
			4						No ACM, odour or staining
	▶		5						
				5.50		CL	Clay, light brown/yellow, saturated, homogeneous, firm, high plasticity		
			6						No ACM, odour or staining
			7						
				7.50			Borehole MW03 terminated at 7.5m		
			8						
			9						

WELL JBSG WELL - 2017.GPJ GINT STD AUSTRALIA.GDT 12/2/19

Appendix O Groundwater Monitoring Event Field Sheets

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 10E101052

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 10.00		pH 10.00		324189	pH 10.09
2. pH 7.00		pH 7.00		317272	pH 6.92
3. pH 4.00		pH 4.00		324985	pH 3.94
4. mV		234mV		325420/325421	233.6mV
5. EC		2.76mS		324347	2.74mS
6. D.O		0.00ppm		10175	0.00ppm
7. Temp		20°C		MultiTherm	19.9°C

Calibrated by: Maria Orlova

Calibration date: 30/01/2019

Next calibration due: 1/03/2019

Groundwater Sampling Form
FIELD RECORD SHEETS

JBS&G

Project name: Mowle Rd, Kemps Creek	**Location:** Kemps Creek	**Well ID:** MW01	
Project number: 54463			
Person sampling: MN	**Sampling Date:** 1/2/19	**Weather:** Rainy	

Casing Diameter (mm): 50 mm		**Depth to NAPL (mBTOC):** –	
Well Completion:	Flush Mount / (Monument)	**Depth to SWL (mBTOC):** 4.735	
Well Cap Type:	Locking Cap / PVC / Other	**NAPL Thickness (m):** –	
Well Condition:	(Good) / Compromised (see notes)	**Depth to EoH (mbtoc):** 9.32	
Calculated Well Volume (L):	9.5746	**Water Column Depth (m):** 4.885	
Sampling Method:	Purge Volume: 4 Casings Vol. (L):	**NAPL Visually Verified?**	
	Low Flow: Pump Submersion depth (mBTOC): water at 4.735m well depth: 9.32 all water above ground		

Time	Volume Purged	Dissolved Oxygen	Temp.	pH	EC	ORP	Comments
	L	% / mgL/ppm	°C	pH units	S/cm	mV	include SWL for low flow (mBTOC)
7:50		4.06	19.1	6.7	22617	158.3	
7:52		3.28	19.0	6.56	22595	154.5	
7:55		3.02	19.0	6.56	22634	152.6	
7:58		2.87	19.0	6.55	22651	151.3	
8:01		2.83	19.0	6.55	22663	150.3	
		End water level 4.725					
Acceptable Variation*		+/-10%	+/- 0.2 °C	+/-0.1 pH	+/-5%	+/-10mV	**Results Acceptable: YES / NO**

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:	Clear	**Sheen:**	YES / (NO)
Colour:	transparent	**Odour:**	YES / (NO)

			No.	Container / Preservative
Primary sample ID:	MW01			
Duplicate sample:	(YES) / NO	ID: QC20190201		Inorganic, Semivolatile, volatile, metal
Triplicate sample:	(YES) / NO	ID: QA20190201		1
Rinsate sample:	(YES) / NO	ID: Rinsate		
Sample on ice:	(YES) / NO			
Field Filter Method:	(0.45µm Filter) / Not Filtered			
Water Quality Meter:	yes			
Guaging Equipment:	IP			
Pump Type:	Peri			

Notes: Water column depth and measurements taken of the entire well (including casing that goes above ground level

Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)

Casing Diameter	25mm	50mm	100mm	150mm	300mm
Conversion Factor	0.98	1.96	7.85	49.1	196.3

Volume of water in well (L) = π * radius of gravel pack (m)^2 * height of water column (m)

*SA EPA Guidelines (June 2007) as referenced in NEPM

Groundwater Sampling Form
FIELD RECORD SHEETS

JBS&G

Project name: Mungeri Hempstead Creek	**Location:** Hempscreek	**Well ID:** MW02	
Project number: 54463			
Person sampling: MP	**Sampling Date:** 1/2/14	**Weather:** Raining / overcast	

Casing Diameter (mm):		**Depth to NAPL (mBTOC):**	
Well Completion:	Flush Mount / Monument	**Depth to SWL (mBTOC):**	
Well Cap Type:	Locking Cap / PVC / Other	**NAPL Thickness (m):**	
Well Condition:	Good / Compromised (see notes)	**Depth to EoH (mbtoc):**	
Calculated Well Volume (L):	9.4374	**Water Column Depth (m):**	
Sampling Method:	Purge Volume: 4 Casings Vol. (L):	**NAPL Visually Verified?**	
	Low Flow: Pump Submersion depth (mBTOC): water : 2.475 well depth: 7.79		

Time	Volume Purged	Dissolved Oxygen	Temp.	pH	EC	ORP	Comments
	L	% ☐ mgL/ppm ☐	°C	pH units	__S/cm	mV	include SWL for low flow (mBTOC)
10:50		0.17	21.2	6.87	21696	-12.5	
10:53		0.15	21.3	6.82	21735	-25.4	
10:56		0.10	21.5	6.79	22106	-29.8	
10:57		0.07	21.3	6.77	22087	-34.6	
11:00		0.06	21.3	6.75	22370	-35.2	
		water level end 3.273					
Acceptable Variation*		+/-10%	+/- 0.2 °C	+/-0.1 pH	+/-5%	+/-10mV	**Results Acceptable: YES / NO**

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:	Not clear very turbid (silty)	**Sheen:**	YES / (NO)
Colour:	light brown / yellow	**Odour:**	YES / (NO)

Primary sample ID:	MW02		**No.**	**Container / Preservative**
Duplicate sample:	YES / (NO)	ID:		
Triplicate sample:	YES / (NO)	ID:		
Rinsate sample:	YES / (NO)	ID:		
Sample on ice:	(YES) / NO			
Field Filter Method:	0.45µm Filter / Not Filtered			
Water Quality Meter:				
Guaging Equipment:				
Pump Type:				

Notes:

Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)

Casing Diameter	25mm	50mm	100mm	150mm	300mm
Conversion Factor	0.98	1.96	7.85	49.1	196.3

Volume of water in well (L) = π * radius of gravel pack $(m)^2$ * height of water column (m)

*SA EPA Guidelines (June 2007) as referenced in NEPM

Groundwater Sampling Form
FIELD RECORD SHEETS

JBS&G

Project name:	Monroe Rd, Hemps Creek	**Location:**	Hemps Creek	**Well ID:**	MW03
Project number:	54963				
Person sampling:	MN	**Sampling Date:**	1/2/19	**Weather:**	Raining

Casing Diameter (mm):		**Depth to NAPL (mBTOC):**	
Well Completion:	Flush Mount / Monument	**Depth to SWL (mBTOC):**	
Well Cap Type:	Locking Cap / PVC / Other	**NAPL Thickness (m):**	
Well Condition:	Good / Compromised (see notes)	**Depth to EoH (mbtoc):**	
Calculated Well Volume (L):	11.01128	**Water Column Depth (m):**	5.619
Sampling Method:	Purge Volume: 4 Casings Vol. (L):	**NAPL Visually Verified?**	
	Low Flow: Pump Submersion depth (mBTOC):	water: 2.677	total well = 8.295

Time	Volume Purged	Dissolved Oxygen	Temp.	pH	EC	ORP	Comments
	L	% ☐ mgL/ppm ☐	°C	pH units	__S/cm	mV	include SWL for low flow (mBTOC)
9:20		0.66	20	6.69	33708	154.6	Slightly turbid
9:22		0.60	20	6.60	33709	148.4	↓
9:25		0.4	19.9	6.56	33633	131.8	↓
9:27		0.39	19.9	6.55	33610	126.8	↓
9:30		0.37	19.9	6.55	33590	124.1	↓
	Abt 2L		End water level				2.762
Acceptable Variation*		+/-10%	+/- 0.2 °C	+/-0.1 pH	+/-5%	+/-10mV	**Results Acceptable: YES / NO**

LOW FLOW: Typical flow rate = 0.2- 0.4 L/min - Max. drawdown = 0.1 m - Well stable when 3 consecutive readings (either 3min apart or 1L apart)

PURGE: Min. sampling volume is 4 casing volumes or dry twice - 1 casing volume (50mm wells) = 2 L/m - 1 casing volume (100mm wells) = 8 L/m

Clarity:	turbid	**Sheen:**	YES / NO
Colour:	light brown	**Odour:**	YES / NO

Primary sample ID:	MW03	**No.**	**Container / Preservative**
Duplicate sample:	YES / (NO) ID:		
Triplicate sample:	YES / (NO) ID:		
Rinsate sample:	YES / (NO) ID:		
Sample on ice:	(YES) / NO		
Field Filter Method:	(0.45µm Filter) / Not Filtered		
Water Quality Meter:			
Guaging Equipment:			
Pump Type:			

Notes:

Calculated Well Volume (L) = Water Column Depth (m) * Conversion Factor (from table)

Casing Diameter	25mm	50mm	100mm	150mm	300mm
Conversion Factor	0.98	1.96	7.85	49.1	196.3

Volume of water in well (L) = π * radius of gravel pack $(m)^2$ * height of water column (m)

*SA EPA Guidelines (June 2007) as referenced in NEPM

Appendix P Groundwater Monitoring Well Geospatial Survey

1 February 2019

Our Ref: 12119

RE: MONITORING WELLS
PROPERTY: 707-711 MAMRE ROAD , KEMPS CREEK

	MGA COORDINATES		AHD HEIGHTS		
Point	**Easting**	**Northing**	**Top of Pipe**	**Surface Level**	**Type**
MW01	294632.8	6254300.6	44.60	43.65	Monument
MW02	294031.3	6254327.1	35.425	34.67	Monument
MW03	294232.2	6253881.8	36.89	36.12	Monument

Methodology: RTK GNSS for position (+/-10mm)
RTK GNSS (AUSGeoid09) for all other levels (+\-25mm)

AHD Origin: RTK GNSS (AUSGeoid09)

Stuart de Nett | Registered Surveyor | E: office@landsurveyors.net.au | W: www.landsurveyors.net.au |
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